

VERITAS NetBackup Advanced Reporter™ 5.1

System Administrator's Guide

for UNIX and Windows

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This product includes code licensed from RSA Security, Inc. Some portions licensed from IBM are available at <http://oss.software.ibm.com/icu4j/>

foldersTree (ftiens4.js)

This product includes a script originated from www.treeview.net. End users have permission to use the script in VERITAS NetBackup Advanced Reporter, but do not have permission to extract the JavaScript and use it in another application.

Tomcat

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).



Contents

Preface	xvii
What Is In This Manual?	xvii
Getting Help	xviii
Related Documents	xix
Related Resources	xx
Online Documentation	xx
Glossary	xxi
Accessibility Features	xxi
Conventions	xxi
Chapter 1. NBAR 5.1 Overview	1
Introduction	1
Why Use NBAR?	2
New Features in NBAR 5.1	2
New Features in NBAR 5.0	2
Limitations	3
How NBAR Works	3
How NBAR Gathers Report Data	4
Timing of Data Collection	5
Data Load in Progress Icon	5
Managing Data Collection across Time Zones (GDM Only)	5
Start of Reporting Day (SORD) Parameter	5
Classic NBAR	7
NBAR in a GDM environment	7



NBAR in a Clustered Environment	8
Using NBAR Outside the NetBackup Firewall	8
NetBackup Port Configuration	8
NBAR Port Configuration	9
Communication between NetBackup and NBAR	9
Allow Non-reserved Ports	9
If NetBackup Uses vnetd (VERITAS Network Daemon Service)	10
Firewall Scenarios	10
Standalone NBAR Configurations	11
NBAR with GDM Configurations	12
Chapter 2. Installing NetBackup Advanced Reporter	15
Supported Platforms	15
Platform Requirements	15
Supported Server Platforms	16
Supported Cluster Solutions	17
Supported Client Platforms	18
Calculating Installation Disk Space Requirements	19
Disk Space	19
Database Space	19
For a Standalone Installation	19
For a GDM Installation	20
Database Conversion	20
Data Collection for NetBackup before NBAR Is Installed	20
License Keys	21
Finding License Key Information on Windows Systems	21
Finding License Key Information on UNIX Systems	21
Planning for a GDM Configuration	22
Planning for a Clustered Configuration	22
Installation on UNIX Systems	23



Release Materials	23
Installation Requirements	23
Notes about Installation	23
For GDM Environments	24
For Clustered Environments Only	25
Installation Procedure	26
Additional Step Required for AIX Systems	28
Upgrading to NetBackup Advanced Reporter 5.1 on UNIX	28
Running the Web Console	29
Uninstalling NetBackup Advanced Reporter on UNIX	29
Installation on Windows Systems	31
Release Materials	31
Installation Requirements	31
Notes about Installation	31
For GDM Environments Only	32
Allowing NBAR Access to GDM Data	33
For Clustered Environments Only	33
Notes about NBAR and Clustering	33
Installation Procedure	34
Running the Web Console	35
Upgrading to NetBackup Advanced Reporter 5.1 on Windows	36
Uninstalling NetBackup Advanced Reporter	36
Uninstalling NBAR in a Clustered Environment on Windows	36
Chapter 3. Introduction to the NBAR Reports	37
Exploring the Web Console	37
The NBAR Report Tree	39
Report Tabs	39
Report Display Area	40
How Do I Navigate the NBAR Reports?	40



How Do I Access Hover Labels?	40
How Do I Follow Report Links?	40
How Do I Select Report Criteria?	41
What Do the Icons Next to Entries on Some Reports Mean?	41
What Do Blue Blocks Near Entries on Some Reports Mean?	42
What Determines the Timeframe for a Report?	42
How Do I Change the Reference Date?	43
How Do I Adjust the Reporting Timeframe?	44
How Does NBAR Count Backup Jobs?	46
Accessing Properties Pages	47
What Information Do I Get from the Policy Properties Page?	48
What Information Do I Get from the Job Properties Page?	49
What Information Do I Get from the Multistreamed Job Properties Page?	51
NetBackup Troubleshooting Guide	52
Chapter 4. Administrative Tasks	53
What Is the Configuration Utility?	53
To Access the Configuration Utility	54
Syntax for the Configuration Utility	54
arconfig Manpage Content	55
arconfig Examples	58
How Do I Display Configuration Details?	58
How Do I Change Configuration Information Locally?	58
How Do I Modify a Risk Threshold?	59
How Do I Create a GDM Server?	59
How Do I Modify a Threshold Option for a GDM Server?	60
How Do I Delete a Server from the GDM Domain?	60
How Do I Join a GDM Domain as a Managed Server?	60
How Do I Schedule Data Collection Processes?	61
Scheduling Data Collection Using crontab or at	62



Email Functionality in NBAR	64
How Do I Enable Email Functionality?	64
How Do I Configure the SMTP Server?	65
Parameters	65
How Do I Change the Sender's Email ID?	66
How Do I Email Individual Reports from the Browser?	66
How Do I Email Reports Using the Command Line Utility?	67
Parameters	68
How to Enter Data for Specific Reports	69
Parameters	69
How to Use a Script or Batch File to Send Reports	70
How Do I Schedule Report Delivery?	71
How Do I Troubleshoot the Email Reports Feature?	72
Sample Error Messages	72
Creating Custom Reports	73
How to Customize NBAR Reports	73
Example: Customizing the Active Backup Policy Definitions Report	74
Printing Reports	75
How Do I Print the Selected Report?	75
Backing Up the NBAR Database	75
Using NBAR with NBAC-enabled NetBackup	76
Chapter 5. Troubleshooting NBAR	77
What are the Logging Utilities?	77
Location of Logs	77
Retaining Logs	78
Log File Purging	78
ardumplog	78
Log Files Created by the Web Console	79
What Is the Database Export Utility?	81



Using the Database Export Utility	81
Sample Output	81
Parameters	81
Example	82
Record Values	82
Troubleshooting the Database Export Utility	84
Database Error	84
Command Line Error	84
Example	85
Troubleshooting Known Issues	85
Licensing Issues	85
Web Console	86
Console Does Not Work in High Security Zone	86
Running the NBAR Web Console with Windows Server 2003	86
Stopping and Starting Daemons or Services	86
Stopping and Starting NBAR Daemons on UNIX Systems	86
Stopping and Starting the NBAR Services on Windows Systems	87
Determining which Daemons or Services are Running	88
On UNIX Systems	88
On Windows Systems	88
Upgrade Failures on Solaris Systems	88
Managed Servers Configured with Non-Default Ports	89
Turning Off IP Address Lookup	89
Changing Reference Date or Timeframe in Two Browsers	90
Future Dates Appear to be Accepted by Timeframe	90
Data Load in Progress Icon	90
Small Character Size in Netscape 4.7	90
Email Client Issues	91
Database Issues	91
Job Data Not Being Collected	91



Hosts Table	91
Unable to Connect to Database Error Message	91
Report Issues	93
Master Server System Performance Report -- AIX only	93
Discrepancies in the Schedule Forecast Report	93
Active Media Report	93
Over-Reporting of Totals for Multiplexed Jobs	93
Job Retry Information	94

Chapter 6. Viewing the Management Reports 95

Viewing the Full Backups Reports	95
Full Job Completion Summary Report	96
How to Access this Report	96
Report Details	96
Full Backup Data Volumes Report	98
How to Access this Report	98
Report Details	98
Full Backup File Volumes Report	99
How to Access this Report	99
Report Details	99
Full Backup Job Durations Report	100
How to Access this Report	100
Report Details	100
Viewing the Incremental Backups Reports	101
Incremental Job Completion Summary Report	101
How to Access this Report	101
Report Details	101
Incremental Backup Data Volumes Report	103
How to Access this Report	103
Report Details	103



Incremental Backup File Volumes Report	104
How to Access this Report	104
Report Details	104
Incremental Backup Job Durations Report	105
How to Access this Report	105
Report details	105
Viewing the Restore Jobs Reports	107
Restore Job Summary Report	107
How to Access this Report	107
Report Details	107
Restore Data Volumes Report	109
How to Access this Report	109
Report Details	109
Viewing the Catalog Usage Reports	110
Disk Space Report	110
How to Access this Report	110
Report Details	110
Number of Catalog Files Report	112
How to Access this Report	112
Report Details	112
Viewing the Error Logs	113
Error Log Summary Report	113
How to Access this Report	113
Report Details	113
Error Log Summary by Client Report	115
How to Access this Report	115
Report Details	115
Chapter 7. Viewing the Administrative Reports	117
Site Summary Report	117



Report Details	118
Job List Reports	120
Site Details Job List	122
Report Details	122
Job Details by Policy Report	124
Report Details	124
Consolidated Error Log	126
Report Details	126
Media Errors Report	128
Report Details	128
Restore Details by Client Report	130
Report Details	130
Hosts under NetBackup Management Report	132
Report Details	132
Clients at Risk Report	133
Report Details	133
Chapter 8. Viewing the Media Reports	137
Available Media List	138
Report Details	138
Assigned Media List	140
Report Details	140
Expired Media List	142
Report Details	142
Offsite Media Candidates	144
Report Details	144
Full Tapes Utilization Report	146
Report Details	146
Ejected Media Status Report	147
Report Details	147



Chapter 9. Viewing the Performance Reports	149
Active Backup Policy Definitions Report	150
Report Details	150
Backup Job Schedule Forecast Report	151
Report Details	151
Window Utilization Report	153
Report Details	153
Window Usage By Backup Policy Report	154
Report Details	154
Master Server System Performance Report	156
Report Details	156
Drive Statistics Report	157
Report Details	157
Chapter 10. Viewing the End User and Misc. Reports	159
Client Job History Report	159
Report Details	159
Overview of the NBAR Miscellaneous Reports	162
Summary of Status Code <number> Report	163
Report Details	163
Summary of Status Codes for <client> Report	164
Report Details	164
Summary of Status Code <number> for <client> Report	165
Report Details	165
Job Details for Policy <policy name> Report	166
Report Details	166
Chapter 11. Viewing the GDM Reports	169
What Types of Information Do GDM Reports Contain?	170
Glossary	170
Global Site Size Report	172



Purpose of this Report	172
Report Details	173
Global Error Details Report	176
Purpose of this Report	176
Report Details	176
Global Backup Growth Report	179
Purpose of this Report	179
Report Details	180
Global Media Usage Report	182
Purpose of this Report	182
Report Details	183
Daily GDM Rollup Report	185
Purpose of this Report	185
Report Details	186
Appendix A. Database Schema for NBAR	187
Requirements	188
NBAR's Application Control Schema	189
NBAR Database Tables	189
properties	189
catalog_index	190
hosts	191
cpreferences	192
NetBackup Database Schema	193
Entity Relationships	193
NetBackup Table Definitions	194
nbjobs	194
nberrorlog	196
nberrormsg	197
nbclasses	197



nbclassfs	199
nbclients	200
nbcltypes	201
nbschedules	202
nbwindows	202
nbtypes	203
nbmedia	203
nbretention	205
nbstu	206
nbvolumes	206
vm pools	208
nbcatalog	209
vmstat	210
nblicense	211
nbjobfs	212
nbcontrol	213
nbcache	214
nbarlog	217
nbconfig	217
nblookup	218
nbdrive	218
GDM Table Definitions (on NBAR server)	220
gdmnbstat	220
gdmsitsiz	221
gdmbkgrow	221
gdmmeduse	222
gdmstatus	224
gdmsysinf	225
GDM Table Definitions (on GDM server)	226
nbserver	226



momnbstat	227
momsitsiz	227
mombkgrow	228
mommeduse	229
momstatus	230
momsysinf	231
Index	233





Preface

NetBackup Advanced Reporter (NBAR) is a storage management monitoring tool designed to simplify the task of monitoring and reporting on an organization's VERITAS NetBackup activities. If you have a GDM domain set up, you can use NBAR to monitor multiple NetBackup master servers. This version of NBAR supports Windows, Solaris, AIX and HP-UX platforms.

What Is In This Manual?

The *NetBackup Advanced Reporter System Administrator's Guide* describes how to install the Advanced Reporter program, how to operate the user interface, how to generate and interpret the various reports. It also describes the database schema and provides instructions for running other features of the application, such as the email utility.

This book consists of this preface followed by the chapters and appendices described below:

Chapter 1, NBAR 5.1 Overview provides an overview of NBAR architecture, for stand-alone NBAR installations and for NBAR with GDM installations.

Chapter 2, Installing NetBackup Advanced Reporter provides details on both UNIX and Windows installations, including requirements, supported platforms, and installation procedures.

Chapter 3, Introduction to the NBAR Reports explains how to navigate the NBAR interface and tailor the reports to get the information you want.

Chapter 4, Administrative Tasks provides information on the configuration and email utilities, and describes report customizing.

Chapter 5, Troubleshooting NBAR provides information on known issues.

Chapter 6, Viewing the Management Reports provides information on full, incremental, and catalog backups, restore jobs, and error log summaries.

Chapter 7, Viewing the Administrative Reports provides job and site summaries, error reports, and details on backup and restore jobs.

Chapter 8, Viewing the Media Reports provides details on media use.



Chapter 9, Viewing the Performance Reports provides details on system performance.

Chapter 10, Viewing the End User and Misc. Reports provides details on the job history report, and all reports only available through drill-down from another report. These include the error code reports, the *NetBackup Troubleshooting Guide*, and the job details report.

Chapter 11, Viewing the GDM Reports provides details on the reports which summarize the state of servers in a GDM environment.

Appendix A, Database Schema for NBAR provides details on NBAR's database schema.

Getting Help

Use the VERITAS Technical support web set to get help for NetBackup Advanced Reporter if you have questions.

Accessing the VERITAS Technical Support Web Site

The VERITAS Technical Support Web site allows you to do any of the following:

- ◆ obtain updated information about NetBackup Advanced Reporter, including system requirements, supported platforms, and supported peripherals
- ◆ contact the VERITAS Technical Support staff and post questions to them
- ◆ get the latest patches, upgrades, and utilities
- ◆ view the NetBackup Advanced Reporter Frequently Asked Questions (FAQ) page
- ◆ search the knowledge base for answers to technical support questions
- ◆ receive automatic notice of product updates
- ◆ find out about NetBackup Advanced Reporter training
- ◆ read current white papers related to NetBackup Advanced Reporter

The address for the VERITAS Technical Support Web site follows:

<http://support.veritas.com>

Using VERITAS Telephone and E-mail Support

Telephone support for NetBackup Advanced Reporter is only available with a valid support contract. To contact VERITAS for technical support, dial the appropriate phone number listed on the Technical Support Guide included in the product box and have your product license information ready for quick navigation to the proper support group.



▼ To locate the telephone support directory on the VERITAS web site

1. Open `http://support.veritas.com` in your web browser.
2. Click the **Phone Support** icon. A page that contains VERITAS support numbers from around the world appears.

▼ To contact support using E-mail on the VERITAS web site

1. Open `http://support.veritas.com` in your web browser.
2. Click the **E-mail Support** icon. A brief electronic form will appear and prompt you to:
 - ◆ Select a language of your preference
 - ◆ Select a product and a platform
 - ◆ Associate your message to an existing technical support case
 - ◆ Provide additional contact and product information, and your message
3. Click **Send Message**.

Related Documents

The *NetBackup Advanced Reporter System Administrator's Guide* contains details specific to the NBAR application. The Guide is available in HTML format and as a PDF file. You can access the HTML version through the **Help** button in the NBAR GUI. The PDF version resides with the other PDF documents in the \Doc directory on the CD or installation image.

Other documents you can refer to include:

- ◆ the *NetBackup System Administrator's Guide, volumes I & II*
Describes how to configure and manage the operation of VERITAS NetBackup.
- ◆ the *NetBackup Troubleshooting Guide*
Provides troubleshooting information for NetBackup and Media Manager.
- ◆ the *NetBackup Backup, Archive, and Restore Getting Started Guide*
Explains how to configure NetBackup and use it to perform backups, archives, and restores.
- ◆ the *NetBackup Release Notes*,



Provides important caveats and requirements regarding NetBackup that may not be in the manuals or online help. Includes supported platforms and operating systems.

- ◆ the *NetBackup High Availability Guide*

Describes using NetBackup with clustering solutions.

- ◆ *NetBackup Advanced Reporter Release Notes*,

Provides important caveats and requirements regarding NetBackup that may not be in the manuals or online help.

- ◆ Your web browser's user documentation.

Related Resources

Online Documentation

The *NetBackup Advanced Reporter System Administrator's Guide* contains details specific to the NBAR application. The Guide is available in HTML format and as a PDF file. You can access the HTML version through the **Help** button in the NBAR GUI. The PDF version resides with the other PDF documents in the \Doc directory on the CD or installation image.

In addition to the *Administrator's Guide*, you can access the Troubleshooting Guide directly from your browser by using the following URL:

`http://<NBAR_server>:<port>/nbar/tsguide.html`

where <NBAR_server> is the fully qualified name of the machine where NBAR is installed, and <port> is the number of the port the application uses.

NetBackup provides copies of related NetBackup manuals in Adobe Portable Document Format (PDF) on the NetBackup CD-ROM. For a complete list of NetBackup documents see the *NetBackup Release Notes*.

Glossary

If you encounter unfamiliar terminology, consult the NetBackup online glossary. The glossary contains terms and definitions for NetBackup and all additional NetBackup options and agents.

The NetBackup online glossary is included in the NetBackup help file.

▼ To access the NetBackup online glossary

1. In the NetBackup Administration Console (or Backup, Archive, and Restore), click **Help > Help Topics**.
2. Click the **Contents** tab.
3. Click **NetBackup Glossary of Terms**.

The glossary displays in a help window. Use the scroll function to navigate through the glossary.

Accessibility Features

NetBackup contains features that make the user interface easier to use by people who are vision impaired and by people who have limited dexterity. Accessibility features include:

- ◆ Support for assistive technologies such as screen readers and voice input (Windows servers only)
- ◆ Support for keyboard (mouse-less) navigation using accelerator keys and mnemonic keys

For more information about accessibility in NetBackup, see the *NetBackup System Administrator's Guide, volume I*.

Conventions

The following section explains typographical and other conventions used in this guide.

Product-Specific Conventions

The following term is used in VERITAS NetBackup documentation to increase readability while maintaining technical accuracy.

- ◆ Microsoft Windows, Windows



Terms used to describe a specific product or operating system developed by Microsoft, Inc. Some examples are, Windows 2000, Windows Server 2003, Windows servers, Windows clients, Windows platforms, or Windows GUI. For more information on the Windows operating systems that NetBackup supports, refer to the *VERITAS NetBackup Release Notes for UNIX and Windows* or go to the VERITAS support web site at <http://www.support.veritas.com>.

Note When a specific Windows product is identified in the documentation, only that particular product is valid in that instance.

Typographical Conventions

Here are the typographical conventions used throughout the manuals:

Conventions

Convention	Description
GUI Font	Used to depict graphical user interface (GUI) objects, such as fields, listboxes, menu commands, and so on. For example: Enter your password in the Password field.
<i>Italics</i>	Used for placeholder text, book titles, new terms, or emphasis. Replace placeholder text with your specific text. For example: Replace <i>filename</i> with the name of your file. Do <i>not</i> use file names that contain spaces.
Code	Used to show what commands you need to type, to identify pathnames where files are located, and to distinguish system or application text that is displayed to you or that is part of a code example.
Key+Key	Used to show that you must hold down the first key while pressing the second key. For example: Ctrl+S means hold down the Ctrl key while you press S.

You should use the appropriate conventions for your platform. For example, when specifying a path, use backslashes on Microsoft Windows and slashes on UNIX. Significant differences between the platforms are noted in the text.

Tips, notes, and cautions are used to emphasize information. The following samples describe when each is used.

Tip Used for nice-to-know information, like a shortcut.

Note Used for important information that you should know, but that shouldn't cause any damage to your data or your system if you choose to ignore it.

Caution Used for information that will prevent a problem. Ignore a caution at your own risk.

Command Usage

The following conventions are frequently used in the synopsis of command usage.

brackets []

The enclosed command line component is optional.

Vertical bar or pipe (|)

Separates optional arguments from which the user can choose. For example, when a command has the following format:

```
command arg1|arg2
```

In this example, the user can use either the *arg1* or *arg2* variable.

Navigating Multiple Menu Levels

When navigating multiple menu levels, a greater-than sign (>) is used to indicate a continued action.

The following example shows how the > is used to condense a series of menu selections into one step:

- ❖ Select **Start > Programs > VERITAS NetBackup > NetBackup Administration Console**.

The corresponding actions could be described in more steps as follows:

1. Click **Start** in the task bar.
2. Move your cursor to **Programs**.
3. Move your cursor to the right and highlight **VERITAS NetBackup**.
4. Move your cursor to the right. First highlight and then click **NetBackup Administration Console**.





This chapter provides an overview of NetBackup Advanced Reporter (NBAR). It contains the following sections:

- ◆ Introduction
 - ◆ Why Use NBAR?
 - ◆ New Features in NBAR 5.1
 - ◆ New Features in NBAR 5.0
 - ◆ Limitations
- ◆ How NBAR Works
 - ◆ How NBAR Gathers Report Data
 - ◆ Timing of Data Collection
 - ◆ Managing Data Collection across Time Zones (GDM Only)
- ◆ Classic NBAR
 - ◆ NBAR in a GDM environment
 - ◆ NBAR in a Clustered Environment
- ◆ Using NBAR Outside the NetBackup Firewall
 - ◆ NetBackup Port Configuration NBAR Port Configuration
 - ◆ Communication between NetBackup and NBAR
- ◆ Firewall Scenarios
 - ◆ Standalone NBAR Configurations
 - ◆ NBAR with GDM Configurations

Introduction

NetBackup Advanced Reporter is a storage management monitoring tool designed to simplify the task of monitoring and reporting on an organization's NetBackup activities.



Why Use NBAR?

NBAR provides a sophisticated reporting option to NetBackup customers. Rather than wading through the text files that make up NetBackup logs, NBAR presents the data you want to see in a succinct and intuitive format, on web pages accessed through a browser. The available reports help you analyze your NetBackup environment by presenting NetBackup data from four broad viewpoints:

- ◆ High-level summaries, which allow you to drill down to the specific trouble spots
- ◆ Detailed operational views, including a consolidated error log
- ◆ Historical perspectives for trend analysis and event/time correlation
- ◆ Performance indicators, such as data throughput

You can customize reports to view only the information you require.

NBAR also links to an on-line version of the *NetBackup Troubleshooter*. Descriptions of many VERITAS NetBackup error codes and recommended actions to resolve the error are only a mouse click away.

NBAR collects and reports on data generated by a NetBackup master server. The portrait of your NetBackup system provided by NBAR gives you an easily accessible overview of the health of your backup environment. NBAR with GDM collects and reports on data generated by multiple NetBackup master servers, providing a global perspective on your backup environments.

New Features in NBAR 5.1

- ◆ Support for VERITAS Cluster Solution (VCS) 4.1 for Windows
- ◆ Support for NetBackup Access Control (NBAC)

New Features in NBAR 5.0

- ◆ Initial support for clusters.
- ◆ NBAR reports on more job types.
- ◆ In previous versions of NBAR, the `KNOWN_MASTER` and `MASTER_OF_MASTERS` entries were shared with GDM. In version 5.0 and later, GDM tracks this information separately.
- ◆ You no longer need to use the cron or at utility to schedule a time for collected information to be sent to the NBAR server. In 5.0 and later, this occurs directly after the collection process (arloader) has run.



- ◆ On UNIX systems, NBAR will be automatically started by the NetBackup startup script.
- ◆ Better support for disk-based media; paths up to 255 characters supported. Catalog backups also support paths with up to 255 characters.
- ◆ NULL domain name support
We no longer require a domain name during NBAR installation. However, some UNIX systems require that you enter the test NULL for the domain name.
- ◆ In previous versions of NBAR, `--config -e true` disabled email, and `--config -e false` enabled it. This has been reversed in this release.
You must rewrite any scripts which include this parameter in order for the scripts to execute properly.
- ◆ Improved support for very large files
- ◆ Support for Windows 2003
- ◆ Support for Netscape 7

Limitations

- ◆ NBAR does not support Windows 64-bit hardware (Itanium)
- ◆ NBAR does not support upgrading from a standalone configuration to a clustered configuration.

How NBAR Works

NBAR takes advantage of NetBackup's client/server architecture. The application is installed on a NetBackup master server, and creates an open-schema database there. NBAR periodically asks the VERITAS NetBackup server for specific information about clients, policies, media, device, and catalog information and translates that information into its relational database, which can quickly generate reports on NetBackup operations including backups, restores, catalog usage, and much more.

NBAR consolidates VERITAS NetBackup information into reports that are easy to read and understand. These reports allow you to quickly identify problem areas and potential problem areas. They also provide a summary of data and a way to analyze that data to get a sense of the performance of your overall NetBackup environment. Maintaining a separate database allows NBAR to retain a record of NetBackup activities long after expired backup information has been purged from the NetBackup logs. This historic data allows you to track trends and spot trouble.



Using NBAR in a GDM environment allows you to gain perspective on the health of multiple NetBackup servers. GDM reports answer important questions. For example, which master server has the fastest growing catalog? Which master server has the most problems with its backup jobs? Which master servers are backing up the most data? Which storage units are likely to need to recycle their media the soonest? How long did the rollup take for each server? These reports provide an overarching view of all the systems that are part of a GDM domain.

Using NBAR in a clustered environment ensures that you will continue to have access to the information provided by the NBAR reports even in the event of a NetBackup failover.

NBAR Components

NBAR consists of the following components:

- ◆ A Web GUI engine, called the web console.
- ◆ A database server for the NBAR database.
- ◆ A data collection service.

These components reside on every NBAR server. In a GDM environment, they must reside on the NetBackup GDM master server and on every NBAR server managed by this GDM master. In a clustered environment, NBAR components must reside on every node in the cluster.

How NBAR Gathers Report Data

NetBackup master servers running NBAR gather information about the NetBackup environment by running NetBackup commands. NBAR then loads the information gathered into its database. The process that collects this data is called the *data loader*.

In a GDM environment, each GDM managed server summarizes information from all of its clients and sends the data to the GDM server. The process of collecting the data and passing it to the GDM server is called a *rollup*. This process is launched automatically at the end of the data collection process.

Unlike the NBAR database on each managed server, which is seeded from NetBackup during installation, the GDM database will not contain data until the GDM server receives its first rollup from the managed servers. Rollup occurs automatically at the end of each day's data collection. If you set up your servers at 9 A.M. Monday, GDM data will not display in your reports until after the first rollup occurs on Tuesday, as the data loader will already have run on Monday.

Timing of Data Collection

The data loader runs at 7:00 a.m. daily by default. This means that at 7:00 each morning, NBAR's collection process copies data from the NetBackup database to the NBAR database. Ideally, the data loader will run at a time or times when there is little NetBackup activity on your system. The data loader will only capture data from jobs that have completed. Data from jobs that are still in progress will be captured the next time the data loader runs.

Data Load in Progress Icon



If you generate a report while the data loader is in progress, the **Data Load in Progress** icon displays in the report pane. If you click the icon, the Data Loader Warning appears, advising you that the reports will contain more accurate data when the data loader has completed. A tooltip estimating the total time for data loader activity also displays. The time estimate is based on an average of historic data loader activity.

If you are working in a GDM environment, the icon only displays if you are generating reports for the managed server on which the data loader is active. No icon displays when you generate GDM reports, or reports for a managed server on which the data loader is not active.

Note The **Data Load in Progress** icon does not disappear when the process has completed. It will disappear only when you change or refresh the report.

Managing Data Collection across Time Zones (GDM Only)

In order to compile the most complete and accurate picture of the activity on your servers, the simplest approach is to make the server that begins its data collection last (in the U.S., the westernmost server) the GDM server. With this setup you can be assured that all the other servers have completed their data collection and sent it to the GDM server before the GDM server compiles its summary.

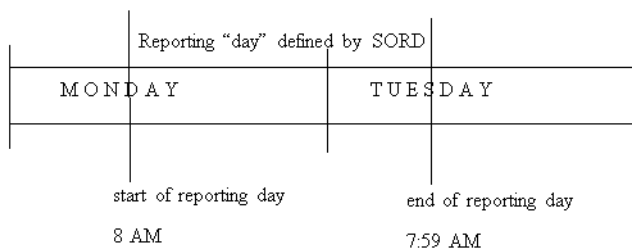
Start of Reporting Day (SORD) Parameter

In addition to the data loader, in a GDM environment, there is one other critically important time for each GDM managed server. The Start of Reporting Day parameter indicates the time at which a new reporting "day" (one 24-hour period) starts for each GDM managed server (in local time). The GDM server uses this time to distinguish what day the job ran (from the perspective of the GDM managed server) when it compiles the rollup information from every GDM managed server.



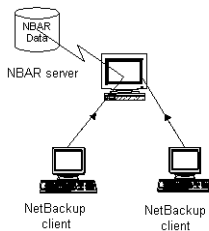
Caution We do not recommend that you change the SORD from the default setting. If NBAR starts collecting data using one definition of a “day”, and then switches to another, the numbers in your reports may not be entirely accurate. For example, a weekly backup job may be reported on different days if you move the SORD.

Timing data collection in NBAR



Classic NBAR

Classic NBAR



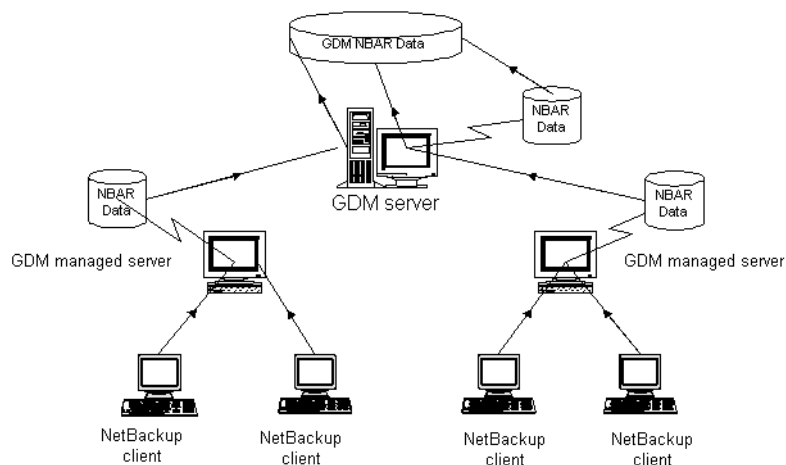
NBAR is installed on a single NetBackup master server, and gathers information about the NetBackup environment by running NetBackup commands. NBAR then loads the information it has gathered into its own database.

NBAR in a GDM environment

In a GDM environment, each GDM managed server still gathers NetBackup information from the system on which it is installed. This information is loaded into the local database server and summary information for the GDM reports is delivered to the GDM database tables on the GDM master server. The process of collecting the data and passing it to the GDM master server is called a *rollup*.

You must have already configured your NetBackup servers for GDM. If you have not already done so, please refer to the *NetBackup System Administrator's Guide* for information. For instructions on how to add a GDM machine to `bp.conf`, you can refer to "Allowing NBAR Access to GDM Data" on page 24 for UNIX systems, or "Allowing NBAR Access to GDM Data" on page 33 for Windows systems.

NBAR in a GDM environment



NBAR in a Clustered Environment

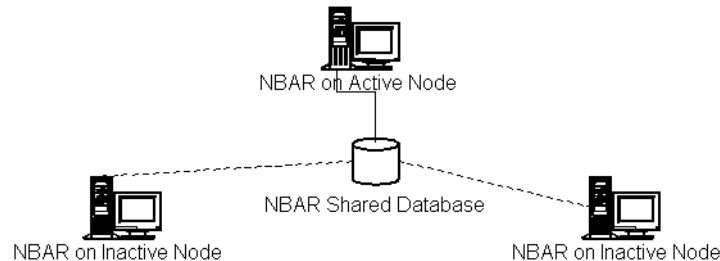
In a clustered environment, NBAR is considered part of the NetBackup service group. The NetBackup Advanced Reporter services are: the NBAR Database Server, NBAR System Monitor, and NBAR Web GUI Engine (web console).

NBAR must be installed on the inactive nodes first, then on the active node. NBAR does not cause failover. If NetBackup fails over, NBAR will fail over with NetBackup. However, if there is a problem with the NBAR application, a failover will not be triggered in NetBackup. NBAR licenses must be kept up-to-date on all nodes.

If a NetBackup installation fails over while NBAR is collecting data, data collection is not completed. In this case, we recommend you run the data collection utility manually.

Note The NBAR database is shared among nodes, but each node has its own `nbar.conf` and its own `web.xml`. These files are not shared between nodes. If you make changes to the `nbar.conf` file or the `web.xml` file on the active node, you must duplicate those changes on the inactive nodes.

NBAR in a Clustered Configuration



Using NBAR Outside the NetBackup Firewall

You can use NetBackup Advanced Reporter in environments that implement firewall protection. However, a firewall may affect system communications between NetBackup and NBAR. There are special requirements for port configuration, when a firewall is present.

NetBackup Port Configuration

NetBackup communicates between computers by using a combination of registered and dynamically allocated ports. Registered ports are registered with the Internet Assigned Numbers Authority (IANA), and are permanently assigned to specific services. For

example, NBAR's database (TCP port) is 3306. Dynamically-allocated ports are assigned as needed from a range specified as part of the NetBackup configuration and either chosen at random, or chosen from the first port number available from the top of the specified range. Dynamically-allocated ports can be reserved or non-reserved. Reserved, or privileged, ports are those less than 1024. Non-reserved, or non-privileged ports are those 1024 or greater.

NBAR Port Configuration

NetBackup Advanced Reporter assigns the following static ports:

- ◆ HTTP or web server default port is 8885 on UNIX systems. Windows systems running version 5.0 and later use port 8885.
- ◆ Database port default is 3306 registered to MySQL with Internet Assigned Numbers Authority

These are static port addresses, which are assigned by default at the time of installation.

These ports are specified in the `nbar.conf` file, and other configuration files.

If you have configured NBAR with GDM, you will also need the MySQL port number for the GDM server.

Communication between NetBackup and NBAR

For NetBackup 5.1 and NBAR 5.1 to communicate, a port must be available for `bprd`. If `vnetd` is configured, all NetBackup traffic will be routed over the `vnetd` configured port.

Configured ports

`bprd` or `vnetd` must be configured.

▼ To check the port number for the database

Change to the directory where NBAR is installed. From the `webapps\nbar\WEB-INF\` directory, open the `web.xml` file. Look for:

```
<param-name>dbPort</param-name>
<param-value>3306</param-value>
```

Allow Non-reserved Ports

If the GDM master server and the managed server are on opposite sides of a firewall, make sure that the **Allow Non-reserved Ports** check box is selected on the **Universal Settings** tab in the NetBackup Properties pages. This setting specifies that the NetBackup



client service (bpcd) can accept remote connections from non privileged ports (port numbers 1024 or greater). Additionally, on each server, select the **Use Non-Reserved Ports** checkbox on the **Firewall** tab.

For more information, please refer to the *NetBackup System Administrator's Guide*.

If NetBackup Uses vnetd (VERITAS Network Daemon Service)

vnetd is assigned port 13724 and replaces traditional call-back by providing an actively-listening port. This configuration means that rather than needing a range of ports open to receive communication, which creates a more complex, difficult to manage firewall, vnetd is always available to receive communications. See the *NetBackup System Administrator's Guide* for more information. With NBAR, vnetd is used in place of bprd (and bpcd).

Firewall Scenarios

The scenarios below illustrate several common firewall configurations. How NetBackup and NBAR need to be configured depends both on where the firewall or firewalls are located.

Standalone NBAR Configurations

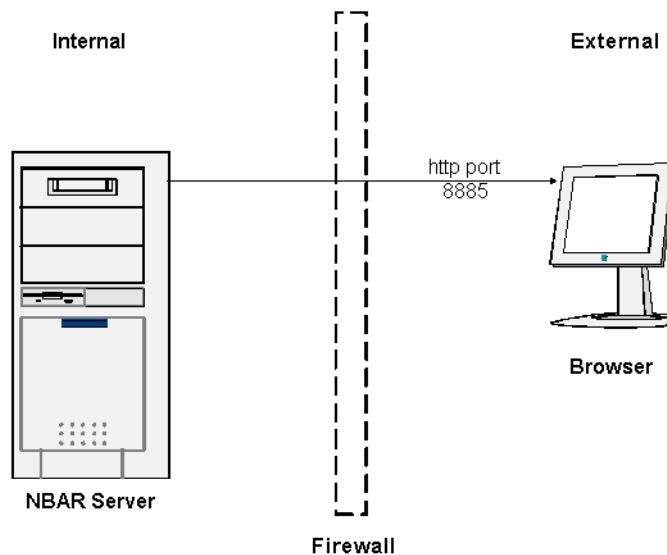
For Standalone NBAR, the only situation in which the firewall will affect the configuration is if you are trying to display the NBAR GUI through a browser on one side of a firewall and NBAR is installed on a system on the other side of the firewall.

In this environment, ensure that:

- ◆ The database port (default = 3306) must be configured. It must be the same on both the NBAR server and the server with the browser you are using.

Standalone NBAR

Standalone NBAR 4.5 FP3 and later

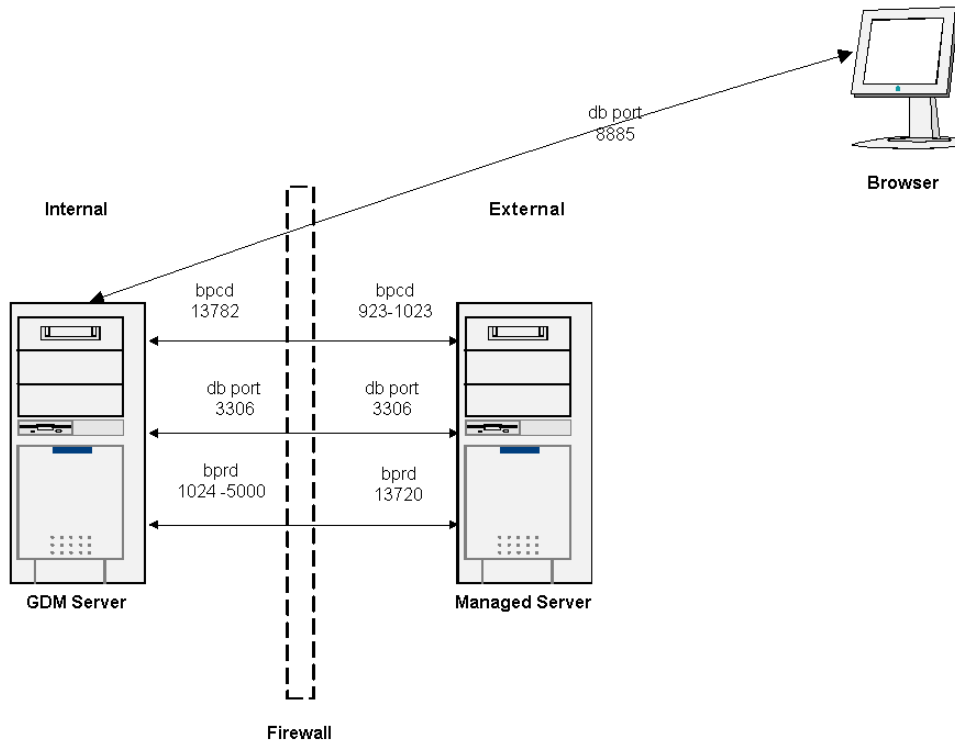


NBAR with GDM Configurations

There are several firewall configurations that require attention to port settings.

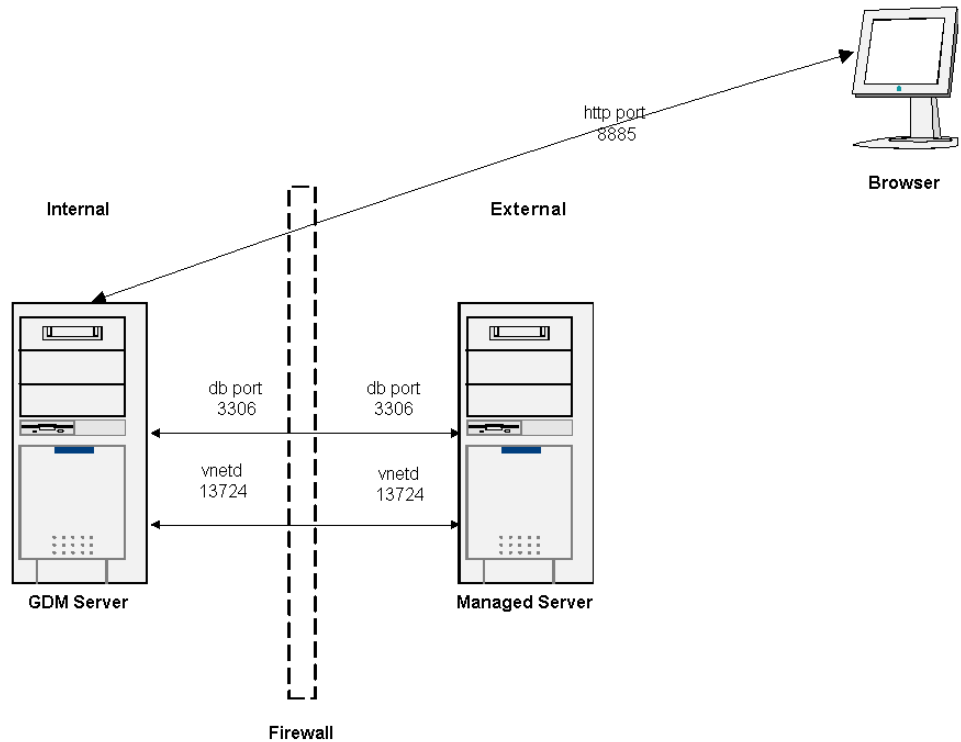
- ◆ Single firewall environment: either the GDM server or the managed server are inside a firewall.

NBAR in a single firewall environment



- ◆ In dual firewall environments the GDM server and the managed server are each behind a separate firewall. Port configuration remains the same.

NBAR using VNETD



Note Both the GDM server and the managed server must have NetBackup 4.5 or greater installed for vnetd to work.





Installing NetBackup Advanced Reporter

2

This chapter explains how to install NetBackup Advanced Reporter (NBAR) 5.1 on a NetBackup Master server and how to access it from a supported web browser.

You will find separate instructions for UNIX and Windows installations. Each set of instructions contains information for environments with a single NBAR server and for GDM environments (more than one NBAR server). Each set of instructions also includes instructions on installing in a clustered environment.

This chapter describes how to upgrade from a previous version of NBAR, how to uninstall NBAR for each type of system, and how to access NBAR through your browser.

Supported Platforms

There are two parts to platform support: the host operating systems and versions of NetBackup that NBAR runs on, and the supported browsers used to view the web console.

For more information on supported platforms, refer to the Product Dependencies section of the *NetBackup Release Notes*.

Platform Requirements

- ◆ NBAR 5.1 supports NetBackup 5.1.
 - ◆ NBAR supports VERITAS NetBackup Enterprise Server and VERITAS NetBackup Server.



Supported Server Platforms

NetBackup Advanced Reporter supports the following operating systems

Operating System	Supported Versions	Notes
AIX	AIX 5.1 (Power PC -- 32 and 64 bit) AIX 5.2 (Power PC -- 32 and 64 bit)	
HP-UX	HP-UX 11.0 HP-UX 11i	Note Please refer to the <i>NetBackup Release Notes</i> for patch dependencies.
Solaris	Solaris 7 Solaris 8 Solaris 9	Note These operating systems are supported on Sun/SPARC systems only.
Windows	Windows NT 4.0 Server with Service Pack 6A or later Windows 2000 Server with Service Pack 3 or later Windows Server 2003	



Supported Cluster Solutions

NBAR supports the following clustering solutions on VERITAS NetBackup Enterprise Server.

NBAR does not support upgrading to a clustered configuration from a standalone NBAR configuration. Additionally, you can only upgrade cluster configurations which were supported by NBAR 5.0

Cluster Solution	Operating System	Supported Configurations
VERITAS Cluster Server (VCS)	Solaris	NBAR 5.1, NBAR 5.0 upgrade.
	HP-UX	NBAR 5.1, NBAR 5.0 upgrade.
	AIX	NBAR 5.1, NBAR 5.0 upgrade.
	Microsoft Windows 2000 and Microsoft Windows Server 2003	NBAR 5.1
Sun Cluster	Solaris	NBAR 5.1, NBAR 5.0 upgrade.
Microsoft Cluster Server (MSCS)	Microsoft Windows NT, Microsoft Windows 2000, and Microsoft Windows Server 2003.	NBAR 5.1, NBAR 5.0 upgrade.

See the *NetBackup High Availability Guide* for more information about supported clusters.



Supported Client Platforms

NetBackup Advanced Reporter supports the following operating systems and browsers marked with an X:

Operating System	Netscape 4.7x	Netscape 6.1x	Microsoft Internet Explorer 5.5	Microsoft Internet Explorer 6.0
AIX 5.1 (Power PC - 32 and 64 bit)	X	X		
AIX 5.2 (Power PC - 32 and 64 bit)	X	X		
Solaris 7 on SPARC stations	X	X		
Solaris 8 on SPARC stations	X	X		
Solaris 9 on SPARC stations		X		
HP-UX 11.0	X	X		
HP-UX 11i	X	X		
Windows NT 4.0 Workstation	X	X	X	X
Windows NT 4.0 Server	X	X	X	X
Windows 2000 Professional	X	X	X	X
Windows 2000 Server	X	X	X	X
Windows 2000 Advanced Server	X	X	X	X
Windows 2000 DataCenter	X	X	X	X
Windows XP	X	X		X
Windows Server 2003	X	X		X

◆ NBAR requires an English language browser.



Calculating Installation Disk Space Requirements

There are two parts to calculating the amount of disk space you will need. First, you need sufficient disk space to install the software and second, you need enough space to allow NBAR's database to grow.

Disk Space

To install the program, the amount of space you need varies depending on the operating system. Use these figures only as a guide.

- ◆ On Windows systems, you need at least 70 megabytes free to install the product in the install directory on a server.
- ◆ On UNIX systems, you need about 65 megabytes free to install the product in the install directory on a server.

Database Space

When you determine the space requirements for your NetBackup Advanced Reporter installation, please use the following recommendations.

For a Standalone Installation

Plan for 905 bytes of data per day for each client, and add an additional 33 kilobytes of disk space per day for logging at the lowest logging level.

$$\begin{aligned} &(\text{number of clients}) \times (\text{number of days of data}) \times 905 \text{ bytes} \\ &+ \\ &(\text{number of days of data}) \times 33,000 \end{aligned}$$

This figure is approximate and can be affected by the number of jobs per client, the length of host names, and the number of errors NetBackup encounters.

Note Use of disk-based storage units with a disk path of greater than six characters will increase the required storage space by the number of characters greater than six multiplied by the number of jobs multiplied by the number of days of data.

$$(\text{number of characters} > 6) \times (\text{number of jobs}) \times (\text{number of days of data})$$



For a GDM Installation

- ◆ For each managed server in a GDM environment, plan for growth of approximately 350 bytes per day.
- ◆ For the GDM server, plan for growth of approximately 450 bytes per day, per managed server.

Note that these suggestions are based on averages. Your system may produce more or less data per day, depending on how often data is gathered, the number of characters in your host names, or domain names, etc.

Database Conversion

If you are upgrading your NBAR installation, you will need enough space to perform a database conversion.

- ◆ First, you need enough space to save the old database. Plan on space the size of the old database plus ten percent.
- ◆ Second, for temporary space you will need approximately the same amount of disk space as needed for the old database.
- ◆ Third, you need space for the new database. Plan on roughly the same amount of space as the old database required.

Database files are located in the following directories:

On UNIX systems: `<install_path>/var/nbar`

On Windows systems: `<install_path>\data\nbar`

Data Collection for NetBackup before NBAR Is Installed

NetBackup Advanced Reporter will load all available NetBackup data. NetBackup retains data based on several settings including the retention of the backup image, the `KEEP_JOBS_HOURS` and `KEEP_JOBS_SUCCESSFUL_HOURS` settings, and other NetBackup configuration options.

If NetBackup has been running for some time on the date NBAR is installed, NBAR may not be able to gather all the data for accurate reporting. For instance, a system may have had a backup with an infinite retention level, but it was completed 60 days ago and the job information is gone. In this case we could gather the image data, but would have no information regarding the NetBackup job that created the image. Another example of this problem would be if a job was completed, and the image is still valid but the policy had been deleted. NBAR has no way to gather policy information from a past configuration. In this case it would be impossible to associate the job with a particular policy.



In order get the most accurate data, we advocate installing NBAR and NetBackup at the same time. This is a best practice. If this practice is not followed, be aware that data on NBAR reports that precedes initial NetBackup Advanced Reporter installation must be interpreted carefully.

We expect data going forward in time from the point of installation to be free of the kinds of accuracy issues explained above.

License Keys

We assume you have a valid license key for NetBackup. In addition, you must have a valid license key for NBAR. If you are planning to install NBAR in a GDM environment, you must have valid GDM license keys for the GDM server and each managed server. In a clustered environment, each node must have a valid license. For more information about what constitutes a valid key, consult your VERITAS NetBackup documentation.

Finding License Key Information on Windows Systems

On Windows systems, make sure a valid license key for NetBackup Advanced Reporter has been registered. From the NetBackup Administration Console, select the **Help** menu. From the **Help** menu, click **License Keys**. The **License Keys** screen displays current license information and the evaluation period if an evaluation license is installed.

Finding License Key Information on UNIX Systems

On UNIX systems, make sure a valid license key for NetBackup Advanced Reporter has been registered.

Use the command:

```
<install_path>/netbackup/bin/admincmd/get_license_key
```

to list and add keys.



Planning for a GDM Configuration

If you are planning to run NetBackup Advanced Reporter in a GDM environment, we suggest you take the following steps:

- ◆ List all NetBackup Master servers that are part of the GDM domain.
- ◆ List the NetBackup Master server that functions as the GDM server (previously known as the Master of Masters)
- ◆ Each of these machines must:
 - ◆ Be running NetBackup 5.1
 - ◆ Have NBAR 5.1 installed
 - ◆ Have NetBackup, NBAR, and GDM licenses

Planning for a Clustered Configuration

If you are planning to run NetBackup Advanced Reporter in a clustered environment, we suggest you take the following steps:

- ◆ List all NetBackup Master servers that are part of the cluster.
- ◆ Note which server is the active node.
- ◆ Each of these machines must:
 - ◆ Be running NetBackup Enterprise Server 5.1
 - ◆ Have NBAR 5.1 installed on each inactive node first, then on the active node.
 - ◆ Have valid NetBackup and NetBackup Advanced Reporter licenses



Installation on UNIX Systems

This section contains detailed instructions for installing NBAR on a Solaris, HP-UX, or AIX server.

Release Materials

The NBAR installation contains the following:

- ◆ An install script,
- ◆ The files necessary to install this application,
- ◆ A copy of this guide in PDF format.

Installation Requirements

- ◆ You must be a root or super user.
- ◆ You must have NetBackup 5.1 installed on the master server.
- ◆ In order for NBAR to report accurate and complete media information, there must only be one volume database and it must reside on the master server.
- ◆ You must be installing on a Solaris machine running version 7, 8, or 9, an HP-UX machine running 11.0 or 11i, or an IBM RS6000 machine running AIX 5.1, or 5.2.
- ◆ You must have a valid evaluation or permanent NBAR license key.
- ◆ If you are installing in a GDM environment, you must have valid GDM license keys for the GDM server and each managed server.
- ◆ If you plan to set up NBAR in a GDM environment, you must configure the GDM server machine first. The managed servers must be able to identify the GDM server in order to join the GDM domain.
- ◆ The installation directory must have sufficient space for the NBAR installation.
- ◆ The NetBackup and the cluster frameworks must be installed, configured, and started before installing NBAR in a clustered environment. Do not change the NBAR services to affect the NetBackup group in your cluster solution software.

Notes about Installation

The default installation directory is `/opt/VRTSnbar0` for Solaris systems, and `/usr/opensv/nbar` for HP-UX and AIX systems.



In general, it is not a good idea to install into the partitions on which the /tmp or / (root) directories reside.

NBAR runs under its own user name and user group. The defaults are nbar and vrts.

The database server requires a TCP port. The default port is 3306. The default port number is registered to MySQL with the Internet Assigned Numbers Authority (<http://iana.org>). We suggest you use the default port unless it is already in use.

The web server also requires a TCP port. The default port is 8885. We suggest you use the default port unless it is already in use.

We strongly suggest you seed the database during the installation procedure. The database then will be populated with all available NetBackup data.

Note The initial seeding may take a significant amount of time if you have a large number of clients under NetBackup control. You can choose not to seed the database at install time.

NBAR requires that its database is updated at least once a day. This is achieved through a loader script, `arloader.sh`. By default, the installation program configures the loader to run at 7:00 A.M.

For GDM Environments

The same installation script is used for GDM installations and non-GDM installations. Refer to the sections below for instructions on how to handle this part of the installation.

Allowing NBAR Access to GDM Data

Your NetBackup GDM configuration must be up and running for NBAR to access information from the managed servers. This means the GDM server must 'know' about all the managed servers. Follow the instructions below to add this information.

For more information about NetBackup GDM configuration, refer to the *NetBackup System Administrator's Guide, volume I* and the *Global Data Manager System Administrator's Guide*.

▼ To configure UNIX servers:

1. On each UNIX Netbackup master server, add a MASTER_OF_MASTERS entry and a SERVER entry for the GDM server to the `bp.conf` file.
2. In the NetBackup `bp.conf` file, add a KNOWN_MASTER entry, where KNOWN_MASTER = `<name_of_managed_server>` for each managed server.

For a GDM server called owl, and a managed server called piglet, your `bp.conf` entries would look like this:

On each master server:

```
MASTER_OF_MASTERS = owl  
SERVER = owl
```

On each GDM server:

```
KNOWN_MASTER = piglet  
MASTER_OF_MASTERS = owl  
SERVER = owl
```

3. On a master server, stop and restart the NetBackup `bpdbm` daemon after adding the `bp.conf` entries.

For Clustered Environments Only

Note NBAR must be installed on each inactive node before it is installed on the active node.

- ◆ The UNIX installation program asks for the host name of the server. In a clustered environment, enter the virtual cluster server name. (It will be the default server name.) All nodes in the cluster must have the same virtual cluster server name.
- ◆ NBAR must be installed on the active node in the NetBackup cluster, and on each inactive node in the cluster as well. If NBAR is not installed on an inactive node, it cannot be failed over to that node when NetBackup fails over.
- ◆ If the machine on which you are installing is the active node, the installation will ask if you want to seed the database, and (if appropriate) will prompt for GDM configuration information. If the machine on which you are installing NBAR is an inactive node, the installation will finish without asking about seeding the database or about GDM configuration.
- ◆ NBAR does not cause failover. If there is a problem with the NBAR application, a failover of NetBackup will not be triggered. However, if NetBackup fails over, NBAR will fail over as well. Do not change the NBAR services to affect the NetBackup group.
- ◆ In your cluster solution software, do not change the NBAR services to affect the NetBackup group.
- ◆ For more information about clustering, please refer to the *NetBackup High Availability Guide*, and the cluster server manuals for your clustered environment.



Installation Procedure

▼ **To install NBAR on a UNIX server:**

1. Log in as the root user on the master server.

If you are already logged in, but are not the root user, execute the following command:

```
su - root
```

Note If you are installing in a clustered environment, you must freeze the active node so that migrations will not occur during installation.

2. Make sure a valid license key for NetBackup Advanced Reporter has been registered.

Use the command:

```
<install_path>/netbackup/bin/admincmd/get_license_key
```

to list and add keys.

3. Insert the CD-ROM containing the Advanced Reporter software into the drive.

4. Change your working directory to the CD-ROM directory:

```
cd /<cd_rom_directory>
```

where *<cd_rom_directory>* is the path to the directory where you can access the CD-ROM. On some platforms, you may need to mount this directory.

5. To install NetBackup Advanced Reporter, execute the following command:

```
./install
```

Because other NetBackup products are included on the CD-ROM, a menu appears.

6. Select **NetBackup Add-On Product Software**.

- a. Select the **NetBackup Advanced Reporter** option.

- b. Enter **q** to quit the menu.



c. When you are asked if the list is correct, type **y**.

7. Follow the prompts in the install script to complete the installation.

Note If you are in a clustered environment and you are installing on an inactive node in the cluster, you will not be prompted for information about seeding the database. If you are installing on an inactive node, the daemons will not be started as part of the installation.

8. You will be asked if you want to change the default configuration for GDM.

Note If you are in a clustered environment and you are installing on an inactive node in the cluster, you will not be prompted for information about the GDM configuration.

- ◆ If you are not installing in a GDM environment, accept the defaults and choose option 3. This option tells the install script that this server is not configured for GDM.

- ◆ If you are installing in a GDM environment, answer yes and follow the instructions.
 - ◆ If the machine on which you are installing will be the GDM server, choose option 1.

This means that this machine will be the master of masters. A GDM license is required on this machine, and a `KNOWN_MASTER` entry is required in this server's `bp.conf` file for each server that is part of this server's GDM domain.

For more information on GDM configuration, refer the *NetBackup System Administrator's Guide, volume I* or the *Global Data Manager System Administrator's Guide*.
 - ◆ If the machine on which you are installing will be a GDM managed server, choose option 2.

This means that this machine will be part of a GDM domain. You must know the name of the GDM server and the number of the TCP port for the NBAR database to the GDM server.



As the script runs, it produces progress messages. When the installation is complete, the script will provide a summary of the installation.

Note You must install on all nodes before you unfreeze the active node.

To run the NBAR web console from your web browser, use the following URL:

```
http://<host>.<domain>:<port>/nbar
```

Note You will not be able to run the console if you have just installed on an inactive node. NBAR services will not be up and running until you install on the active node.

Additional Step Required for AIX Systems

The data for NBAR's Master Server System Performance report is collected by the NBAR process armonitor. armonitor requires vmstat, which may not be installed by default with AIX 5.1. To resolve this issue, you must install vmstat, which is part of the bos.acct fileset on the AIX Base Operating System CD-ROM.

After you have installed vmstat, run `/usr/openv/nbar/bin/nbar start` to start armonitor.

Upgrading to NetBackup Advanced Reporter 5.1 on UNIX

Due to changes in NBAR's database format with release 5.0, when you upgrade NBAR from a previous release, the installation performs a database conversion. During installation, the amount of disk space required to accomplish this task will be displayed. You will be asked for the names of two temporary directories that the database conversion utility will use. You can choose any directories, as long as they have at least as much space as the installation script indicated was required.

Note We strongly suggest you use fully-qualified server names in the NetBackup policies. Failure to do so may result in NBAR reports containing duplicate entries -- one entry with a short name, and one entry with a long name. Additionally, some reports may display some data under one name, and some under the other name.

Caution To preserve historical NBAR data, you must install to the directory where the previous version of NBAR was installed.

When NBAR is uninstalled, the NBAR historical data in the database files will be collected and preserved in the file `<tmpdir>/VERITASnbar-db.tar.z`. During the installation process, the data in this file is provided to the new database. When you are certain that your new NBAR installation is running correctly, you can delete this file.

To install NBAR 5.1, you must first uninstall NBAR 4.5 or NBAR 4.5_3_F.

Note NBAR 5.1 works with clustered systems, but versions of NBAR prior to 5.0 do not. If you want to install NBAR on a clustered system, it must be an initial install.

Running the Web Console

Now that you've completed the installation process, you can launch NBAR's web console.

- ◆ To access NBAR 5.1 use the following URL from your web browser:

`http://<host>.<domain>:<port>/nbar`

Note The default port is 8885.

Uninstalling NetBackup Advanced Reporter on UNIX

▼ To uninstall NetBackup Advanced Reporter

1. Log in as the root user on the master server.

If you are already logged in, but are not the root user, execute the following command:

su - root

Note If you are uninstalling from a clustered system, you must freeze the node so that migrations will not occur before executing the uninstall command.

2. Execute the uninstall command or script:

- ◆ On a Solaris server, type:

pkgrm VRTSnbaro

- ◆ On an HP-UX or AIX server, type:

<install_path>/netbackup/bin/install_nbar -deinstall

where *<install_path>* is the directory in which NetBackup resides.

3. When the uninstall command or script finishes, it will mention several temporary files that may have been created.

If this is a complete uninstall, rather than a step in the upgrade process, you may delete the following files.



If you are upgrading or reinstalling, leave these files until after the installation (see “Installation Procedure”, above) has completed. These are the files you may find:

`<tmpdir>/VERITASnbar-db.tar.Z`

`<tmpdir>/VERITASnbar-env.sh`

`<tmpdir>/VERITASnbar-VRTSnbaro-crontab.<PID>.r` (optionally created)

`<tmpdir>/VERITASnbar-VRTSnbaro-inittab.<PID>.r` (optionally created)

where `<tmpdir>` is the value of the `TMPDIR` environment variable at the time the install script is executed, and `<PID>` is the value of the process ID of the script.

4. (This step is optional and is only applicable in clustered environments.) Verify that the NBAR link and directory lines have been removed from the RSP file in `/usr/opensv/netbackup/bin/cluster/VCS`.

Note If you are uninstalling in a clustered environment, remember to unfreeze the node after uninstalling.

After NBAR is uninstalled, the user name and group specified during the installation process remain on your system. There may be other files or applications owned by this user.

Installation on Windows Systems

This section describes how to install NBAR on a Windows system. It also describes how to upgrade or uninstall the product.

Release Materials

The NBAR installation contains the following:

- ◆ A setup program,
- ◆ The files necessary to install this application,
- ◆ A copy of this guide in PDF format.

Installation Requirements

- ◆ You must have administrator rights on the local machine.
- ◆ You must be running Windows NT 4.0, Service Pack 6A or later, Windows 2000, Service Pack 3 or later, Windows XP, Service Pack 2 or later, or Windows Server 2003.
- ◆ You must have NetBackup 5.1 installed as a master server on the machine where you want to install NBAR.
- ◆ In order for NBAR to report accurate and complete media information, there must only be one volume database and it must reside on the master server.
- ◆ You need at least 70 megabytes free to install the product in the install directory on a server.
- ◆ You must have a valid evaluation or permanent NBAR license key.
- ◆ If you are installing NBAR in a GDM environment, you must have a valid GDM license key.
- ◆ You must have sufficient room on the system for the NBAR application and for the database.
- ◆ If you want to use Microsoft Internet Explorer to access NBAR, you must have it installed and configured on your system before you install NBAR.

Notes about Installation

- ◆ You can install NBAR on any server which has NetBackup 5.1 installed as a master server. The default installation directory is `c:\Program Files\VERITAS. A NetBackup Advanced Reporter` directory will be created in the directory specified.



- ◆ You have an opportunity to correct information about the server where NBAR will be installed. You must enter the name of the server (host name), and the complete domain name (DNS suffix).
- ◆ The database server requires a TCP port. The default port is 3306. The default port number is registered to MySQL with the Internet Assigned Numbers Authority (<http://iana.org>). We suggest you use the default port unless it is already in use.
- ◆ The web server also requires a TCP port. The default port is 8885. We suggest you use the default port unless it is already in use.
- ◆ We strongly suggest you populate the database during the installation procedure. The database will be seeded with all available NetBackup data.

Note The initial seeding may take a significant amount of time if you have a large number of clients under NetBackup control. You can choose not to seed the database at install time.

- ◆ NBAR requires that its database is updated at least once a day. This is achieved through a loader script, `arloader.bat`. By default, the installation program configures the loader to run at 7:00 a.m.
- ◆ With Windows Server 2003 security, you may need to add the URL NBAR uses to access the web console to the local intranet zone.

For GDM Environments Only

The installation program will also contain a GDM Configuration Settings screen.

- ◆ If you choose not to configure this NBAR server for GDM, nothing further is required.
- ◆ If you choose to configure this server as the GDM server, a GDM license is required. In this case, this server will receive reporting information from all NBAR servers in the GDM domain.
- ◆ If you choose to configure this server as an NBAR server that is a member of a GDM domain, a GDM license is required. In this case, reporting information from this server will be sent to a GDM server. You must also provide the fully-qualified name of the GDM server and the MySQL port for the GDM server.

Note The NetBackup GDM server must have a GDM license. However, if you have not already configured your NetBackup GDM domain, you can do so after you have installed NBAR on your GDM machines.

Allowing NBAR Access to GDM Data

Your NetBackup GDM configuration must be up and running for NBAR to access information from the managed servers. For more information about NetBackup GDM configuration, refer to the *NetBackup System Administrator's Guide, Volume I*, and the *Global Data Manager System Administrator's Guide*.

For Clustered Environments Only

Note You must install NBAR on each inactive (passive) node in the cluster before you install on the active node.

The Windows installation program will determine whether or not you are installing on a machine that is part of a NetBackup cluster. NBAR must be installed on *all* inactive nodes in the NetBackup cluster before installing it on the active node. The installation program detects whether the node is active or inactive.

The installation program will display a Cluster Configuration screen that contains the following information:

- ◆ Virtual Server Name: This is the name by which a clustered NetBackup configuration and NBAR can be accessed, regardless of which node is active. It is the virtual name assigned to the IP address used by the active node in the cluster.
- ◆ The location of the NBAR database. This is the path where NBAR keeps the data. Data is generally kept on a shared disk which can be accessed only from the active node. If the machine on which you are installing NBAR is the active node, the database will be initialized in this location. If the machine is an inactive or passive node, this screen will display the location that will contain the database if NetBackup fails over to this machine.

If the machine on which you are installing NBAR is the active node, the installation prompts for database seeding and GDM configuration. If the machine on which you are installing NBAR is an inactive node, the installation will not include these configuration parameters.

Notes about NBAR and Clustering

- ◆ NBAR does not cause failover. NBAR failover is triggered only when NetBackup fails over. A failover will not be triggered if the problem is only with the NBAR application.
- ◆ Do not change the NBAR services to affect the NetBackup group.
- ◆ For Microsoft Cluster Service (MSCS) solutions, use the Cluster Administrator to start and stop services. Do not use **Control Panel > Administrative Tools > Services**.



- ◆ If an active node is restarted after NBAR is installed on an inactive node, and before NBAR is installed on the last and active node, you should carry out the following steps.
 - a. Move the NetBackup group back to the previously active node.
 - b. Reinstall NBAR on the inactive node(s).
 - c. Install NBAR on the active node.

If NBAR is not installed on an inactive node, it cannot be failed over to that node when NetBackup fails over.

- ◆ Before installing, you must freeze the active node so that migrations will not occur during installation of NetBackup Advanced Reporter.
- ◆ After installing, you must unfreeze the active node.
- ◆ For more information about clustering, please refer to the *NetBackup High Availability Guide* and the documentation for your cluster software.

Installation Procedure

This procedure installs NBAR on a Windows server.

▼ To install NBAR on a Windows server:

1. Log in with administrative rights.
2. Insert the CD-ROM that contains the NetBackup server software.
 - ◆ On systems with AutoPlay enabled for CD-ROM drive, the setup program will start automatically.
 - ◆ On systems that have AutoPlay disabled, run `Launch.exe` from the root directory.
3. On the NetBackup Install browser, click the **Additional Products** link in the left column. The main window updates and enables you to install additional products or view documentation.
4. Click the **Additional Products Installations** link. The browser refreshes and displays the current list of products available for installation.
5. Click the **Advanced Reporter** link.
6. The first screen you will see is the standard InstallShield Welcome screen. Click **Next** and follow the prompts to complete the installation.

7. The final screen reviews the information you have entered. If you wish to change any of it, click **Back**. Otherwise, click **Next** to begin copying the NBAR files.
8. When the installation is complete, a log file displays the output from `arconfig`. If you want to change any of the settings, you must run `arconfig` manually.

For more information on `arconfig`, please refer “Syntax for the Configuration Utility” on page 54.

Running the Web Console

Now that you’ve completed the installation process, you can launch NBAR’s web console.

- ◆ To access NBAR 5.1 use the following URL from your web browser:

`http://<host>.<domain>:<port>/nbar`

Note The default port is 8885.



Upgrading to NetBackup Advanced Reporter 5.1 on Windows

The installation process will detect the existin NBAR installation and ask you if you want to upgrade (which will preserve the database information) or perform a clean install (which will delete database information). Both choices will delete the previous installation. Due to changes in NBAR's database format with release 5.0, when you upgrade NBAR from 4.5 or 4.5_3_F, the installation performs a database conversion.

Note We strongly suggest you use fully-qualified server names in the NetBackup policies. Failure to do so may result in NBAR reports containing duplicate entries -- one entry with a short name, and one entry with a long name. Additionally, some reports may display some data under one name, and some under the other name.

Note If you want to reinstall version 5.1, you must first uninstall it using Add/Remove Programs.

Uninstalling NetBackup Advanced Reporter

- ❖ Use the Add/Remove Programs utility in Windows to uninstall NBAR.

Note You may need to remove any VERITAS NetBackup Advanced Reporter Maintenance Packs listed in Add/Remove Programs first.

Uninstalling NBAR in a Clustered Environment on Windows

- ❖ Uninstall from the active node first, then from each inactive node.

The NBAR web console is a lightweight, scalable client which allows you to view reports on NetBackup activities from a web browser. This chapter provides an overview of the web console, including the following topics:

- ◆ Exploring the Web Console
- ◆ How Do I Navigate the NBAR Reports?
- ◆ How Do I Change the Reference Date?
- ◆ Accessing Properties Pages
- ◆ NetBackup Troubleshooting Guide

Exploring the Web Console

We assume that any user running NBAR is familiar with the Internet and using a web browser.

▼ To access the NetBackup Advanced Reporter web console

1. Start the web browser on your computer.
2. Access the NBAR program by entering the Uniform Resource Locator (URL) in the **Location** or **Address** box and pressing [Return]. For example,

```
http://<servername>.<yourdomain>:<port>/nbar
```

On Windows systems, you can also choose **Start > VERITAS NetBackup > Advanced Reporter**.

You will briefly see an introductory splash screen with a **Start** button. You can click **Start** to start the application, or wait a few seconds and it will start automatically.



The NetBackup Advanced Reporter user interface is an HTML-based interface that allows users to select and view a variety of reports. The NBAR web console is composed of three areas: a top portion or header that controls display details applicable across all the reports, a left pane that holds the report tree, and a right pane that displays the currently selected report.

The header contains a dropdown box from which you can select a server if you are in a GDM environment. If you are not in a GDM environment, only the NBAR server will be available. Then you can choose one of three categories of reports by clicking the appropriate tab: **Custom Reports**, **Regular Reports**, or **GDM Reports** (if you have a GDM license). The reports available in the report tree will change depending on which group of reports you select.

How to Choose a Master Server in a GDM Environment

If your NetBackup environment is configured for GDM, it will probably contain more than one master server. You can choose to display NBAR reports for any server. Select the server you want to display from the dropdown list. Click **Go** to display reports for the selected server. GDM reports will only be accessible from the GDM server, however, not from the managed servers.

Server Selection



What the Header Buttons Do

The header area contains **Reference Date**, **Timeframe**, **Troubleshooter**, **Help**, and **About** buttons. The **Reference Date** and **Timeframe** buttons provide access to dialogs which allow you to determine the start date for all reports and the length of the reporting period. (See the *How Do I Change the Reference Date?* and *How Do I Adjust the Reporting Timeframe?* topics.) The **Troubleshooter** button allows you to access a version of the NetBackup Troubleshooting Wizard (see the *NetBackup Troubleshooting Guide* topic), The **Help** button allows you to access an HTML version of the *NetBackup Advanced Reporter System Administrator's Guide*, and the **About** button provides version and license information.

Header Buttons



The NBAR Report Tree

The list of reports appears in a tree in the left pane. To generate a report from the report tree, position the cursor on the desired report and click the left mouse button. NBAR generates and displays the selected report in the right pane using the report's default timeframe.

Report Tabs

Tabs labeled **Custom Reports**, **Regular Reports**, and **GDM Reports** appear along the top edge of the right pane. The content of the report tree in the left pane varies, depending on which tab is selected.

Report Tabs



- ◆ The **Custom Reports** tab displays any user-defined reports that have been saved. For more information on custom reports, refer to “Creating Custom Reports” in the Administrative Tasks chapter.
- ◆ The **Regular Reports** tab displays the standard NBAR reports. The reports are organized into five categories, each represented by a folder. These are:
 - ◆ **Management** reports are further grouped into lower level folders (**Full Backups**, **Incremental Backups**, **Restore Jobs** and **Catalog Usage** as well as two stand-alone **Error Log** reports)
 - ◆ **Administrative** reports provide details on backup policies, jobs by site, and error occurrence.
 - ◆ **Media** reports provide information on the status of backup media.
 - ◆ **Performance** reports provide information on active policies, drive throughput, and the length of backup windows.
 - ◆ The **End User** reports contains the backup history for a particular client.
- ◆ The **GDM Reports** tab displays the five Global Data Manager (GDM) reports, if this is a GDM system. The GDM summary reports consolidate information about all of the NBAR servers.



Report Display Area

The right pane is where NBAR displays all reports. As NBAR generates each report, the new report appears on top of the previous report. All reports generated during a session remain available in the right pane by clicking the back arrow in your browser. Once you have generated a report it remains static. If you want to see updated information, you must regenerate the report.

How Do I Navigate the NBAR Reports?

NBAR reports have a number of common features that enable you to get more information about some aspect of a report. They include:

- ◆ [Hover labels \(How Do I Access Hover Labels?\)](#)
- ◆ [Report Links \(How Do I Follow Report Links?\)](#)
- ◆ [Selection Criteria \(How Do I Select Report Criteria?\)](#)
- ◆ [Report Icons \(What Do the Icons Next to Entries on Some Reports Mean?\)](#)
- ◆ [Blue Blocks \(What Do Blue Blocks Near Entries on Some Reports Mean?\)](#)
- ◆ [Reference Date \(How Do I Change the Reference Date?\)](#)
- ◆ [Timeframe \(How Do I Adjust the Reporting Timeframe?\)](#)
- ◆ [View Properties Dialogs \(What Information Do I Get from the Job Properties Page?\)](#)

How Do I Access Hover Labels?

If you allow the cursor to linger over a data point, bar, or column heading on one of the NBAR reports, a hover label will display, containing additional data about the data point or column heading.

How Do I Follow Report Links?

A report link may be accessed through a bar on a chart, a field entry in a report, or the title of a report section. A link provides access to a related report. The related report provides more detail for the selected aspect of the report, for example, Number of Jobs, Number of Media Servers, or Policy Name.

For example, the *Full Job Completion Status* report provides details on all full backup jobs run in the last 28 day period. Clicking on the bar that represents one day will link to the job details report for the selected day.

If you link to, or “drill down” to a report from another report, the report that you have linked to will display either the same timeframe as the initial report, or the timeframe that applies to the part of the report from which you drilled down, for example, the time span covered by a particular bar on a bar chart.

Note Certain reports are accessible only through report links. These reports do not appear in the report tree in the left pane. The chapter on End User and Miscellaneous reports describes the content of these linked reports.

How Do I Select Report Criteria?

The Report Criteria Selection box appears as part of some reports. This box gives you the opportunity to further narrow the focus of the report, by specifying a particular criteria, such as a particular media server, date span, or backup policy.

Report Criteria Selection



In this example, part of the *Drive Throughput* report, you select the name of the media server in the **Select media server** scroll box. Once you have selected a particular media server, click the **Run** button to display the report.

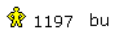
What Do the Icons Next to Entries on Some Reports Mean?

Some reports provide a snapshot of success or failure in the form of an icon next to each entry.

Status Icons



A blue icon indicates success.



A yellow icon indicates partial success.



A red icon indicates failure.



An icon with the word MULTI next to it indicates a multistreamed job.



What Do Blue Blocks Near Entries on Some Reports Mean?






The blue blocks are called tooltip markers, and they appear next to entries from which you can drill down for more information. The tooltip marker indicates that you can use the keyboard to access the drilldown information.

▼ To access drilldown information using keystrokes

1. Use the **Tab** key until the focus of the cursor is on the tooltip.
2. Press **Shift + ?** to display the text of the tooltip in the upper lefthand corner of the report. Press **Shift + ?** again to hide the tooltip.
3. Press **Enter** to display the drilldown information.

In the example below, taken from the *Backup Jobs List*, the tooltip marker next to the Properties entries brings up the Job Properties page for that job. The tooltip marker next to the Exit Status entry brings up the Troubleshooter for that error code.

Tooltip Markers

Properties	Job ID	Job Type	Client	Media Server	Policy	Schedule	Exit Status
		3549 Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com	Imp_Docs	Incr_hourly	
		3551 Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com	Imp_Docs	Incr_hourly	

What Determines the Timeframe for a Report?

Each report is defined with a default reporting period, or timeframe. For some reports, the default timeframe is 24 hours, or one day, and for others it is 28 or 30 days, depending on the purpose of the report. By default, the day you run the report is considered the last day of the reporting period. For example, if today is October 10, and you are running a report that has a 28 day timeframe, the report will display information from September 13 through October 10.

Some NBAR reports compare data from a current period with the same period a year ago. If NBAR does not have access to the data from a year ago (there is no data for that period in the NetBackup database), NBAR will use the oldest data available to calculate the annual percentage change. However, the calculations for percentage change will use the

given timeframe, whether or not there is data available. This may result in empty entries. Choose your dates carefully when you are comparing trends in system activity across time.

Be aware that a 'day' is defined as a 24-hour chunk of time, but does not necessarily start at midnight. The time field in the Reference Date dialog defines the boundary of an NBAR day. You can adjust the default reporting period by changing the Reference Date or the Timeframe. See sections below for details.

How Do I Change the Reference Date?

This feature changes the reference date for all reports (that have a reporting period longer than one day) for the current NBAR session. The reference date is the last day of the timeframe, or reporting period, for any NBAR report. The default reference date is today's date, that is, the date of the day you are running NBAR reports.

Note The time field in the reference date defines a boundary of an NBAR day. For example, if the reference date is set to Feb 11 2002 11:00 A.M., then the NBAR day will start on Feb 10 2002 11:00 A.M. and will end Feb 11 2002 at 11:00 A.M. NBAR will consider all information falling between Feb 10 at 11:00 A.M. and Feb 11 at 11:00 A.M. Feb 10 data.

Generally, reports reached through drill-down from another report retain the reference date of the first report. However, if you open a new browser window and then bring up the NBAR GUI, the reference dates will not carry over to the new window.

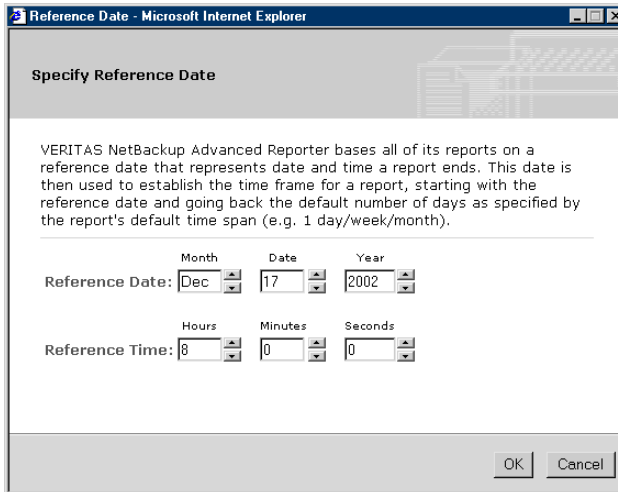
Exceptions to this are reports for which only current data are relevant. For example, if you are using the previous day as a timeframe for the *Global Site Size* report, and you drill-down to the *Active Policy Definitions* report, the date for the *Active Policy Definitions* report will be the date you are running the report. This is because current data is the only data that is relevant when determining which policies are active.



▼ **To change the reference date:**

1. Click **Reference Date** in the header area of the display.

Reference Date dialog



2. Use the **Reference Date** field to select a new date for the last day of the reporting period.
3. Use the **Reference Time** field to choose a time for the reporting period to end.
4. To accept the changes, click **OK**. To cancel the changes, click **Cancel**.

How Do I Adjust the Reporting Timeframe?

The reporting timeframe for each report is displayed in the top left corner of the report. You can change the current report's timeframe at any time by clicking on the **Change Timeframe** icon. The Change Report's Timeframe dialog box appears.

Each report is designed to run using a default timeframe. The default timeframe is based on the information provided in the report, for example, all *Management* and *End User* reports provide details for the last 28 day period starting with the previous day's date, while *Administrative* reports provide details for the previous day only.

NBAR allows users to change the timeframe used to run any of the reports. If you enter a start date/time that is greater than the end date/time, NBAR will swap them for you and display information for the period between the dates.

▼ **To change the report's timeframe:**

1. Click the **Timeframe** icon.

Specify Timeframe dialog

2. Select new date(s) for the report. You can change the start date, the end date, or both. Click the calendar icons next to each field to display navigable monthly calendars. For each date, you can change the month, the day, the year, or the hour. If you only want to look at one day's worth of data, enter the same date in both the **Start Time** and **End Time** fields.

3. Click **OK** to accept the selected dates, or **Cancel** to keep the date/timeframe as is.

NBAR regenerates the currently displayed report using the newly selected timeframe. If you have accessed the current report by following a link from another report, only the current report is generated using the new dates.

If you change the timeframe of a report that has a Selection Criteria bar, the report subtitle will change, but the report will not be regenerated to reflect the new dates until you click the **Run** button again. This is designed to allow you to change the criteria for the report after choosing the timeframe.

Note Neither the Timeframe nor the Reference Date dialogs will allow you to enter a future date or time.



How Does NBAR Count Backup Jobs?

NBAR understands the structure of NetBackup policies and records backup jobs' dates accordingly. When a Backup Window opens (typically backups are run overnight during the week and during the day on weekends), all backup jobs that are performed within that open window (regardless of the date they begin or finish) are recorded to have started on the date the Backup Window opened. For example, if a Backup Window opens at 8 p.m. on April 24th and closes at 6 a.m. on April 25th, all jobs (even those that started at 2 a.m. on April 25th) that ran in this window are dated April 24th. For more details on NetBackup Policies, Schedules and Backup Windows, refer to *NetBackup System Administrator's Guide*.

Each morning, at a time designated by the administrator, NBAR scans the NetBackup logs and extracts specific information to the NBAR database. NBAR follows the same reporting timeframe principles as NetBackup. Backup jobs that ran under a Backup Window that opened on a Wednesday are reported under Wednesday's date even if the job started and finished on Thursday.

NBAR does not record backup information for jobs that were started but not finished when the NetBackup logs are scanned. This backup information will be recorded during the next scan by NBAR (assuming the backup job has been completed).

Restore jobs are reported in NBAR on the actual day they were performed.

Accessing Properties Pages

There are three kinds of properties pages available in NBAR: policy properties, job properties, and multistreaming job properties pages. Reports for which properties pages are relevant contain a Properties column.

Property Icon



Click the property icon in the Property column to access the properties pages.

A invaluable aspect of the properties pages is that they are tied to the timeframe and reference date of the underlying report. That is, they don't show the current state of the jobs or policies, but rather the state of the system's jobs or policies for the timeframe you have selected. If you run the *Job Details by Policy report* for October 10th, you will see how the policy looked on October 10th. If you run the same report for July 10th, you will see the state of the policies in July. This data can be effectively used when you are troubleshooting discrepancies in your backup environment.



What Information Do I Get from the Policy Properties Page?


You can access the Policy Properties page from the *Job Details by Policy*, *Active Backup Policy Definitions*, and the *Backup Job Schedule Forecast* reports. The Policy Properties page contains information about four areas:

- ◆ The Policy Attributes area displays the most pertinent attributes of the policy under analysis. These attributes are assigned through NetBackup.
- ◆ The Schedules area displays information about the schedules for this policy, such as frequency and retention period.
- ◆ The File Paths Backed Up area displays information about the files backed up by this policy. It contains path names or directives that are part of this policy.


Note Some jobs that end with an error may not display pathnames. All this indicates is that the data loader was unable to locate path information for the job because of the way NetBackup stores the information.

- ◆ The Client Details area displays the fully qualified name of the client you are connected to.

Policy Properties

 **Policy Properties - Calendar**


Policy attributes :

 **Calendar**

Policy Type: Standard
 Policy Volume Pool: NetBackup
 Jobs Priority: 0
 Maximum Jobs: Unspecified
 Policy Storage Unit: spark-4mm-robot-tl4-0

Active
 Cross mount points
 Collect true image restore information
 Compression

Schedules :

Name	Type	Retention Period	Frequency	Storage	Volume pool
 Cal	Full	1 week	1 Week(s)		NetBackup

Files paths backed up :

/opt/sfw

Client details :

spark.storagewiz.com


What Information Do I Get from the Job Properties Page?

You can access the Job Properties page from the *Site Details Job List*, *Media Errors*, *Restore Details by Client*, *Client Job History*, or *Job Details for Policy <policy>* reports. The Job Properties page has three areas:


- ◆ The Job execution details area contains basic descriptive information about the job, such as the job type, and the policy that ran the job.
- ◆ The File paths backed up area contains information on the file paths backed up by this job.
- ◆ The Media usage details area contains information about the media used for this job, such as the name of the storage unit, the media server and the image.






Job Properties

 **Job Properties**

Job execution details :

 mars.storagewiz.com


 Job ID: 4600
 Job Type: Backup
Exit status: 246
Total files:
Total KB:
Throughput:

 Backup Policy :

Schedule:
Start time: 2003-06-05 13:24:02
End time: 2003-06-05 13:24:02

File paths :

Media usage details :

 Media server: spark.storagewiz.com
Media ID:
Image:
Retention:
Expires on:
Storage unit:
Drive index:

What Information Do I Get from the Multistreamed Job Properties Page?

You can access the Multistreamed Job Properties page from the *Site Details Job List*, *Job Details for Policy <policy>*, and *Client Job History* reports. The Multistreamed Job Properties page has two areas:


- ◆ The Summary of Job Execution area contains basic descriptive information about the multistreamed job, such as the job group and the exit status of individual job streams.
- ◆ The Details of All Streams area contains detailed information about each data stream, such as duration and throughput.


Multistreamed Job Properties


Multi-Stream Job Properties

Summary of job execution

🚩 Job group 2129

 Backup Policy: test_Solaris_NBAR_Database
 Schedule: ALL_DAY_FULL
 Media server: spark.storagewiz.com
 Storage unit: spark-4mm-robot-t14-0

 Total files: 0
 Total KBytes: 0
 Avg. Throughput: 0 KB/s

 Exit status of streams:
 Successful: 0
 Partial: 0
 Failed: 1
 Total number of streams: 1

Details of all streams

🚩 Job group 2129

JobID	Client	Start time	End time	Duration	Volume	Files	Throughput
🚩 2129	indrayani.storagewiz.com	2003-02-14 00:05:31	2003-02-14 00:05:31	00:00:00			



NetBackup Troubleshooting Guide

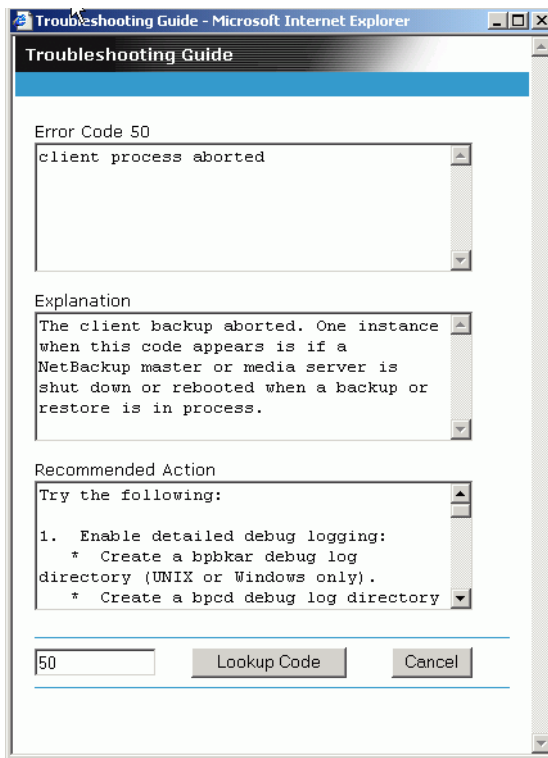
You can access the *NetBackup Troubleshooting Guide* by clicking on the Troubleshooter button in the header bar, or

You can access the *NetBackup Troubleshooting Guide* by clicking on any entry in the following report fields:

- ◆ the **Status** field of the *Error Log Summary* report, the *Error Log Summary by Client* report, the *Consolidated Error Log* report, or the *Media Errors* report,
- ◆ the **NetBackup Error Code** field of the *Summary of Status Codes for (Client)* report,
- ◆ the **Exit Status** field of the *Site Details Job List* report, the *Job Details for NetBackup Policy (Policy name)* report, or the *Client Job History* report.

The *NetBackup Troubleshooting Guide* provides the online error code information, including the name and number of the error and the recommended action. If you enter a **Lookup Code** number in the field to the right, a description of that error will appear.

NetBackup Troubleshooting Guide



This chapter explains the procedures for administrative tasks in NBAR. These tasks include the following topics:

- ◆ What Is the Configuration Utility?
- ◆ Email Functionality in NBAR
- ◆ Creating Custom Reports
- ◆ Printing Reports
- ◆ Backing Up the NBAR Database
- ◆ Using NBAR with NBAC-enabled NetBackup

What Is the Configuration Utility?

The NBAR installation asks you to make some configuration decisions. If you want to change those settings, or configure others that are not addressed in the installation, NBAR provides a command-line based configuration utility, `arconfig` (`arconfig.bat`, or `arconfig.sh`). `arconfig` modifies a configuration file called `nbar.conf`.

The `arconfig` utility performs one task at a time. If you want to schedule the data loader, add a server to the GDM domain, and print out the current configuration, these must be separate procedures. You can also use this utility to report on the current configuration.

In standalone or classic NBAR configurations that only have one NBAR server, the main functions of this utility are to modify the schedule for the data loader and to change configuration settings in the `nbar.conf` file.

In NBAR plus GDM configurations, the main functions of this utility are to modify schedules for the data loader, to change configuration settings in the `nbar.conf` file, and to modify the list of NBAR servers under GDM control.

Note If you have installed NBAR in a cluster environment, and you make changes to the `nbar.conf` file on the active node, you must duplicate these changes in the `nbar.conf` files on the inactive nodes.



In both GDM and non-GDM environments you can set data collection times, set database purge times, and change the default time span for reports. The tables in this section specify the options for each type of server (NBAR master, NBAR managed server, and GDM master), and which ones you can modify.

To Access the Configuration Utility

This is a command line utility. From the command line of the machine on which you want to make the change, navigate to the following directory.

- ❖ On UNIX systems: `<install_directory>/bin/arconfig.sh`
- ❖ On Windows systems: `<install_directory>/bin/arconfig.bat`

For online help with the `arconfig` command, type `-h` or `--help` for a brief usage statement, or `--man` for a complete description of the options.

Syntax for the Configuration Utility

The syntax for the utility is:

On UNIX: `arconfig.sh -option [newdata]`

On Windows: `arconfig.bat -option [newdata]`

where

`-option` is the letter or phrase which specifies the action you want to perform and `newdata` specifies what is acted on, or provides a new value for the specified option.

For example, if you want to join a GDM domain where the GDM server is called mango, from the command line of the NBAR server type the following:

```
arconfig -j mango
```

On UNIX: `arconfig.sh -j mango`

On Windows: `arconfig.bat -j mango`

arconfig Manpage Content

DESCRIPTION

The `arconfig` utility is designed to allow easy configuration of various NetBackup Advanced Reporter parameters. Additionally, you can use the utility to report on the current configuration. This utility can perform one task at a time only. You cannot combine tasks. For example, you cannot schedule the data loader, join a GDM domain, and print out the current system configuration, all in one step.

OPTIONS

The following options report configuration details.

`--print`

Lists all options from `bp.conf` or registry and the `nbar` database.

`-g --list`

Lists all GDM managed servers, (`KNOWN_MASTERS`). This option only works on a GDM server.

`-c --current`

Lists current general configuration including configuration of managed server(s) from the NetBackup Advanced Reporter database if any.

The following parameters will modify the `--print`, `-g`, `-c`, `-a`, `-j` command options.

`-H --host <hostname>`

Hostname refers to the machine you wish to query.

`-P --port <num>`

Sets port for database.

[Note. if you use the single letter it must be capitalized so there will be no confusion with the `--print` option.]

The following parameter will modify the `-g`, `-c`, `-a`, `-j` command options.

`--momport <num>`

The port the GDM server's NetBackup Advanced Reporter database is using.



The following options allow you to change configuration data on your local system. A backup configuration file is created when you do this. The backup file will be named VERITASnbar-nbar.conf.bak for the NetBackup Advanced Reporter configuration file. The backup file will be placed in the /tmp directory (or in %TMPDIR on HP-UX if the environment variable %TMPDIR is set) on UNIX and into the %TMP% dir on Windows 2000/NT. If you are changing the NetBackup configuration on a UNIX NetBackup server, a backup copy of the bp.conf file will be created in /tmp (or in %TMPDIR on HP-UX, if the environment variable %TMPDIR is set). The backup file will be named VERITASnbar-bp.conf.bak.

-b --bpchange

Changes the local bp.conf file or registry entry by adding key/value pairs. Note, on Windows this will overwrite existing entries with the value given as a parameter, it will not append entries. Changing Registry entries can be dangerous, be sure to always back up your Registry before making changes.

Example: \$prog -b SERVER=peach.xyz.com

-n --nbarchange

Changes the local nbar.conf file by adding key/value pairs.

Example: \$prog -n growtrend1=5 -n volumeptg=10

The following options are for configuring NetBackup Advanced Reporter in a Global Data Manager (GDM) domain. From the GDM server, you can add NetBackup Advanced Reporter managed servers to your configuration, one server at a time.

-a --add=<server>

Adds managed GDM server [optional -s -d]. This only works on a GDM server.

-s --sord=<time>

The SORD (start of reporting day) of a managed server.

-d --dormantthresh

The dormancy threshold is the number of days the Global Media Usage report uses to determine how many tapes are candidates for recycling. The default dormancy threshold value is 40 days.

--port=<port>

The port that the GDM Managed Server uses. This parameter is required.

--momport=<port>

The port that the GDM server uses. This parameter is required.



`--portmanaged=<port>`

To use when setting up a managed server where the GDM server and the Managed Server have non-default port settings.

From a GDM managed server you can “join” an existing domain. You can only join an existing domain from a managed server.

`-j --join=<MoMServer>`

Joins the domain for the GDM server specified. This option works on any server [optional `-s -d`].

`-s --sord=<time>`

The SORD (start of reporting day) of a managed server.

`-d --dormantthresh=<days>`

The dormancy threshold is the number of days the Global Media Usage report uses to determine how many tapes are candidates for recycling. The default dormancy threshold value is 40 days.

`-x --xdel=<server>`

Removes a managed server from NetBackup Advanced Reporter GDM configuration. You will still need to remove any scheduling on the local system manually. This works on the GDM Server and GDM managed server. To remove all configuration detail run this on both the GDM Server and GDM Managed Server.

The loader utility needs to run on a periodic basis to collect data. On Windows systems, use the 'at' command to schedule these tasks. On UNIX systems, use 'cron'.

`-L --installloader=<time>`

Schedules the data loader (arloader.sh or arloader.bat) to run daily using the 'at' or 'cron' commands. The default time is 7:00 A.M.

`--undopusher`

Removes 'at' or 'crontab' entry for the rollup utility. [deprecated]

`--undoloader`

Removes 'at' or 'crontab' entry for loader utility.

`-z --zap`

Removes all loader 'at' or 'crontab' entries command modifiers.

`-f --force`



Add parameters/make changes without checking for correctness or prompting during run.

Help

-h --help

Prints brief usage statement.

--man

Prints verbose help.

arconfig Examples

These are examples of how you would use the configuration utility to take certain actions.

How Do I Display Configuration Details?

There are several ways to report configuration information.

Option	Description
--print	This option lists all information from bp.conf and from the nbar database.
-g or --list	This option lists all the GDM managed servers. It will only work on a GDM server.
-c or --current	This option lists the current configuration information for all GDM managed servers from the NBAR database. It will only work on a GDM server.

How Do I Change Configuration Information Locally?

When you change configuration data on your local system, a backup configuration file is created. This file is called `nbar.conf.bak` and is located in the `/tmp` directory on UNIX systems (or in `/$TMPDIR` on HP-UX systems if the environment variable `$TMPDIR` is set) and in the `\tmp` directory on Windows systems.

If you are changing the NetBackup configuration on a UNIX NetBackup server, a backup copy of the `bp.conf` file will be created in `/tmp` (or in `/$TMPDIR` on HP-UX if the environment variable `$TMPDIR` is set). The backup file will be named `VERITASnbar-bp-conf.bak`.

Use the following options to change local configuration information, in combination with the keys listed in the option tables at the end of this section.

Option	Description
-b or --bpchange	This option changes the local bp.conf file by adding key/value pairs. For example, <code>arconfig -b SERVER=peach.xyz.com</code>
-n or --nbarchange	This option changes the local nbar.conf file by adding key/value pairs. For example, On UNIX: <code>arconfig.sh -n growtrend1=5 -n volumepctg=10.</code> On Windows: <code>arconfig.bat -n growtrend1=5 -n volumepctg=10.</code>

How Do I Modify a Risk Threshold?

This threshold determines at what point NBAR considers a policy to have a risk level of 1. The level you set will be reflected in the information displayed in the *Clients at Risk* report.

▼ To change a threshold option:

1. From the server for which you want to make the change, access the command line.
2. Type:
On UNIX: `arconfig.sh -n riskonethresh=<number>`
On Windows: `arconfig.bat -n riskonethresh=<number>`
where *<number>* is the number of days without a successful backup.

How Do I Create a GDM Server?

To create a GDM server from a standalone NBAR server, use the `-a` switch. You must specify the same database port for both the NBAR server and the GDM server.

▼ To create a GDM server:

1. From the NBAR server, access the command line.
2. Type:
On UNIX: `arconfig.sh -a --port <portnumber> --momport <portnumber>`
On Windows: `arconfig.bat -a --port <portnumber> --momport <portnumber>`



How Do I Modify a Threshold Option for a GDM Server?

The values for options such as, after how many occurrences should an error be highlighted, are initially set to a standard default. If you want to change these options, you need to modify the `nbar.conf` file on that machine.

▼ To change a threshold option:

1. From the server for which you want to make the change, access the command line.

2. Type:

On UNIX: `arconfig.sh -n ErrorCount=<number>`

On Windows: `arconfig.bat -n ErrorCount=<number>`

where *<number>* is the number of occurrences of an error above which the value should be highlighted.

How Do I Delete a Server from the GDM Domain?

The list of managed servers is stored in the `netbackup/bin/bp.conf` file on UNIX and in the registry on Windows.

▼ To delete a server from the list of GDM managed servers:

You must run this command from both the GDM server and from the managed server you want to remove.

1. From each server, access the command line.

2. Type:

On UNIX: `arconfig.sh -x <servername>`

On Windows: `arconfig.bat -x <servername>`

where *<servername>* is the name of the managed server you want to remove.

Note The `-x` option will delete a managed server from the NBAR configuration. You will need to remove any data collection processes that are scheduled on the managed server manually.

How Do I Join a GDM Domain as a Managed Server?

You can only join an existing domain from an NBAR server.

▼ **To add a server to the list of GDM managed servers:**

1. From the NBAR server, access the command line.
2. Type:

On UNIX: `arconfig.sh -j <servername> [-s hh:mm:ss -r hh:mm:ss -d number]`

On Windows: `arconfig.bat -j <servername> [-s hh:mm:ss -r hh:mm:ss -d number]`

where `<servername>` is the name of the GDM server, `-j` is the join option, `-s` is a modifier providing the SORD of the managed server, `-r` is a modifier providing the time the managed server rolls up to the GDM server, and `-d` is a modifier setting the dormancy threshold for the managed server (in days).

How Do I Schedule Data Collection Processes?

By default, the NBAR installation will schedule the data loader process to run at 7:00 A.M. If you want to change collection times or schedule the data loader to run more than once a day, you can do so using the cron or at utilities (see the next section). We recommend that you run data collection processes during a time of relatively little NetBackup activity.

Use the options in the table below to schedule data collection using the configuration utility. Note that times are given in a 24-hour clock format: 8 A.M. is 8:00 while 8 P.M. is 20:00.

Option	Description
-L or --installloader=<time>	This option schedules a daily run time for the data loader. For example, --installloader="8:00"
--undoloader	This option removes the AT or crontab entry for the data loader.
-z or --zap	This option removes all scheduled entries for the data loader.
-f or --force	This option adds parameters or makes changes without checking for correctness or prompting during the run.



Scheduling Data Collection Using crontab or at

If you want to schedule the data loader process to run more than once a day, you will need to use the `at` command (on Windows systems), or the `crontab` command (on UNIX systems) to schedule run times.

- ❖ Using `at` to schedule multiple loader runs

The Schedule service must be running for the `at` command to work. If you do not specify a remote machine, `at` will run on the local system. You may want to use the following parameters when scheduling multiple data loader runs:

Entry	Description	Valid Values
<code>\\computername</code>	The name of the remote computer on which you want to run the data loader utility	
<code>time</code>	The time the data loader should begin. Separate multiple times with commas.	<i>hours:minutes</i> Use 24 hour notation.
<code>/every:date[,...]</code>	Runs the data loader on every specified day or days of the week or month. <i>Date</i> can be days of the week, or days of the month. Separate multiple dates with commas.	M, T, W, Th, F, S, Su 1 - 31
<code>/next:date[,...]</code>	Runs the data loader the next time that <i>date</i> occurs. <i>Date</i> can be days of the week, or days of the month Separate multiple dates with commas.	M, T, W, Th, F, S, Su 1 - 31
<code>command</code>	The command to run the data loader. Specify the full path to the utility.	arloader.bat

For example, if you want the loader to run every day at 8 A.M. and 5 P.M., you would create the following command:

```
at 8:00,17:00 /every:M,T,W,Th,F,S,Su "C:\Program
Files\Veritas\NetBackup Advanced Reporter\bin\arloader.bat"
```

You must specify the *time* variable before the *date* variable. For more information, see the documentation for the operating system you are working on.

❖ Using cron to schedule multiple loader runs

At a command prompt, type `crontab -e`. This command will drop you into an interactive editing session for your crontab file. Create a crontab entry for each time you want the loader to run. Each entry must appear on a single line, and the entry must contain the following six fields. An asterisk indicates that any value is valid for that field.

Entry	Description	Valid Values
Minute	The minute in an hour you want the loader run to begin.	0 - 59
Hour	The hour in a day you want the loader run to begin.	0 - 23
Day of Month	The day in a month you want the loader run to begin.	1 - 31
Month of Year	The month in a year you want the loader run to begin.	1 - 12
Day of Week	The day of the week you want the loader run to begin.	0 - 6 0 = Sunday
Command to Execute	The command you want run at the time you have specified, in this case, the data loader utility.	arloader.sh

For example, if you want the loader to run every day at 8 A.M. and 5 P.M., you would create two crontab entries. Use the full path name to specify the data loader utility:

```
* 8 * * * /opt/VRTSnbaro/bin/arloader.sh
* 17 * * * /opt/VRTSnbaro/bin/arloader.sh
```

For more information, see the documentation for the operating system you are working on.



Email Functionality in NBAR

You can email NBAR reports in HTML format. An emailed report will retain the hyperlinks, tool tips, and embedded images available in the online version.

NBAR uses the SMTP protocol to send email. It conforms to the RFC 822 and RFC 2045 specifications. NBAR supports all email clients conforming to these standards.

There are two ways to email reports from NBAR:

- ◆ You can send a copy of the report currently on display by clicking a link in the interface.
- ◆ A command line scripting utility is available which allows you to email multiple reports. You can use job scheduling utilities like `cron` or `at` to schedule automatic emailing of reports.

Both of these options require you to enable email functionality and to specify SMTP configuration settings. For information on configuring these settings, refer to “How Do I Configure the SMTP Server?” on page 65.

Note Email functionality is disabled by default. You must enable it before it can be used.

How Do I Enable Email Functionality?

If you choose to enable email capabilities, you must invoke the email utility with the following parameter.

Note In previous versions of NBAR, `--config -e true` disabled email, and `--config -e false` enabled it. This has been reversed in this release. You must rewrite any scripts which include this parameter in order for the scripts to execute properly.

▼ To enable the Email this Report link

1. On the NBAR server, access the command line.
2. Type:

```
nbaremail.bat --config -e true  
(on Windows systems)
```

```
nbaremail.sh --config -e true  
(on UNIX systems)
```


▼ To disable the Email this Report link

1. On the NBAR server, access the command line.
2. Type:

```
nbaremail.bat --config -e false
(on Windows systems)
```

```
nbaremail.sh --config -e false
(on UNIX systems)
```

If you choose not to enable email capabilities, clicking on the **Email this Report** link will produce an error message informing the user that the feature has been disabled and asking the user to contact the NBAR administrator to enable it.

How Do I Configure the SMTP Server?

You must invoke the email scripting utility with the following parameters in order to use an SMTP server to deliver reports, or to change the settings of an existing SMTP server.

Note By default, NBAR assumes that the SMTP server is installed on the local machine, and uses nbar as the email ID of the sender. To change the sender's ID, see "How Do I Change the Sender's Email ID?" on page 66.

▼ To configure settings for an SMTP server:

1. From the NBAR server, access the command line.
2. Type:

```
nbaremail.bat --config -h <SMTP_server_hostname> -s <SMTP_user_account>
(on Windows systems)
```

```
nbaremail.sh --config -h <SMTP_server_hostname> -s <SMTP_user_account>
(on UNIX systems)
```

Parameters

-h or --smtpserver=<SMTP_server_hostname>

The name of the SMTP server used to send the reports. By default NBAR assumes the SMTP server is installed on the local machine. For example, localhost.localdomain

-s or --sender=<SMTP_user_account>



The SMTP address of the email sender. By default the script will use 'nbar' as the email sender's ID. For example, nbar@localhost.localdomain

`-e` or `--enable=<true|false>`

Disable or enable the email feature. By default the email feature is disabled.

How Do I Change the Sender's Email ID?

NBAR uses the email ID specified here while sending reports through email. If a recipient replies to an emailed report, the reply will go to this email ID. Some mail servers will not recognize an email ID such as 'nbar', and require that you specify a fully-qualified name, such as nbar@company.com, for the email ID to be recognized as a valid email address.

▼ To change the email ID:

1. From the NBAR server, access the command line.
2. Type:

On Windows: `nbaremail.bat --config --sender=nbar@company.com`

On UNIX: `nbaremail.sh --config --sender=nbar@company.com`

This command will set the sender's email ID to nbar@company.com .

How Do I Email Individual Reports from the Browser?

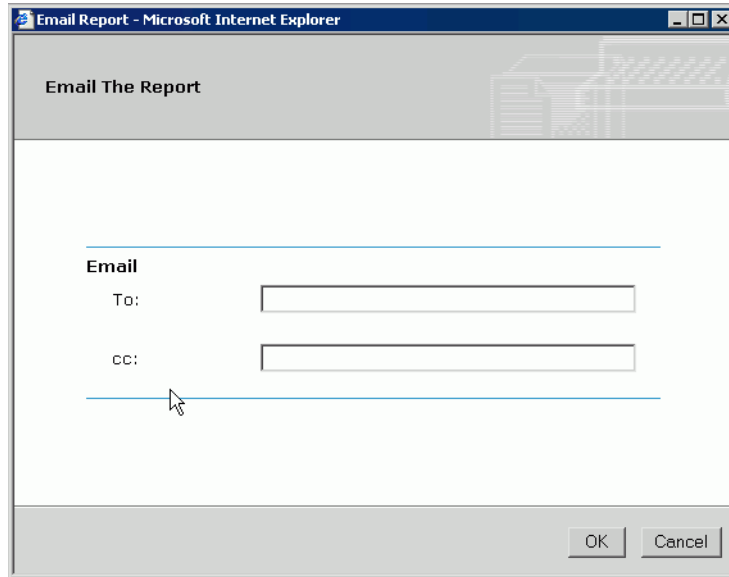
If you want to send a specific report, the simplest thing to do is to click on the hyperlink labeled **Email this Report** present in the NBAR interface. This action will email the report you are looking at to the persons you specify. This option makes sense if there are details in a particular report you want to draw attention to.

▼ To send a report from the browser:

1. Navigate to the report you want to send.
2. Click the **Email this Report** link.
3. A dialog box requesting recipients' email addresses will appear. Enter the appropriate information.

A copy of the report will be sent to the specified email address.

Email Report dialog



How Do I Email Reports Using the Command Line Utility?

The email script operates by accepting report ID and recipient email IDs at the command line. The email utility is in the form of a batch file on Windows (called `nbaremail.bat`) and a script on UNIX systems (called `nbaremail.sh`). The `nbaremail` email utility is located in `<nbar_installation_directory>/bin` on both systems.

Use the email utility to mail one report or a group of reports to one individual or to a group of people. You must have the IDs of the reports you want to mail, and you must specify the email addresses to which you want the reports sent. You can also schedule delivery of reports using `cron` (UNIX) or `at` (Windows).

▼ To display a list of the available reports and their IDs:

1. From the NBAR server, access the command line.
2. Type:
 - On Windows: `nbaremail.bat --list -a`
 - On UNIX: `nbaremail.sh --list -a`

A list of the available reports and their IDs will display. This list will include the standard NBAR reports and any custom reports created by users.



▼ **To display a list of the Regular reports and their IDs:**

1. From the NBAR server, access the command line.
2. Type:

```
nbaremail.bat --list -r (on Windows systems)
```

```
nbaremail.sh --list -r (on UNIX systems)
```

A list of the available reports and their IDs will display. This list will include the standard NBAR reports only.

▼ **To display a list of the Custom reports and their IDs:**

1. From the NBAR server, access the command line.
2. Type:

```
nbaremail.bat --list -c (on Windows systems)
```

```
nbaremail.sh --list -c (on UNIX systems)
```

A list of the available reports and their IDs will display. This list will include any custom reports created by users only.

▼ **To send reports from the email scripting utility:**

1. From the NBAR server, access the command line.
2. Type:

```
nbaremail.bat --email -e "someone@company.com;somebody@company.com" -r 17,23
```

(on Windows systems)

```
nbaremail.sh --email -e "someone@company.com;somebody@company.com" -r 17,23
```

(on UNIX systems)

This command would send reports 17 and 23 to *someone* and *somebody* at *company*.

Note Separate multiple report IDs with commas (,) and multiple email addresses with semicolons (;).

Parameters

-r or --report =<report_ID>



The ID of the report to be mailed. Report IDs are obtained by using the `-l` option, described below.

```
-e or --emailid=<list_email_IDs>
```

The recipient's email ID. Email IDs must be separated with semicolons (;).

```
-l or --list [-a|-r|-c]
```

A list of all the available reports and their report IDs. Use `-a` for all reports, `-r` for standard reports only, and `-c` for custom reports only.

NBAR standard report IDs are integers from 1 to 150. Custom reports will be integers 151 and above.

How to Enter Data for Specific Reports

Certain reports require that you provide specific information on which to report, for example, the *Client Job History* report lists the job history for a specified client. You can enter this information through the command line utility, using the parameters specified in the following table. For reports that require more than one parameter, join the parameters with an ampersand (&).

Example:

Suppose you want to mail the *Window Usage by Backup Policy* report to two users, whose email names are `user1` and `user2`. Assume the report number assigned to *Window Usage* is 23, the pool name is `pool1` and the schedule name is `sched1`. The command line would look like this:

```
nbaremail.sh --email -r 23 -e user1@veritas.com;user2@veritas.com
-p "p=pool1&sched=sched1"
```

Parameters

Report Name	Input Parameters	Notes/Examples
Client Job History	client=<fully_qualified_name_of_client>	client=foo.veritas.com



Report Name	Input Parameters	Notes/Examples
Expired Media List	d=<date in dd-MMM-YYYY format>	d=16-SEP-2002 This report lists all media which will expire before the date specified by this parameter.
Offsite Media Candidates	d=<date in dd-MMM-YYYY format> p=<pool_name or policy_name> expr=<the_escaped_text>	d=16-SEP-2002 & p=pool1 & expr=% This report takes three parameters: The specified date is the date since the media were written, a policy or pool name, and text to use for a pattern match.
Window Usage by Backup Policy	p=<policy_name> sched=<schedule_name>	p=pool1 & sched=schedule1 This report takes two parameters: you must specify a policy and a schedule.
Drive Statistics	h=<fully_qualified_name_of_media_server>	h=media1.veritas.com

How to Use a Script or Batch File to Send Reports

If you want to disable email functionality from the report interface, but still send reports from the command line, you can create a script (on UNIX systems) or a batch file (on Windows systems).

Contents of Sample Batch File Named `emailsript`

```
@REM emailsript.bat
@echo off
REM Enable the email functionality
nbaremail.bat --config -e true
REM email report 27 to someone@company.com
nbaremail.bat --email -r 27 -e someone@company.com
REM Re-disable email functionality
nbaremail.bat --config -e false
```



Contents of Sample Script File Named `emailscript`

```
#####
#!/bin/sh

#emailscript.bat

#Enable the email functionality
nbaremail.sh --config -e true

#email report 27 to someone@company.com
nbaremail.sh --email -r 27 -e someone@company.com

#Re-disable email functionality
nbaremail.sh --config -e false
```

How Do I Schedule Report Delivery?

Use the `cron` utility on UNIX systems, or the `at` utility on Windows systems to schedule automatic report delivery via a batch file. For information on how to use `cron` or `at`, refer to the documentation for your Windows or UNIX operating system.

Sample Command (Windows)

```
at 7:00 /EVERY:M,T,W,Th,F,S,Su "emailscript.bat"
```

This command will schedule the `emailscript.bat` to run every day at 7 A.M. The batch file might contain a line such as:

```
nbaremail.bat --email -e someone@company.com -r 17,23
```

which would mail reports 17 and 23 to Someone daily at 7 a.m.

Sample Command (UNIX)

At the UNIX prompt, type:

```
crontab emailscript.cron
```

The `emailscript.cron` might contain lines such as:

```
0 7 * * * nbarmail.bat --email -e someone@company.com -r 17,23
```

```
0 7 * * 1-5 nbarmail.bat --email -e somebody@company.com -r 17
```

These lines will mail reports 17 and 23 to Someone daily at 7 A.M., and report 17 to Somebody every week day (1-5) at 7 A.M.



How Do I Troubleshoot the Email Reports Feature?

NBAR creates an email log each time the email feature is used. Logging information generated by the email feature of NBAR is stored in the standard logs directory of the web server, for example under `<install_path>/tomcat/webapps`.

The email log contains the status of the email delivery. If the email action fails, the log contains detailed debug information. The log lists the IP address and host name of the NBAR client requesting the email action, and the email ID of the recipient. The log also lists the IP address and host name of any machine that attempts to change the configuration of the `nbar.conf` file.

This information allows you to determine whether or not the emailed report was sent successfully, who sent the reports, and to whom they were sent.

The log file name appears in the following format:

```
NBAR_Email.<yyyy.mm.dd>.log
```

where `yyyy.mm.dd` represents the date the log file was created.

Sample Error Messages

Error Message	Problem
Error while connecting to the SMTP server <code>xyz.unknowndomain.com</code>	You have specified an incorrect SMTP server.
Unexpected error while emailing report <code><username>...domain name</code> required	You have specified an invalid sender email address.

Creating Custom Reports

You can rearrange existing NBAR tabular reports to more effectively display the data you are interested in seeing. You can edit column widths, determine which columns to display, and the order in which they show. You can save each edited report format as a custom report, up to a maximum of 300 custom reports.

How to Customize NBAR Reports

▼ To customize one of the tabular reports

1. Click **Customize** to bring up the Create Custom Report dialog.
The dialog will list the column headings available in the current report.
2. Select the checkbox in the **Show** column for each heading you would like to see on the custom version of the report.
3. Under **Column Width**, specify the width of each column in characters.

Note If the contents of a column are wider than the pre-set width of the column, the column will expand to display the text. If a column has a greater width than necessary, there may be alignment problems. The way the columns display depends partly on the browser in use also.

4. Under **Column Order**, number the columns in the order you want them to appear, with 1 being the leftmost column, etc.
5. Choose a column heading to sort by in the **Sort by** drop down box.
6. Select the **Ascending** or **Descending** radio button to choose sort order.
7. Enter a descriptive name for the custom report in the space provided.
8. Enter a short name for the custom report in the space provided. This is the name that will show up in the Custom Reports tree.
9. Click **Preview** to preview the report, **Reset** to undo your changes, or **Save** to save the customized report with the specified report name.



Example: Customizing the Active Backup Policy Definitions Report

Create Custom Report

Check the columns you would like to view in the report. The width of the columns (in characters) can be adjusted. The order of the columns from left to right can be adjusted by specifying an order. Click the Preview button to see how the settings will appear.

Show	Column Name	Column Width	Column Order
<input checked="" type="checkbox"/>	Properties	<input type="text" value="9"/>	<input type="text" value="1"/>
<input checked="" type="checkbox"/>	Policy Name	<input type="text" value="25"/>	<input type="text" value="2"/>
<input checked="" type="checkbox"/>	Policy Type	<input type="text" value="15"/>	<input type="text" value="3"/>
<input type="checkbox"/>	Last Modified	<input type="text" value="11"/>	<input type="text" value="4"/>
<input type="checkbox"/>	Max. Jobs	<input type="text" value="10"/>	<input type="text" value="4"/>
<input type="checkbox"/>	Number of Clients	<input type="text" value="6"/>	<input type="text" value="4"/>

Sort by Ascending Descending

I want to save these settings in the "Custom Reports" Collection as a report with the name:

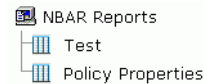
I want to set the short name of the "Custom Reports" to:

From the *Active Backup Policy Definitions* report, click the **Customize** button. The Create Custom Report dialog displays, listing the column headings in the Consolidated Error report.

In this example, we chose to list sort by policy name, and only list three of the six columns, in the following order: Properties, Policy Name, Policy Type.

The information displayed in the report is sorted by Policy Name.

The report title remains the same, but when you **Save** the report, the node under the Custom Reports tree will say Policy Properties.



Preview
Reset
Save
Cancel

Once we have completed this dialog, we choose **Preview** from the buttons along the bottom of the Custom Dialog. A preview of the edited report displays, below:

spark.storagewiz.com

Active Backup Policy Definitions Fri, Aug 1, 2003

Policy Name	Policy Type
Calendar	Standard
system	Standard
mars	Standard
HomeArea	Standard
vault_catalog	Vault
Duplication	Vault
disk_backup	Standard
test_Solaris_NBAR_Database	Standard
spark1	Standard
user	MS-Windows-NT
Win2k	MS-Windows-NT

Printing Reports

How Do I Print the Selected Report?

You can print any of the generated reports.

- ❖ Click on the **Printer Friendly** button to display a printer-friendly version of the report, then use your browser to print the report.

Note With the default print settings a long cryptic URL may appear in the header or the footer of the report. You can hide it by going to **File >Page Setup** in your browser and deleting the information in the header/footer boxes.

Backing Up the NBAR Database

As with any program containing significant data, we recommend you back up the NBAR database on a regular basis.

- ❖ To backup the NBAR database:

In NetBackup, create a policy to back up the files in `/opt/VRTSnbaro/var` for UNIX systems, or `c:\Program Files\VERITAS\NetBackup Advanced Reporter\data` for Windows systems.

The directory paths in these examples use the default directory configuration. If you change the location of the NBAR directory during installation, the paths will be different on your system.

Note Be sure to schedule the backup during a time NBAR's data collection processes are not running.



Using NBAR with NBAC-enabled NetBackup

If NetBackup has enabled NetBackup Access Control (NBAC), you will need to create an NBAC-cron account in order for the NBAR data loader to be permitted to perform its scheduled daily run. NBAC-cron is a new utility located in the NetBackup goodies directory. The user credentials created with this account will not expire as long as the loader runs at least once a year. For more information on NBAC, please see the Access Management chapter in the *NetBackup System Administrator's Guide, Volume II*.

▼ To set up an NBAC-cron account for NBAR

1. Log in to your operating system as the same user who set up the data loader's schedule. Most likely you will be logging in as root (on UNIX systems), or Administrator (on Windows systems).

2. Type the following to create a user for this cron account.

```
<install_dir>\NetBackup\bin\goodies\nbac_cron -AddAt or  
/usr/opensv/netbackup/bin/goodies/nbac_cron -AddCron
```

This user now has the credentials necessary to set up a cron account on an NBAC-enabled NetBackup configuration.

3. Type the following to set up an NBAC at or cron account.

```
<install_dir>\NetBackup\bin\goodies\nbac_cron -SetupAt  
[-Port #] or  
/usr/opensv/netbackup/bin/gooides/nbac_cron -SetupCron [-Port #]
```

-Port # specifies the authentication port. It is only necessary to include the port number if a port other than the default, 2821, is used.

This chapter explains some utilities provided to help you troubleshoot your NBAR installation, and describes some known issues and solutions in NetBackup Advanced Reporter. This chapter contains information on these topics:

- ◆ What are the Logging Utilities?
- ◆ What Is the Database Export Utility?
- ◆ Troubleshooting Known Issues

What are the Logging Utilities?

NBAR 5.1 provides several error logging utilities. While you can access these logs, and they may provide you with useful information, the information is collected to help our support engineers, and is therefore somewhat cryptic. We suggest you use the *NetBackup Troubleshooting Guide* and the topics listed in this chapter as your first reference, before turning to these log files.

Location of Logs

NBAR logs messages to one or more places, depending on the nature of the message and the verbosity level setting (see the section below on verbosity levels).

- ◆ MySQL nbarlog table
Messages will be logged to this table if they meet verbosity guidelines. Error messages will always be logged to this table. The location of this table depends on which operating system you are using.
- ◆ If you create a directory called the same thing as the data loader process (arloader) or the data rollout process (arpusher), in the same directory as the other NetBackup logs, NBAR will write messages to these log files. Use these logs to investigate problems with the data collection processes.



For example, if you want to create a log file of messages generated by the data loader on a Solaris system, you would create a directory named arloader under `/usr/opencv/netbackup/logs`.

A log file is generated each time the data collection process runs. The logs are text files named with the date created. For example, `log.081302` is a log file created on August 13, 2002.

- ◆ Serious NBAR errors, such as a database malfunction, will be written to the system log on UNIX systems, or the event log on Windows systems.

Retaining Logs

You can modify the retention period for the nbarlog table entries through the KeepLogs parameter in the nbar.conf file. The KeepLogs parameter specifies the number of days to save nbarlog table entries. The default value is seven days.

Log File Purging

The NBAR log files that reside in the NetBackup logs directory, for example, arloader or arpusher) are purged by the same mechanism that purges other NetBackup log files. The amount of time these log files are kept is defined in NetBackup System Configuration>Global Attributes>Duration to Retain Logs. See the *NetBackup System Administrator's Guide* for more information.

The nbarlog table entries are purged based on the value of the KeepLogs parameter in the nbar.conf file.

ardumplog

`ardumplog` is a command line utility that displays the contents of the database for a period of time you define. Use `ardumplog` to investigate data loader failure or to send diagnostic information to VERITAS support. The parameters for this utility are listed below.

Note In a cluster the `-d` or `--dbhost` parameter is mandatory. You must use the virtual name that was used during NBAR installation, not the host name of the machine.

Parameter	Description	Format/Example
-v or --verbose	This parameter prints out all the details for the logged information.	N/A
-s or --starttime	The beginning of the time period of the logged information you want to display. Defaults to three days before current date. Uses 24-hour time.	YYYY-MM-DD hh:mm:ss For example, 2003-09-02 11:14:32 would be September 2, 2003, at 11:14 a.m.
-e or --endtime	The end of the time period of the logged information you want to display. Defaults to the current date. Uses 24-hour time.	YYYY-MM-DD hh:mm:ss For example, 2003-09-05 13:32:54 would be September 5 2003, at 1:32 p.m.
-d or --dbhost	The name of the server which contains the NBAR database. This value defaults to the local machine. The port number is optional.	servername [:portnumber] For example, hancock.veritas.com:3306
-h or --help	This parameter displays a list of possible parameters.	N/A

Log Files Created by the Web Console

The web console (web GUI engine) creates logs in the *install_path/tomcat/logs* directory. By default, logs older than four days are deleted. You can disable this feature, or change the number of days after which the logs are deleted.

▼ To disable automatic deletion of the logs

1. Locate a file called `web.xml` in the *install_path/webapps/nbar/WEB-INF* directory

This file contains the following lines:



```
<init_param>
<param-name>CleanLogs</param-name>
<param-value>>true</param-value>
</init-param>
```

2. Change 'true' to 'false'.
3. Save the modified web.xml file.
4. Restart the NBAR web console for the changes to take effect.

Note In a clustered environment, you must make the same changes to the web.xml file on each node.

▼ To change the number of days the logs are kept

1. Locate a file called web.xml in the *install_path/webapps/nbar/WEB-INF* directory

This file contains the following lines:

```
<init_param>
<param-name>CleanAfterDays</param-name>
<param-value>4</param-value>
</init-param>
```

2. Change 4 to the number of days you want to keep the logs.
3. Save the modified web.xml file.
4. Restart the web console for the changes to take effect.

Note In a clustered environment, you must make the same changes to the web.xml file on each node.

What Is the Database Export Utility?

The database export utility, **nbardbex**, is a command-line utility that allows you to select a list of records from the NBAR database and export them to a file or another application.

This feature may be particularly useful if you want to use a spreadsheet program such as Excel to analyze the information pulled from the database.

Using the Database Export Utility

Type the name of the utility on the command line, and use the parameters listed below to determine which database and which records the utility selects.

The name of the utility is `nbardbex`. Required parameters are server, **-S**, and duration, either **-s** and **-e**, or **-hoursago**. If you do not specify a time, the database export utility assumes midnight (0:00) on the date indicated. Use **-H** to place headings on the data columns, and **-d** to change the default data delimiter. To export data from a server running on a nondefault port, include the port number in the command.

For example:

```
nbardbex -S peach:6606 -hoursago 48
```

where 6606 is the nondefault port number.

Sample Output

```
533 0 B Complete 0 "2001-12-07 21:51:39" 0 txb-test Differential-Inc
peach.min.ov.com peach.min.ov.com 0 Backup 100 peach-dlt2-robot-tld-0 "" '/var/adm'
534 0 B Complete 0 "2001-12-07 22:01:38" 0 txb-test Full
peach.min.ov.com peach.min.ov.com 0 Backup 100 peach-dlt2-robot-tld-0 "" '/var/adm'
```

Parameters

- S** The name of the master server on which the NBAR database resides
- s** The date and time you want to start collecting records, in the format mm/dd/[yy]yy [hh:mm:ss]. (The brackets indicate optional information.)



- e** The date and time you want to finish collecting records, in the format mm/dd/[yy]yy [hh:mm:ss]. (The brackets indicate optional information.)
- hoursago** Number of elapsed hours counting backward from the current time from which to collect records. For example, if it is now noon, and you choose 15 as the value for the **-hoursago** parameter, the database export utility will collect records from the previous 15 hours, that is, since 9 p.m. the previous evening.
- H** This parameter places column headings in the output
- d** The character you place after this parameter will act as the field delimiter. Space or blank is not an acceptable delimiter. A tab is the default delimiter.

Note You must use **-s** and **-e** together. **-s** and **-e** and **-hoursago** are mutually exclusive.

Example

```
nbardbex -S servername -s 11/01/2002 -e 11/02/2002
```

This example would give you information on all NetBackup jobs beginning at midnight, November 01, 2002, and ending at midnight, November 2, 2002.

Record Values

Most records represent a complete job run by NetBackup. However, the database export utility will generate a record for each file system or directory specified in the NetBackup policy. Therefore, the utility will create more than one record for jobs that back up more than one file system or directory.

Each record contains the information outlined below. Use the **-H** parameter if you want the headings to appear on the data you choose to output.

Heading	Description
Job ID	The ID number of the job.
Job PID	Always 0.
Type	The type of job. These are standard NetBackup job designations.



State	Always 'Complete'.
Status	Indicates the success or failure of the job. These are standard NetBackup job completion codes.
Start Time	The time the job started.
End Time	The time the job ended.
Elapsed Time	The amount of time the job took.
Kilobytes	The number of kilobytes transferred during the job.
# of Files	The number of files transferred during the job.
KB Per Second	The number of kilobytes transferred per second during the job.
Policy	The policy name of the job.
Schedule	The name of the schedule within the policy.
Client	The name of the machine from which data was backed up.
Media Server	The name of the media server the data was backed up to.
Attempt	Always 0.
Operation	Backup or Restore only.
% Comp. (estimated)	Always 100.
Storage Unit	The name of the storage unit the data was backed up to.
Owner	Always "".
File List	The file system or directory selected by the backup policy. If more than one file system is selected, NBAR will create a record for each file system or directory. For example, c:\dir1 d:\dir2. This information is not available for multi-stream clients or clients with a local include/exclude list.
Media ID	The ID of the media on which the information was backed up (tape_barcode1, tape_barcode2).
Tape_Drive	The ID of the tape drive that was used when the information was backed up.



Troubleshooting the Database Export Utility

Errors with the database export utility have one of two causes: either there is a problem accessing the database, or there is mistake on the command line.

Database Error

If the facility part of the error message says “mysql client” or “mysql server”, then the problem is with the database. In that case, please note the error code (at the end of the first line), and the name of the MySQL API (on the second line), and contact Customer Support.

If you cannot connect to the database, either the database is not running, or the TCP port the client (the machine running the web GUI engine) is using to connect to the database is incorrect.

Command Line Error

If the error is on the command line, the reason will be “nbar unknown” or “nbar command”. In that case, the following information may help:

Error codes contain two lines. The first identifies the problem, and the second line provides additional information.

The first line consists of the following:

severity: (value) facility: (value) code: (value)

Values for the first line are as follows:

- ◆ Possible severity values are “informational”, “warning” and “error”.
- ◆ Possible facility values are:
 - “nbar unknown” - something in the export utility code other than command-line interpretation
 - “nbar command” - export utility command-line interpretation
 - “mysql client” - MySQL code incorporated into the export utility
 - “mysql server” - MySQL server failures
- ◆ Possible code values depend on the context and consist of a brief description of the problem.

Example

Where the server name is server1:

```
server1% nbardbex -S server1 -hoursago 168 -s 11/13/2002
severity: error facility: nbar command code: invalid option
combination
operand value is "11/13/2002"
```

This error tells you that **-hoursago** and **-s** options are incompatible and that the value of the option in which the error was detected was that for the start date.

Troubleshooting Known Issues

This section prepares you to deal with situations you may encounter as you configure and use NBAR. Issues include aspects of licensing, the NBAR database, and data collection and display.

Licensing Issues

- ◆ License changes are not automatically updated in the browser window. Users need to refresh, reconnect to, or restart the web browser for license changes to be reflected. This change may take up to two minutes to display; as a result you may not see updated licensing information immediately after the browser has been refreshed, reconnected to, or restarted.

Note If you are changing from a demo license to a permanent license, you must wait for NBAR data collection to process this new information before the permanent license appears. By default, the collection is scheduled to take place at 7 a.m.

- ◆ If VERITAS NetBackup was installed with a license key including the Advanced Reporting option, you will not be required to supply a license key during installation of NBAR.
- ◆ If you attempt to install NBAR without a license key, you will be prompted to enter the license key during the installation on UNIX systems.
- ◆ If you receive an error message that the license key is corrupted or invalid, you must re-enter the key.

On UNIX systems, run the following command and enter the license key again:

```
<install_path>/netbackup/bin/admincmd/get_license_key, where
install_path is the directory in which NetBackup resides.
```



On Windows systems, exit the NBAR installation and run the NetBackup Administration Console. From the **Help** menu select **License Keys > Add Keys**. Add your NBAR license key again. Right-click on the key you just added to display a Properties sheet. Make sure the **Product** field is appropriate for the type of NetBackup license you have. Verify that **Valid:** = Yes. Check the expiration date.

On both UNIX and Windows systems, running `bpmlicense` from the command line will display license key information. Adding the `-verbose` option will display information about all keys. Adding `-nb_features -verbose` will display only information about valid NetBackup license keys. `bpmlicense` is located in the `NetBackup\bin\admincmd` directory on Windows systems, and the `netbackup/bin/admincmd` directory on UNIX systems.

Web Console

These issues pertain to the NBAR web console.

Console Does Not Work in High Security Zone

The NBAR web console will not work if JavaScript is disabled. For proper functioning, the NBAR web console requires that JavaScript be enabled. In Microsoft Internet Explorer, enable Java Script by selecting **Internet Options > Security > Active Scripting**. In Netscape, select **Edit > Preferences > Advanced > Enable Java**.

Running the NBAR Web Console with Windows Server 2003

Given Windows Server 2003 security, you may need to add the URL NBAR uses to access the web console to the local intranet zone.

Stopping and Starting Daemons or Services

Stopping and Starting NBAR Daemons on UNIX Systems

Note Allow about a minute between issuing the command to stop and the command to start the daemons.

If you did not choose to have the daemons restarted automatically after a system reboot, you must start them manually.

▼ To restart the daemons

- On a Solaris, HP-UX, and AIX server execute:



- ◆ `/usr/opencv/nbar/bin/nbar stop`
PAUSE, then execute
`/usr/opencv/nbar/bin/nbar start`

Stopping and Starting the NBAR Services on Windows Systems

Note Allow about a minute between issuing the command to stop and the command to start the services. Make sure all three services are stopped before you restart any of them.

Note In a Microsoft Cluster Service solution, start and stop NBAR services through the Cluster Administrator. Do not use **Control Panel > Administrative Tools > Services**.

▼ To restart the services

1. Click **Control Panel > Administrative Tools > Services**.
2. Highlight the following services one at a time:
 - NetBackup Advanced Reporter Database Server**
 - NetBackup Advanced Reporter System Monitor**
 - NetBackup Advanced Reporter Web GUI Engine**
3. From the **Action** menu choose **Stop**.
Wait, then execute step 4 below.
4. From the **Action** menu choose **Start**.



Determining which Daemons or Services are Running

On UNIX Systems

The NetBackup `bpps -a` command will list the NetBackup, Media Manager, and NBAR processes running. The `bpps -r` command lists only the NBAR processes.

- ❖ To determine which NBAR daemons are running

On any UNIX server, execute:

```
/usr/opensv/netbackup/bin/bpps -r
```

On Windows Systems

▼ To determine which services are running

1. In the NetBackup Administrative Console (available in the **VERITAS NetBackup** folder on the **Start** menu), open the **Activity Monitor**.
2. Select the **Services** tab and look for the following services:
 - NetBackup Advanced Reporter Database Server**
 - NetBackup Advanced Reporter System Monitor**
 - NetBackup Advanced Reporter Web GUI Engine**

Note In a Microsoft Cluster Service solution, start and stop NBAR services through the Cluster Administrator. Do not use **Control Panel > Administrative Tools > Services**.

If any of the services are not running, see the topic “Stopping and Starting the NBAR Services on Windows Systems” on page 87.

Upgrade Failures on Solaris Systems

If you are upgrading from a maintenance pack on a Solaris system, you must remove the previous installation directory after you have uninstalled the previous version of NBAR, or the upgrade installation may fail.

▼ To upgrade from a maintenance pack on Solaris

1. Uninstall NBAR by running `pkgrm VRTSnbaro`.

The existing database and its contents will be saved to a file in the `/tmp` directory.

2. Remove the installation directory. (The default directory is `/opt/VRTSnbaro`.)
3. Install NBAR 5.1.

If you do not remove the installation directory before installing NBAR 5.1, you may see a message such as:

```
Do you want an upgrade install to the /opt/VRTSnbaro
directory (default:y) [y,n,?,q] y

/opt/VRTSnbaro already exists. NetBackup Advanced Reporter
needs /opt/VRTSnbaro to link to the installation directory.
Please correct this without shutting down (to preserve the
file in /tmp) and re-install.

pkgadd: ERROR: request script did not complete successfully.
Installation of <VRTSnbaro> failed.

No changes were made to the system.

NetBackup Advanced Reporter Installation failed.
```

If you receive this message, remove the installation directory without shutting down, and reinstall.

Managed Servers Configured with Non-Default Ports

In a GDM environment, you cannot use the dropdown server list to look at a managed server configured with a non-default port. The GDM server receives the data from these managed servers, but you must direct the browser to the managed server to display data from that server.

Turning Off IP Address Lookup

By default, the data loader looks up the IP address for each host. If this process is unacceptably long, you can turn it off. In `nbar.conf`, set `iplookup=0`.



Changing Reference Date or Timeframe in Two Browsers

If you have two browser windows open and pointing to two different NBAR servers, you cannot use the same Reference Date or Timeframe dialog to change the reference date or timeframe in both windows. You must make the changes in one browser window and close the dialog box before making the changes in the other browser window.

Future Dates Appear to be Accepted by Timeframe

If you enter a date in the future in the Timeframe or Reference Date dialog, the dialog will restore the previous valid date. However, the report may display before the valid date is restored to the dialog box, leading you to believe the future date has been accepted. The report will reflect data for the valid date.

Data Load in Progress Icon

In NBAR 5.1, you can configure the data loader to run more than once a day. If you generate a report while the data loader is in progress, the Data Load in Progress icon appears. This icon indicates that the information in the reports may not be completely accurate because NBAR is in the process of collecting data. Next time you generate a report, NBAR will check to see if the data loader is still in progress. If it is not then the Data Load in Progress icon disappears.

If you are in a GDM environment, the icon only displays if you are generating reports on the managed server on which the data loader is active. No icon displays when you generate GDM reports or reports for a managed server on which the data loader is not active. Click the icon to display a tooltip estimating the total time for data loader activity. The average total times are based on historic times for loader activity.

Small Character Size in Netscape 4.7

The Netscape 4.7 browser overrides NBAR's font settings, and the resulting character font is very small. To work around this issue go to **Edit > Preferences > Fonts** in the Netscape browser. Select **Allow scaling**. Select **Use my default fonts...** to display a more legible font size.

Email Client Issues

Each NBAR report is emailed in HTML format. There may be a conflict in the way an HTML email client processes the report. For example, some email clients may strip off the head portion of the NBAR report, others might modify the body of the report. This action will result in a distortion of the report in that particular email client, such that graphs are not shown, or extraneous characters appear on the report.

Database Issues

The known issues in this section involve database tables or connection problems.

Job Data Not Being Collected

If job data is not being collected in the NBAR database, and jobs are not showing up in the NetBackup Activity Monitor, it is possible that the `DISABLE_JOB_LOGGING` setting in NetBackup has been set equal to `YES`. When the `DISABLE_JOB_LOGGING` setting is set to `YES`, NetBackup does not retain any job data.

Check the `DISABLE_JOB_LOGGING` setting in NetBackup Host Properties, in `bp.conf`, or in the registry. Make sure it is set to `NO`. Restart the daemons or services, and make sure job information is available in the Activity Monitor and in `bpdbjobs`.

Hosts Table

The hosts table contains information about each machine known to NBAR. A host will persist in the hosts table as long as it has job information associated with it, even if the host has been removed from all policies.

If the host does not have job information associated with it, it will be deleted from the database only when the value set for the purge frequency of the database is reached. The database is purged weekly by default.

Unable to Connect to Database Error Message

If you receive this message, it means the client could not connect to the database server. The database may not be running, or the TCP port the client is using to connect to the database may be incorrect. Follow the instructions below to check these possibilities on Windows or UNIX systems.

Windows

- ◆ To verify that the database server is running, check the status of the NetBackup Advanced Reporter Database Server and System Monitor services.



- ◆ To find the value of the port number for the database server, navigate to the install directory and cd to the bin directory.

Type **arbdb --help**

If the database server is running, this command will list the attributes of this service:
TCP port: 3306.

To check the port number of the client, navigate to the directory where NBAR is installed. From the `webapps\nbar\WEB-INF\` directory, open `web.xml`. Look for:

```
<param-name>dbPort</param-name>
<param-value>3306</param-value>
```

to make sure that the port number of the database server and the port number configured for the client are the same.

UNIX

On UNIX systems, there are several ways to check the operation of the database server.

- ◆ Typing the command

```
ps -ef | grep arbdb
```

should show the process `arbdb` running. If the database server is not running, type the command

```
/usr/openv/nbar/bin/nbar start
```

to start the database.

- ◆ The UNIX socket that the process `arbdb` uses must be available. The default location of this file, `.arbdb.sock`, is in `/usr/openv/nbar/bin/`. Use **ls -a** to look for the file. Make sure the `nbar/bin` directory is writable by the user name that was specified when NBAR was installed (the default user name is `nbar`).

- ◆ Check that the port number the client is using to connect to the database is the same as the one on the database server. To find the port number for the database server, type **/usr/openv/nbar/bin/arbdb --help | grep port**

If the database server is running, this command will list the attributes of this service:
TCP port: 3306.

To check the port number of the client:

```
cd /usr/openv/nbar/webapps/nbar/WEB-INF
```

```
vi web.xml
```

Look for:

```
<param-name>dbPort</param-name>
```

```
<param-value>3306</param-value>
```

to make sure that the port number listed here and the port number listed by executing `arbdb --help` match.

- ◆ The process file `/usr/openv/nbar/var/<hostname>.pid` should only exist if the database server is up and running.
- ◆ Check the log file for error messages. This file can be found in `/usr/openv/nbar/var/<hostname>.log`. For more information about logging in NBAR, please see the “What are the Logging Utilities?” section in this chapter.

Report Issues

This section of the troubleshooting chapter describes issues with report information.

Master Server System Performance Report -- AIX only

The data for NBAR’s Master Server System Performance report is collected by the NBAR process `armonitor`. `armonitor` requires `vmstat`, which is not installed by default with AIX 5.1. To resolve this issue, you must install `vmstat`, which is part of the `bos.acct` fileset on the AIX Base Operating System CD-ROM.

After you have installed `vmstat`, run `/usr/openv/nbar/bin/nbar start` to start `armonitor`.

Discrepancies in the Schedule Forecast Report

The *Schedule Forecast* report will show incorrect forecast data for calendar-based schedules. The data in the report will not match results from a `bpsched -predict` query, because NBAR and NetBackup use different criteria to predict what jobs will run.

Active Media Report

NBAR reports frozen media as a subset of active media. NetBackup does not consider frozen media to be active.

Over-Reporting of Totals for Multiplexed Jobs

For multiplexed jobs where several backups combine to create one image, NetBackup Advanced Reporter will report the total bytes backed up for the image on a per job basis. This action may cause an over-reporting of the total number of bytes backed up for multi-plexed jobs.



Job Retry Information

The way NBAR and the way NetBackup record job retries is somewhat different. This can lead to discrepant reported results. We list several common situations below.

Several Status Codes, Same Job ID

If a job fails, and the same instance of the scheduler (`bpsched`) is still running, the scheduler will try to start the job again with the same job ID. If the job succeeds on this second try, NBAR's data loader will record the job as successful as long as the retries take place within the same instance of the scheduler. However, if the scheduler has stopped and started again, then the same job will be assigned a new job ID and NBAR will treat it as a new job.

Discrepancies with Activity Monitor

At times the number of jobs reported by Activity Monitor will not match the number of jobs reported by NBAR. This is because the Activity Monitor records all instances of an activity -- for example, a job try that failed is recorded just as a job try that succeeded is recorded. On the other hand, NBAR is interested in the outcome of the activity -- and will record only one instance of the job if the job succeeds, no matter how many tries it took, as long as the retries take place within the same instance of the scheduler.

Activity Monitor looks only for jobs that are retried within the same instance of the scheduler, whereas the NBAR reports look to see if a job has been successful.

By default the scheduler is restarted every ten minutes, but some large sites keep the scheduler running all the time, if they have a full schedule. This potentially creates a confusing report with lots of retries.

Viewing the Management Reports

6

This chapter provides details on each of the Management reports available with NetBackup Advanced Reporter (NBAR).

The Management reports generated by NBAR provide summary information about an organization's NetBackup backup and restore activities, catalog usage, and operating errors.

These reports allow you to determine whether service commitments are being met, if the existing infrastructure is meeting the backup needs of the organization, and if the disk space allocated for the VERITAS NetBackup catalogs is sufficient.

Each Management report consolidates Netbackup information from the last 28 day period by default. You can adjust the report's interval if you choose.

User Backup jobs and Archive jobs are not included in the management reports, although they are shown by the NetBackup Activity Monitor and collected in the NBAR database.

Viewing the Full Backups Reports

The **Full Backups** folder contains four Management reports for all full backup jobs performed in the last 28 day period.

- ◆ *Job Summary (Full Job Completion Summary Report)*
- ◆ *Data Volumes (Full Backup Data Volumes Report)*
- ◆ *File Volumes (Full Backup File Volumes Report)*
- ◆ *Durations (Full Backup Job Durations Report)*



Full Job Completion Summary Report

This report provides an overview of the full backup jobs for each day within the reporting period. The report displays two charts. The upper chart displays completely successful, partially successful, and failed jobs for each day. The lower chart displays the percent of jobs that failed for each backup.

This report allows you to quickly identify patterns and problem areas in your full backup activities.

How to Access this Report

Choose the **Job Summary** option from the **Full Backups** folder.

Report Details

Each bar in the upper chart represents the number of full backup jobs for that date. The number of successful full backup jobs appears in green, partially successful backup jobs appear in yellow, and failed full backup jobs appear in red.

If you allow the cursor to hover over the bar for a particular day, a summary of the number of completely successful, partially successful, and failed jobs for that date appears in a popup window next to the cursor. Clicking the bar will display the *Job Details by Policy - Full Backups* report for the day selected.

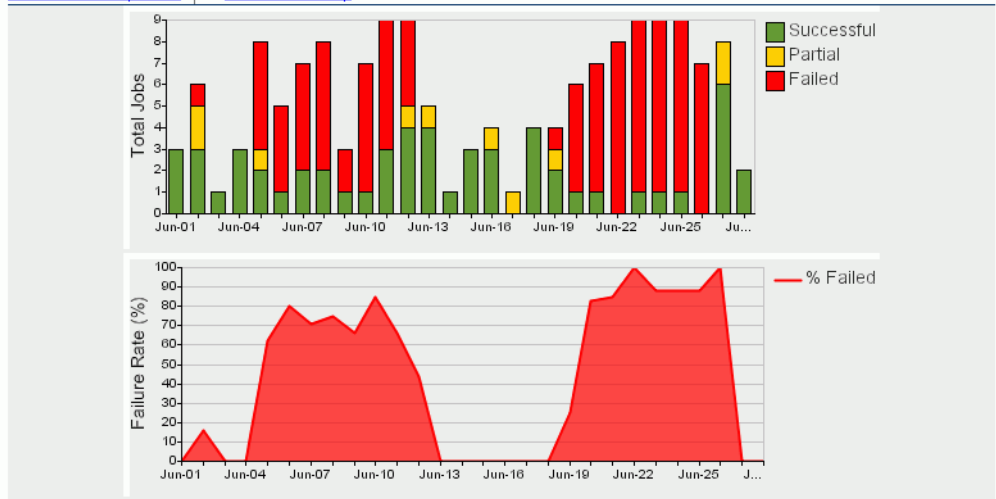
Details of this report include the number of bytes backed up and an error summary for each failed job. For more information, see the *Job Details by Policy Report*. Both of these reports display one entry per job ID. If a job had two retries, it will still only show up as one entry, as long as NetBackup retried the job using the same job ID.

The lower chart displays the failure rate for each day's backup. For more information, click on the edge of the area you are interested in to display a tooltip and the *Consolidated Error Log* for that day.

Full Job Completion Summary Report

 **Full Job Completion Summary** Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Full Backup Data Volumes Report

This report provides an overview of the total volume of data that were backed up for each day within the reporting period. By default, the reporting period is 28 days. This report allows you to look for trends in the amount of data being backed up.

How to Access this Report

Select the **Data Volumes** option from the **Full Backups** folder.

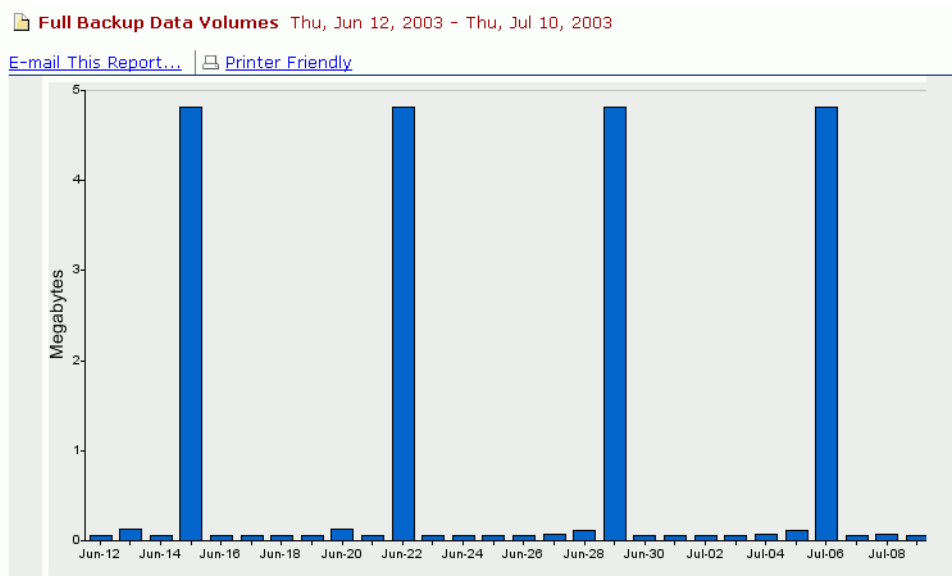
Report Details

Each bar represents the amount of data backed up for one day within the reporting period.

If you allow the cursor to hover over the bar for a particular day, a summary showing the amount of data backed up for that day appears in a popup window next to the cursor.

Each bar within this report is linked to a more detailed report for that day. When you click on a bar, the *Job Details by Policy Report* report appears displaying more information for the day selected.

Full Backup Data Volumes Report



Full Backup File Volumes Report

This report provides a visual display of the total number of files that were backed up for each day within the reporting period. The default reporting period is the 28 days up to and including today's date.

How to Access this Report

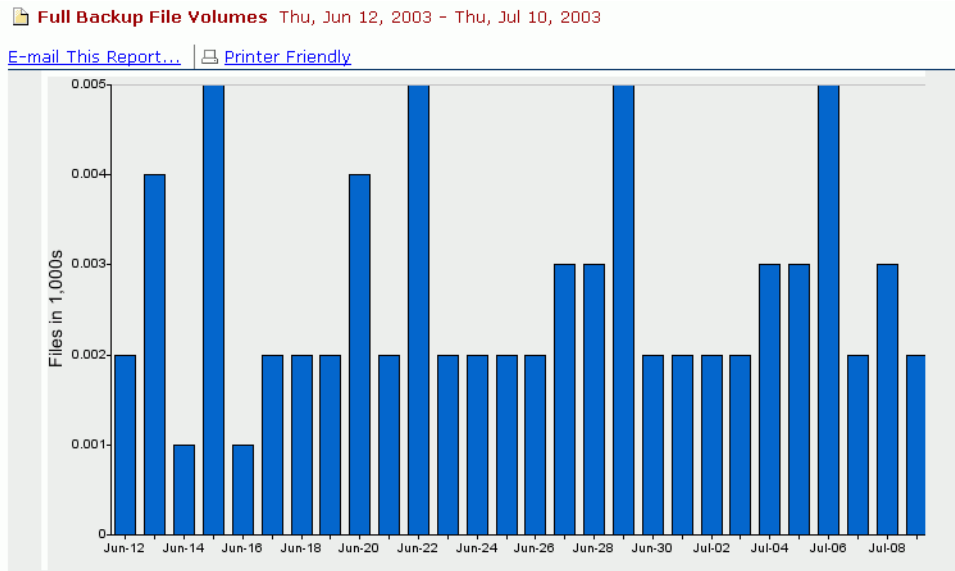
Select the **File Volumes** option from the **Full Backups** folder.

Report Details

Each bar in this report provides details on the total number of files grouped in 1,000's that were backed up for each date within the reporting period.

If you allow the cursor to hover over a bar, the number of files backed up for that date will appear in a popup window next to cursor. When you click on any bar, the *Job Details by Policy Report* appears displaying detailed information for the day selected.

Full Backup File Volumes Report



Full Backup Job Durations Report

This report provides a visual display of the total amount of time per day that was committed to full backup for each day within the reporting period. It provides an indication of the number of hours per day NetBackup had an active policy.

How to Access this Report

Select the **Durations** option from the **Full Backups** folder.

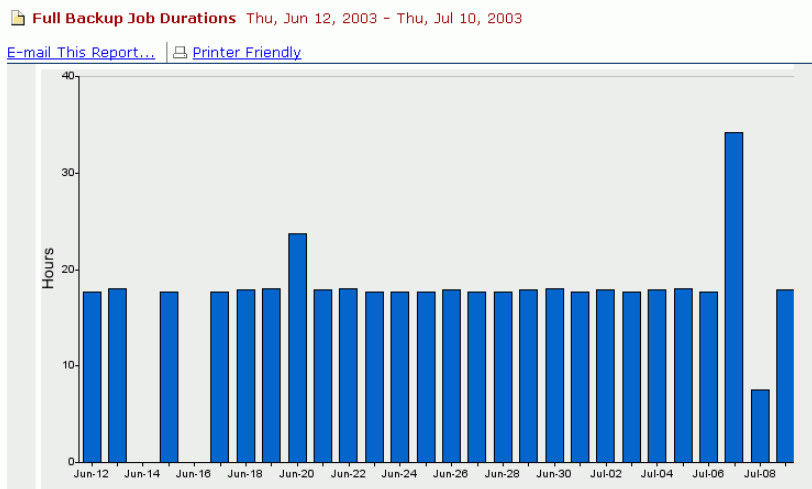
Report Details

Each bar in this report provides details on the total amount of time in hours during which full backup jobs were active each day within the reporting period.

Note Job duration totals are calculated based on the total time the policy was active, that is, from the start of the first job within the reporting period to the end of the last job within the reporting period. For example, if the first job begins 01/01/2001 at 10 a.m. and lasts for 5 minutes, and the last job begins 01/01/2001 at 11 a.m. and lasts 5 minutes, the total job duration reported will be from 10 a.m. to 11:05 a.m., a total of 1 hours and 5 minutes, even though the actual backup time totaled 10 minutes.

If you allow the cursor to hover over the bar for a particular date, the date and the number of hours and minutes a policy was active appears in a pop-up window next to the cursor. Click on any bar to display the *Job Details by Policy Report* for more information.

Full Backup Job Durations Report



Viewing the Incremental Backups Reports

The **Incremental Backups** folder contains four *Management* reports for all incremental backup jobs performed in the last 28 day period.

- ◆ *Job Summary (Incremental Job Completion Summary Report)*
- ◆ *Data Volumes (Incremental Backup Data Volumes Report)*
- ◆ *File Volumes (Incremental Backup File Volumes Report)*
- ◆ *Durations (Incremental Backup Job Durations Report)*

Incremental Job Completion Summary Report

This report provides an overview of the incremental backup jobs for each day within the reporting period. This report includes both cumulative-incremental backups and differential-incremental backups. It differentiates between completely successful, partially successful, and failed jobs. You can quickly identify problem areas and patterns in your incremental backups.

How to Access this Report

Choose **Job Summary** from the **Incremental Backups** folder.

Report Details

Each bar in the upper chart represents the number of incremental backup jobs for that date. The number of successful incremental backup jobs appears in green, yellow indicates the number of incremental backup jobs that were partially successful, and failed incremental backup jobs appear in red.

If you allow the cursor to hover over the bar for a particular day, a summary of the number of completely successful, partially successful, and failed jobs for that date appears in a popup window next to the cursor.

Click on a bar to display the *Job Details by Policy - Incremental Backups* report for the day selected. Details include the number of bytes backed up, and an error summary for each failed job. For more information, see the *Job Details by Policy Report*.

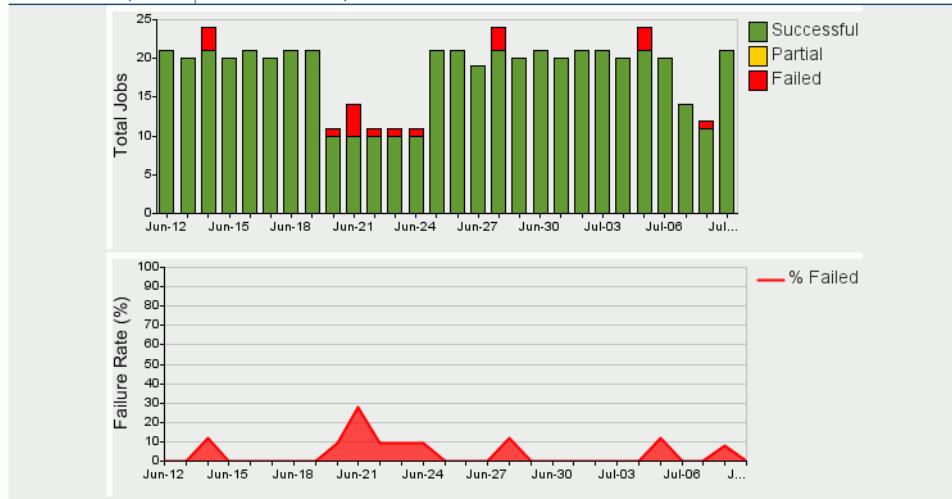
The lower chart displays the failure rate for each day's backups. Click on the edge of the area you are interested in to display a tooltip and the *Consolidated Error Log* for that day. For more information, see the *Consolidated Error Log*.



Incremental Job Completion Summary Report

 **Incremental Job Completion Summary** Thu, Jun 12, 2003 - Thu, Jul 10, 2003

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Incremental Backup Data Volumes Report

This report provides an overview of the total amount of data that was backed up during incremental backup jobs for each day within the reporting period. You can quickly identify trends in the amount of data backed up in incremental backup jobs each day.

How to Access this Report

Choose **Data Volumes** from the **Incremental Backups** folder.

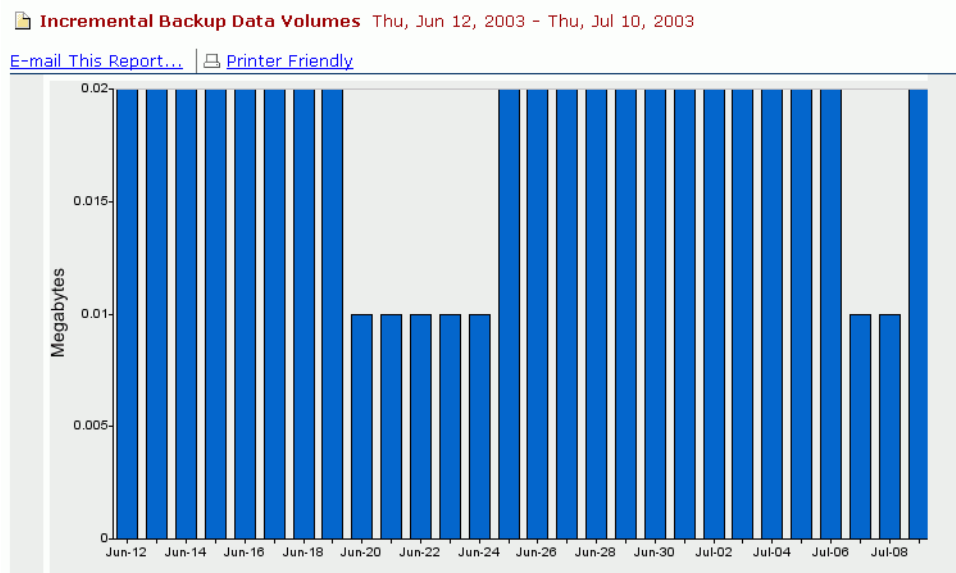
Report Details

Each bar represents the amount of data backed up for one day within the reporting period.

If you allow the cursor to hover over the bar for a particular day, a summary showing the amount of data backed up for that day appears in a popup window next to the cursor.

Each bar within this report is linked to a more detailed report for that day. When you click on a bar, the *Job Details by Policy - Incremental Backups* report appears displaying more information for the day selected. See the *Job Details by Policy Report*.

Incremental Backup Data Volumes Report



Incremental Backup File Volumes Report

This report provides a visual display of the total number of files that were backed up for each day within the reporting period for all incremental backups. You can quickly identify trends in the number of files backed up.

How to Access this Report

Choose **File Volumes** from the **Incremental Backups** folder.

Report Details

Each bar in this report provides details on the total number of files, grouped in 1,000's, that were backed up for each day within the reporting period for all incremental backups.

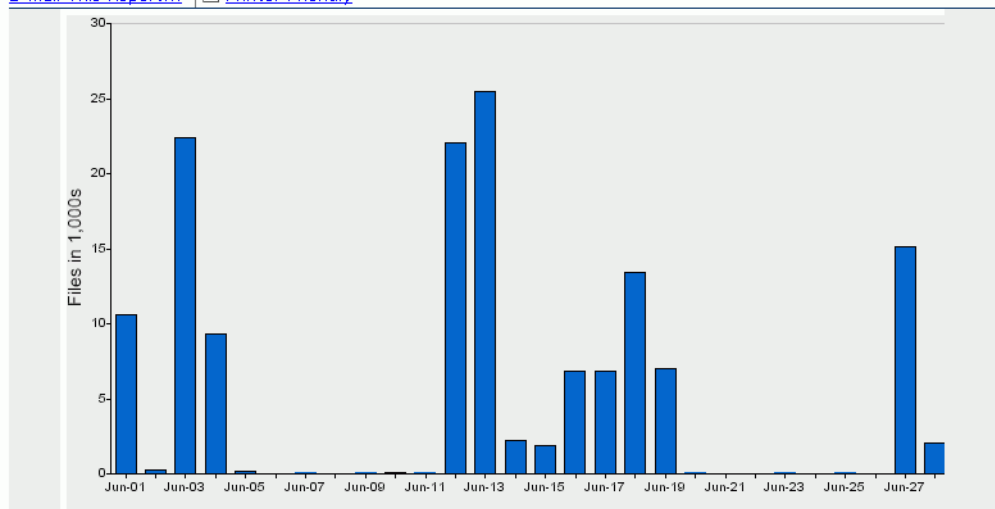
If you use the cursor to hover over a bar, the total number of files backed up will display.

Each bar within this report represents one day in the time period selected. Clicking on any bar links to the *Job Details by Policy* report displaying Incremental Data information for that day. See the *Job Details by Policy Report*.

Incremental Backup File Volumes Report

 **Incremental Backup File Volumes** Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Incremental Backup Job Durations Report

This report provides a visual display of the total amount of time in each day that was committed to incremental backup.

You can quickly estimate how many hours per day NetBackup had an active policy.

How to Access this Report

Choose **Durations** from the **Incremental Backups** folder.

Report details

Each bar in this report provides details on the total amount of time during which incremental backup job policies were active each day within the reporting period.

If you allow the cursor to hover over the bar for a particular date, the date and the number of hours and minutes a policy was active appears in a popup window next to the cursor.

Each bar within this report represents one day in the time period selected. Clicking on any bar links to the *Job Details by Policy - Incremental Backups* report. For more information, see the *Job Details by Policy Report*.

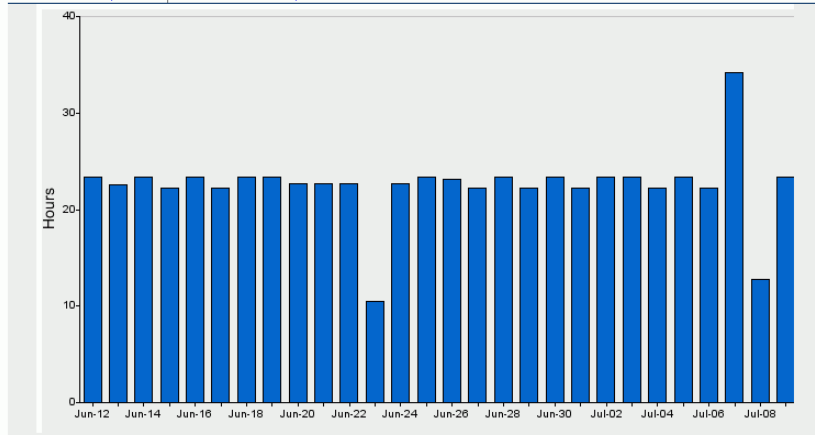
Note Job duration totals are calculated based on the total time the policy was active, that is, from the start of the first job within the reporting period, to the end of the last job within the reporting period. For example, if the first job begins 01/01/2000 at 10 a.m. and lasts for 5 minutes, and the last job begins 01/01/2000 at 11 a.m. and lasts 5 minutes, the total job duration reported will be from 10 a.m. to 11:05 a.m., a total of 1 hour and 5 minutes, even though the actual backup time totaled 10 minutes.



Incremental Backup Job Durations Report

 **Incremental Backup Job Durations** Thu, Jun 12, 2003 - Thu, Jul 10, 2003

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Viewing the Restore Jobs Reports

The **Restore Jobs** folder contains two *Management* reports that provide details on the restore jobs performed in the last 28 day period.

- ◆ *Job Summary (Restore Job Summary Report)*
- ◆ *Data Volumes (Restore Data Volumes Report)*

Restore Job Summary Report

This report provides an overview of all the jobs that were restored to a client machine within the time period selected. The default reporting period is the 28 days preceding today's date.

You can quickly determine how often restore jobs are being performed and calculate their rate of success.

How to Access this Report

This report is generated by:

- ◆ Choosing **Job Summary** from the **Restore Jobs** folder.
- ◆ Clicking on the **Restore Jobs** section sub-title in the *Site Summary* report (data displayed is for all restore jobs performed on the date on the *Site Summary* report).

Report Details

Each bar in this report provides details on the total number of restore jobs for each day in the reporting period. The number of successful restore jobs appears in green, yellow indicates the number of restore jobs that were partially successful, and failed restore jobs appear in red.

If you allow the cursor to hover over the bar for a particular day, the number of completely successful, partially successful, and failed jobs for that date appears in a popup window next to the cursor.

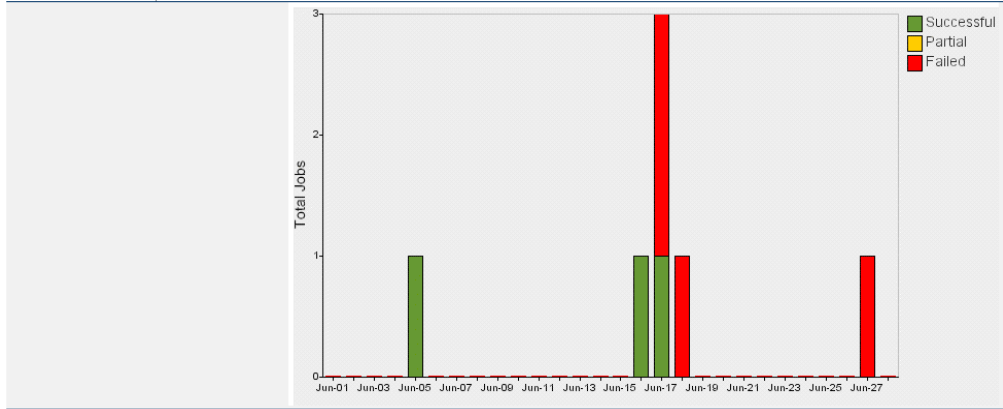
Click on any bar to link to the *Restore Details by Client* report displaying the amount of information restored for the day selected. For more information, see the *Restore Details by Client Report*.



Restore Job Summary Report

 **Restore Job Summary** Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Restore Data Volumes Report

This report provides an overview of all the data volumes that were restored for each day within the reporting period.

You can quickly identify trends in the amount of data restored.

How to Access this Report

Choose **Data Volumes** from the **Restore Jobs** folder.

Report Details

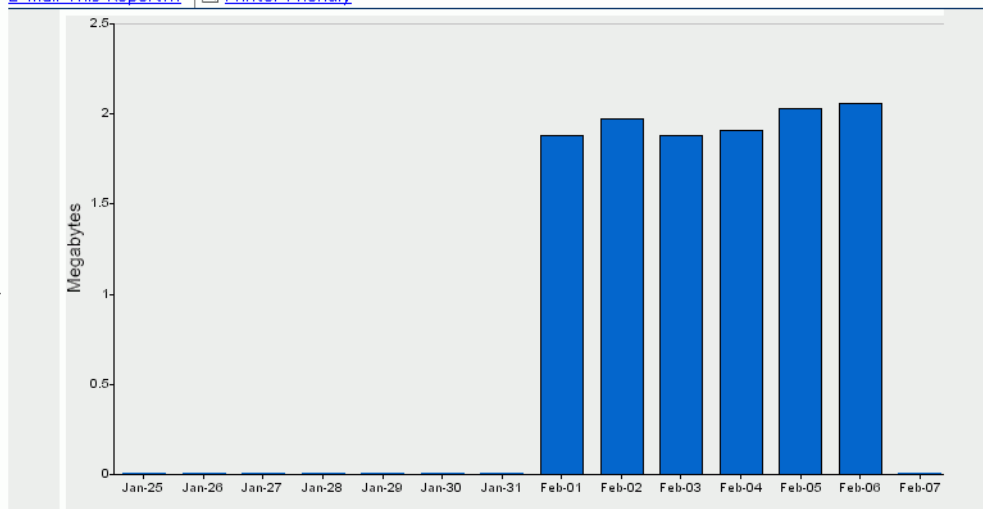
Each bar in this report provides details on the total size of all images read (to complete the restore jobs for that day) within the reporting period.

Each bar within this report represents one day in the time period selected. Click on any bar to link to the *Restore Details by Client Report* to display information on the data restored for the day selected.

Restore Data Volumes Report

 **Restore Data Volumes** Sat, Jan 25, 2003 - Sat, Feb 8, 2003

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Viewing the Catalog Usage Reports

The **Catalog Usage** folder contains two *Management* reports:

- ◆ *Disk Space (Disk Space Report)*
- ◆ *Catalog Files (Number of Catalog Files Report)*

Each of these reports provides details on the VERITAS NetBackup Master server's catalog for the last 28 day period. Each catalog is a log containing the information on every backup job that has not yet expired. (When backup jobs expire, VERITAS NetBackup automatically removes the backup job from the catalog.) It is important that the servers do not run out of the disk space allotted to these catalogs. These reports allow you to monitor how much disk space is currently being used so you can determine how much is still available.

Disk Space Report

This report displays the total amount of disk space currently in use by the VERITAS NetBackup servers' catalog files.

You can conveniently keep track of the amount of disk space being used by the catalog files, and you will have a chance to increase disk space before the catalog files exceed the currently allotted amount of space.

How to Access this Report

Choose **Disk Space** from the **Catalog Usage** folder.

Report Details

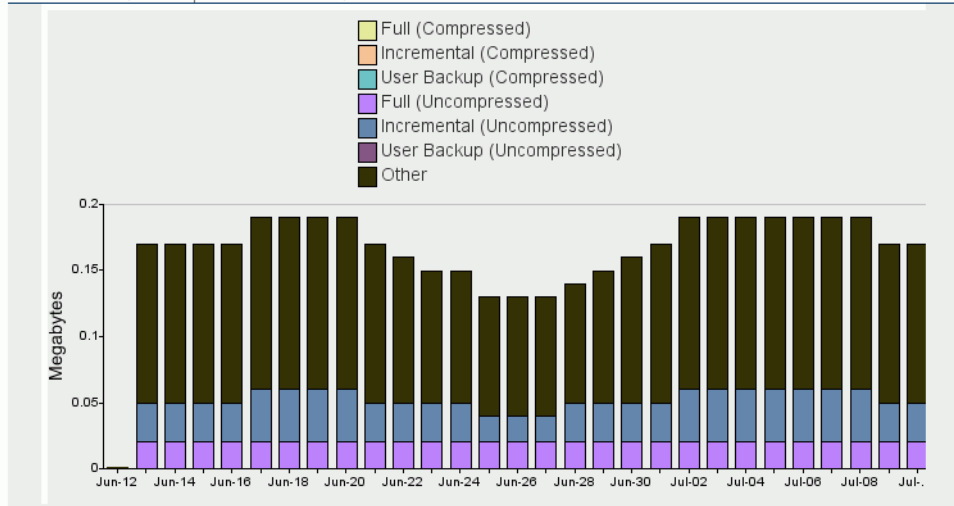
Each bar in this report provides details on the total disk space being used (vertical axis) for each day (horizontal axis) within the reporting period. The bar is divided into colors based on the type of backup data reflected.

If you allow the cursor to hover over the bar for a particular day, a summary of the amount of each type of data stored on the disk for that day is displayed.

Disk Space Report

 **Disk Space** Thu, Jun 12, 2003 - Thu, Jul 10, 2003

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Number of Catalog Files Report

This report displays the total number of catalog (.f) files that are currently in the catalog on the NetBackup master servers.

How to Access this Report

The *Number of Catalog Files* report is generated by selecting the **Catalog Files** option from the **Catalog Usage** folder.

Report Details

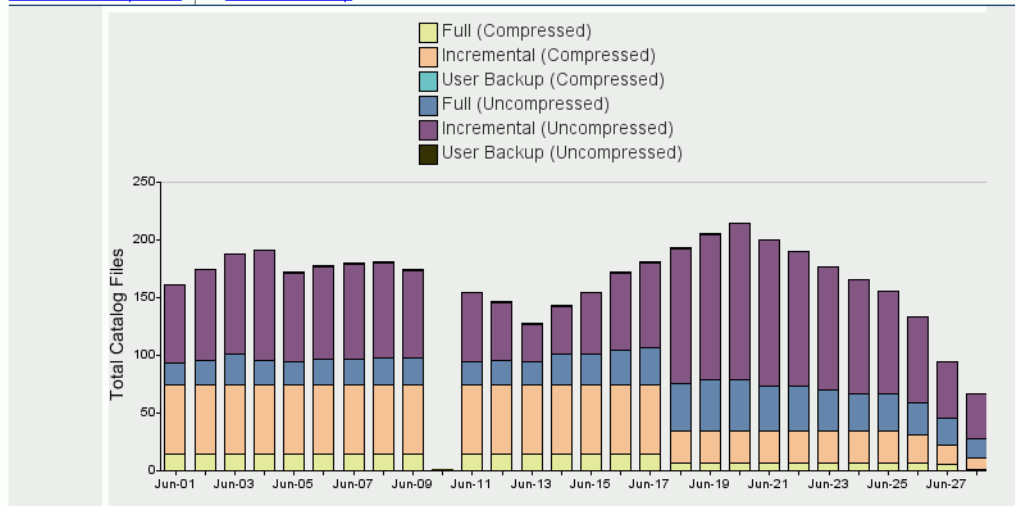
Each bar in this report provides details on the total number of catalog files (vertical axis) backed up for each day (horizontal axis) within the reporting period. Refer to the key above the graph for the type of backup represented by each color.

If you allow the cursor to hover over the bar for a particular day, a summary of the number of catalog files of each type of data stored on the disk for that day is displayed.

Number of Catalog Files Report

 **Number of Catalog Files** Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Viewing the Error Logs

The **Error Logs** folder contains two *Management* reports. Each of these reports provides a summary of the VERITAS NetBackup's Error Log catalog for the last 28 day period, or another reporting interval of your choice.

- ◆ *Error Log Summary (Error Log Summary Report)*
- ◆ *Client Errors (Error Log Summary by Client Report)*

Error Log Summary Report

This report displays a list of all the VERITAS NetBackup errors that occurred in the reporting period arranged by media server.

You can easily identify patterns, trouble areas, and common problems with particular servers.

How to Access this Report

Choose **Error Log Summary** from the **Error Logs** folder.

Report Details

This report lists how many times an error has occurred on a server, and provides a brief description of the error.

Click on the label for any field to sort entries by that field.

This report totals the number of errors, including retries. For example, if you had five job IDs that each had two retries, and all produced the error 57, the report would represent this as one entry for error code 57 with 10 occurrences.



Error Log Summary Report

 **Error Log Summary** Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Media Server	Status	Occurrences	Description
spark.storageewiz.com	96	107	unable to allocate new media for backup, storage unit has none available
spark.storageewiz.com	196	4	client backup was not attempted because backup window closed
spark.storageewiz.com	191	4	no images were successfully processed
spark.storageewiz.com	5	3	the restore failed to recover the requested files
spark.storageewiz.com	50	1	client process aborted
spark.storageewiz.com	246	1	no active policies in the configuration database are of the correct client type
spark.storageewiz.com	198	1	no active policies contain schedules of the requested type for this client
spark.storageewiz.com	219	1	the required storage unit is unavailable
spark.storageewiz.com	97	1	requested media id is in use, cannot process request
spark.storageewiz.com	150	1	termination requested by administrator

Column Heading	Description
Media Server	The fully-qualified name of a media server.
Status	The status code for the error. Click any entry in this field to access the <i>NetBackup Troubleshooting Guide</i> for more information.
Occurrences	The number of times this error happened on this media server during the reporting interval. Click any entry in this field to access the <i>Summary of Status Codes for <client> Report</i> for more information.
Description	A brief explanation of the error.

Error Log Summary by Client Report

This report displays a list of all the VERITAS NetBackup errors organized by client. You can easily identify patterns, trouble areas, and common problems with your backup activities.

How to Access this Report

Choose **Error Log Summary by Client** from the **Error Logs** folder.

Report Details

Click on the label for any field to sort entries by that field.

This report summarizes each client by job ID. If five jobs ran on five clients, and each job had two retries that ended in error 57, the report will show two retries for each client, and five entries with a status 57.



Error Log Summary by Client Report

 **Error Log Summary by Client** Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Client	Status	Occurrences	Description
mars.bkgrp.storagewiz.com	5	1	the restore failed to recover the requested files
mars.storagewiz.com	246	1	no active policies in the configuration database are of the correct client type
mars.storagewiz.com	198	1	no active policies contain schedules of the requested type for this client
mars.storagewiz.com	191	1	no images were successfully processed
spark.storagewiz.com	96	107	unable to allocate new media for backup, storage unit has none available
spark.storagewiz.com	196	4	client backup was not attempted because backup window closed
spark.storagewiz.com	191	3	no images were successfully processed
spark.storagewiz.com	5	2	the restore failed to recover the requested files
spark.storagewiz.com	50	1	client process aborted
spark.storagewiz.com	219	1	the required storage unit is unavailable
spark.storagewiz.com	97	1	requested media id is in use, cannot process request
spark.storagewiz.com	150	1	termination requested by administrator

Column Heading	Description
Client	The fully-qualified name of a NetBackup client. Click any entry in the Client field to access the <i>Summary of Status Codes for <client> Report</i> for more information.
Status	The status code for the error. Click any entry in this field to access the <i>NetBackup Troubleshooting Guide</i> for more information.
Occurrences	The number of times this error happened on this media server during the reporting interval. Click any entry in this field to access the <i>Summary of Status Code <number> for <client> Report</i> for more information.
Description	A brief explanation of the error.

Viewing the Administrative Reports

7

This chapter provides details on each of the Administrative reports available with NetBackup Advanced Reporter (NBAR).

The Administrative reports generated by NBAR provide detailed information about an organization's storage resources. This information details whether daily backups are being performed successfully, and if not, where the problems are; and are devices operating correctly with no undetected problems. These reports allow the Administrative staff to quickly review NetBackup activities without resorting to culling information from the lengthy NetBackup Error Logs, thus allowing the Administrators to be more effective and responsive to their user's needs.

Each Administrative report consolidates the backup information from the previous day. The Administrative reports include:

- ◆ *Site Summary (Site Summary Report),*
- ◆ *Site Details (Site Details Job List),*
- ◆ *Job Details by Policy (Job Details by Policy Report),*
- ◆ *Error Log (Consolidated Error Log),*
- ◆ *Media Errors (Media Errors Report),*
- ◆ *Restore Details (Restore Details by Client Report),*
- ◆ *Host Listing (Hosts under NetBackup Management Report),*
- ◆ *Clients at Risk (Clients at Risk Report)*

Site Summary Report

The *Site Summary* report presents a summary of NetBackup jobs, error log data, and a summary of the health of the backup system at the time data was last collected. The *Site Summary* report allows you to quickly identify problem areas or patterns in the displayed day's backups.



How to Access this Report

- ◆ Select the **Site Summary** option from the **Administrative** folder in the report tree. Data is displayed for all backup jobs performed on the previous day.

Report Details

The *Site Summary* report provides information about each type of NetBackup job, a summary of errors that occurred, and the overall health of the backup environment. Click the NetBackup Jobs section sub-title to access the *Site Details Job List*.

NetBackup Jobs

Provides summary statistics on the total number of jobs started in the previous 24 hours. The data in this section consists of: total successful, partial and failed jobs; total amount of data; total number of files. Each job type listed drills down to display all the jobs of the corresponding job type that ran since the last run of the data loader. From any non-zero total under each job result (successful, partial, etc.) drill down to show details for each job type. See the Job List Reports

Note The number of failed jobs recorded under **NetBackup Jobs** may not be the same as the number in the *Error Log Summary*. This is because **NetBackup Jobs** only records unsuccessful jobs, while the *Error Log Summary* records every unsuccessful attempt. Therefore, if a job is attempted twice and fails twice, there will be one entry under **NetBackup Jobs**, and two under the *Error Log Summary*.

Column Heading	Description
Job Type	The type of job scheduled (Backup, Restore, Archive, etc.).
Successful	The number of successful jobs. Drill down to the <i>Successful Backup Job List</i> from each entry.
Partial	The number of partially successful jobs.
Failed	The number of failed jobs.
Total	The total number of each type of job.
Total Data	The total amount of information backed up.
Total Files	The total number of files backed up.

Error Log Summary

Gives a detailed summary of the NetBackup Error Log for the previous 24 hours. The error types are summarized in five broad categories.

Click on the Error Log Summary section sub-title to access the *Error Log Summary Report*.

Column Heading	Description
Connection Failures	The number of times a connection failed in this 24 hour period.
Backup Window Closed	The number of times a backup window closed before a job was completed.
Hit Skipped File Limit	The number of times the Skipped File Limit was reached.
Skipped or Aborted Jobs	The number of times a job was skipped or aborted.
Other Errors	The total number of other types of errors that occurred in this period.

Health Monitors

Covers media status, catalog size and last successful backup, clients at risk, and downed drives.

Health Monitors

Health monitor information is not available for the time period and reference date you have selected. This section only displays current snapshot information, that is summary values that indicate the health of your backup environment at the time the data loader last executed.

If you choose to change the timeframe for this report, this message will appear in the Health Monitors area. This is because the data displayed here only reflects the state of the system the last time the loader ran.

Column Heading	Description
Total Assigned Media	The total number of assigned media the last time the loader ran. This entry links to the <i>Assigned Media List</i> .
Total Frozen and Suspended Media	The total number of frozen and suspended media the last time the loader ran.
Catalog Size	The size of the catalog in megabytes the last time the loader ran. This entry links to the <i>Disk Space Report</i> .



Column Heading	Description
Last Successful Catalog Backup	The date the catalog was last backed up successfully.
Total Clients at Risk	The number of clients considered at risk the last time the loader ran. This entry links to the <i>Clients at Risk Report</i> .
Total Downed Drives	The number of drives that were down the last time the loader ran.

Site Summary Report

 **Site Summary** Sat, Jun 28, 2003 - Sun, Jun 29, 2003

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NetBackup Jobs

Job Type	Successful	Partial	Failed	Total
Backup	13	1	0	14
Restore	0	0	0	0
Archive	0	0	0	0
Vault	1	1	0	2
Duplicate	1	0	0	1
Catalog Backup	13	0	0	13
Import	0	0	0	0
Verify	1	0	0	1
Unknown	0	0	0	0
Total	29	2	0	31
Total data Processed:	418.63 Mbytes			
Total files Processed:	22,210			

Error Log Summary

Connection failures	0
Backup window closed	0
Hit skipped file limit	0
Skipped or aborted jobs	0
Other errors	0

Health Monitors

Total assigned media	4
Total frozen + suspended media	1
Catalog size (Mbytes)	74.1
Last successful catalog backup	2003-06-30 04:24:58.0
Total clients at risk	9
Total downed drives	0

Job List Reports

These reports are drilled down to from the *Site Summary* report.

There are two types of drill down reports accessible from the *Site Summary* report.







- ◆ If you click on a Job Type, you will see a report that contains the same information as the *Site Details Job List*, for a particular job type. Below are examples of this report for Vault Jobs.

Vault Job List

 **Vault Job List** Sun, Jun 15, 2003 - Mon, Jun 16, 2003

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Properties	Job ID	Job Type	Client	Media Server	Policy	Schedule	Exit Status	Start Time	End Time	Duration	KB Processed	Files	Throughput (KB/sec)
	4818	Vault	spark.vxindia.veritas.com	spark.vxindia.veritas.com	Duplication	daily		2003-06-15 16:01:15	2003-06-15 16:04:06	00:02:51	0	0	0
	4836	Vault	spark.vxindia.veritas.com	spark.vxindia.veritas.com	vault_catalog	daily		2003-06-16 04:01:16	2003-06-16 04:01:57	00:00:41	0	0	0

- ◆ If you click on an entry under Successful, Partial, Failed, or Total for one of these outcome categories, you will see a report that contains the same information as the *Site Details Job List*, for a particular category. Below are examples of this report for Partial Vault Jobs.

Partial Vault Job List

 **Partially Successful Vault Job List** Sun, Jun 15, 2003 - Mon, Jun 16, 2003

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Properties	Job ID	Job Type	Client	Media Server	Policy	Schedule	Exit Status	Start Time	End Time	Duration	KB Processed	Files	Throughput (KB/sec)
	4836	Vault	spark.vxindia.veritas.com	spark.vxindia.veritas.com	vault_catalog	daily		2003-06-16 04:01:16	2003-06-16 04:01:57	00:00:41	0	0	0



Site Details Job List

The *Site Details Job List* provides details on all of the jobs that ran in the last 24 hour period. The jobs in this report match the jobs displayed by the NetBackup Activity Monitor.

How to Access this Report

- ◆ Select the **Site Details Job List** option from the **Administrative** folder in the report tree. Data is displayed for all backup jobs performed on the previous day.

Report Details

By default, data is displayed for all backup jobs scheduled for the previous day.

Column Heading	Description
Properties	Click this icon to display Job Properties for this report entry.
JobID	The job number NetBackup assigned to this job.
Job Type	The type of backup job (Full, Catalog, etc.)
Client	The client for which the job was run.
Media Server	The NetBackup media server that executed the job.
Policy	The backup policy associated with this job.
Schedule	The schedule associated with this job.
Exit Status	The numeric code which indicates the disposition of the job. This entry links to the <i>NetBackup Troubleshooting Guide</i> .
Start Time	The time of day the job began.
End Time	The time of day the job completed.
Duration	The length of time the job was active.
KB Processed	The number of kilobytes of data backed up by the job.
Files	The number of files backed up by the job.
Throughput (KB/sec)	The average speed with which data was transferred for this job.


Note The throughput values displayed in this report may not match the throughput values displayed by the Activity Monitor. The Activity Monitor measures job duration as the time the job is active, while NBAR measures job duration only while the job is being written to tape. This difference affects throughput calculations.

Click on any entry in the **Exit Status** field to access the *NetBackup Troubleshooting Guide*. For more information, see the *NetBackup Troubleshooting Guide*.

Site Details Job List

 Site Details Job List Thu, Jun 12, 2003 - Fri, Jun 13, 2003

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Properties	Job ID	Job Type	Client	Media Server	Policy	Schedule	Exit Status	Start Time	End Time	Duration	KB Processed	Files	Throughput (KB/sec)
	2769	Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com	Imp_Docs	Incr_hourly		2003-06-12 07:37:51	2003-06-12 07:38:40	00:00:49	1	0	1,000
	2770	Catalog Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com				2003-06-12 07:39:00	2003-06-12 07:39:25	00:00:25	0	0	0
	2771	Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com	Imp_Docs	Incr_hourly		2003-06-12 08:47:51	2003-06-12 08:48:39	00:00:48	1	0	1,000
	2772	Catalog Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com				2003-06-12 08:49:01	2003-06-12 08:49:25	00:00:24	0	0	0
	2773	Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com	Imp_Docs	Incr_hourly		2003-06-12 09:57:50	2003-06-12 09:58:39	00:00:49	1	0	1,000
	2774	Catalog Backup	shivaji.vxindia.veritas.com	shivaji.vxindia.veritas.com				2003-06-12 09:59:02	2003-06-12 09:59:25	00:00:23	0	0	0



Job Details by Policy Report

The *Job Details by Policy* report provides details on the jobs scheduled to run for specific policies. The report allows you to view summary information on each policy that had a backup run the previous day. You can view this report for all jobs, or for specific job types. The report on specific job types is called the *Job Details for Policy* report.

How to Access this Report

There are several ways to access this report:

- ◆ Select the **Job Details by Policy** option from the **Administrative** folder in the report tree. Data is displayed for all backup jobs performed on the previous day.
- ◆ Click on any bar in the *Full Backups*, *Incremental Backups*, or *Restore Job* reports in the Management category. Data displayed is for that type of job, performed in the specified 24 hour period.

Report Details

NBAR considers the start time for the policy to be the beginning of the first *successful* job run for each policy. You may see job start times within each policy that are prior to the start time for the policy listed in the **Start Time** column of the report if the first jobs run were unsuccessful.

In addition, the **Total Jobs** field reflects the number of *successful* jobs --- it does not include the number of times NetBackup attempted unsuccessfully to run a job.

This report may show multiple entries for each policy name/schedule name pair if a change to the Netbackup policy definition occurs during the report's timeframe. Jobs which were run with a policy definition that has become outdated will have the word 'retired' appended to the policy name.

Each entry in the **Policy** field links to a more detailed report.

- ◆ Click on any entry in the **Policy** field to access the *Job Details for NetBackup Policy (Policy name)* report. For more information, see the *Job Details for Policy <policy name> Report*.

Job Details by Policy Report

Job Details by Policy - All Jobs Wed, Jul 9, 2003 - Thu, Jul 10, 2003

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Properties	Policy	Schedule	Start Time	Duration	Total Jobs	# Failed	Files	KBytes
Report Totals:					22	0	2	85
	Data	Incr_with_exclude_dates	2003-07-10 00:19:04	00:00:50	1	0	1	4
	Imp Docs (Modified)	Incr_hourly	2003-07-09 04:09:04	22:10:54	20	0	0	20
	Some Data	Incr	2003-07-09 06:29:03	00:01:22	1	0	1	61

Column Heading	Description
Property	Click to bring up the property sheet for this policy.
Policy	The name of the NetBackup policy.
Schedule	The schedule associated with this backup policy.
Start Time	The time the first job began.
Duration	The length of time between the start of the first job and the end of the last job.
Total Jobs	The number of jobs begun for this policy.
#Failed	The number of jobs for this policy that failed.
Files	The number of files backed up for this policy.
KBytes	The amount of data backed up for this policy.



Consolidated Error Log

This report displays a consolidated list, by server and client, of all the status codes, including errors that occurred, for the previous day's backup. By default, all details that appear on this report are taken from the previous day's NetBackup Error Log.

This report allows you to review the error log and identify what status codes occurred on which client.

How to Access this Report

- ◆ Click on the **Error Log** option in the **Administration** folder.

Report Details

This report lists details for each server and its policy, including all clients on the server. Details for each client include the status code, the date and time the event occurred, and a description of the event. Clicking on the label for any field allows you to sort report entries by that field.

This report lists one entry for each occurrence of a status code. If a job is retried with the same job ID, each retry will be listed on a separate line.

Each entry in the **Policy** and **Status** fields of this report are "Report Links" to more detailed reports.

- ◆ Click on any entry in the **Policy** field to access the *Job Details for (Policy Name)* report. See the *Job Details for Policy <policy name> Report*.
- ◆ Click on any entry in the **Status** field to access the *NetBackup Troubleshooting Guide*. For more information see the *NetBackup Troubleshooting Guide*.

Consolidated Error Log

 **Consolidated Error Log** Thu, Jun 12, 2003 - Fri, Jun 13, 2003

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Server	Policy	Client	Status	Time of Occurrence	Description
spark.storagewiz.com	HomeArea	spark.storagewiz.com	96	2003-06-12 13:01:07	unable to allocate new media for backup, storage unit has none available
spark.storagewiz.com	HomeArea	spark.storagewiz.com	96	2003-06-12 13:01:07	unable to allocate new media for backup, storage unit has none available
spark.storagewiz.com	mars	spark.storagewiz.com	196	2003-06-13 00:41:06	client backup was not attempted because backup window closed
spark.storagewiz.com	system	spark.storagewiz.com	96	2003-06-12 13:01:07	unable to allocate new media for backup, storage unit has none available
spark.storagewiz.com	system	spark.storagewiz.com	196	2003-06-13 01:11:05	client backup was not attempted because backup window closed

Column Heading	Description
Server	The name of the media server that executed the job.
Policy	The name of the backup policy. Each entry links to the <i>Job Details by Policy Report</i> for this particular policy.
Client	The name of the client for which the error occurred.
Status	The numerical status code associated with the error. Each entry links to the <i>NetBackup Troubleshooting Guide</i> .
Time of Occurrence	The time the error happened.
Description	A brief description of the error.



Media Errors Report

The *Media Errors* report provides a summary of all specific media-related problems that occurred during the selected reporting period. This report can help determine what media problems are occurring that are preventing NetBackup from completing the backup or restore activities.

How to Access this Report

Select the **Media Errors** option from the **Administrative** folder in the report tree.

Report Details

































This report lists each server that had media-related problems, including the actual client that had the media problem. Click on the label for any field to sort entries by that field. Click on any entry in the **NetBackup Error Code** field to access the *NetBackup Troubleshooting Guide*. For more information, see the *NetBackup Troubleshooting Guide*.

Column Heading	Description
JobID	The number NetBackup assigned to this job.
Client	The name of the client that had the problem.
Server	The name of the media server that executed the job.
Time of Occurrence	The time the error occurred.
Status	The numerical code assigned to the job status.
Description	A brief description of the status.

Media Errors Report

 **Media Errors Report** Mon, Apr 28, 2003 - Sun, Jun 29, 2003

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Properties	Job Id	Client	Server	Time of Occurrence	Status	Description
	 4072	kewada.storagewiz.com	spark.storagewiz.com	2003-05-03 04:22:37	52	timed out waiting for media manager to mount volume
	 4075	kewada.storagewiz.com	spark.storagewiz.com	2003-05-03 04:52:37	52	timed out waiting for media manager to mount volume
	 4085	spark.storagewiz.com	spark.storagewiz.com	2003-05-04 00:02:05	96	unable to allocate new media for backup, storage unit has none available
	 4086	spark.storagewiz.com	spark.storagewiz.com	2003-05-04 00:02:05	96	unable to allocate new media for backup, storage unit has none available
	 4089	spark.storagewiz.com	spark.storagewiz.com	2003-05-04 16:22:37	96	unable to allocate new media for backup, storage unit has none available
	 4090	spark.storagewiz.com	spark.storagewiz.com	2003-05-04 18:12:37	96	unable to allocate new media for backup, storage unit has none available
	 4091	spark.storagewiz.com	spark.storagewiz.com	2003-05-04 18:22:38	96	unable to allocate new media for backup, storage unit has none available
	 4092	spark.storagewiz.com	spark.storagewiz.com	2003-05-04 22:02:37	96	unable to allocate new media for backup, storage unit has none available
	 4093	spark.storagewiz.com	spark.storagewiz.com	2003-05-04 22:12:37	96	unable to allocate new media for backup, storage unit has none available
	 4095	spark.storagewiz.com	spark.storagewiz.com	2003-05-05 00:02:37	96	unable to allocate new media for backup, storage unit has none available
	 4097	spark.storagewiz.com	spark.storagewiz.com	2003-05-05 00:32:39	96	unable to allocate new media for backup, storage unit has none available
	 4101	spark.storagewiz.com	spark.storagewiz.com	2003-05-05 04:02:05	96	unable to allocate new media for backup, storage unit has none available
	 4102	spark.storagewiz.com	spark.storagewiz.com	2003-05-05 04:02:05	96	unable to allocate new media for backup, storage unit has none available
	 4103	spark.storagewiz.com	spark.storagewiz.com	2003-05-05 06:22:05	96	unable to allocate new media for backup, storage unit has none available
	 4112	spark.storagewiz.com	spark.storagewiz.com	2003-05-06 18:22:46	96	unable to allocate new media for backup, storage unit has none available
	 4113	spark.storagewiz.com	spark.storagewiz.com	2003-05-06 18:22:46	96	unable to allocate new media for backup, storage unit has none available



Restore Details by Client Report

The *Restore Details by Client* report provides details of all the restore jobs performed on the clients associated with the selected server. This information may help you identify a client who is performing a number of restore jobs and investigate the reason why.

How to Access this Report

This report is generated by:

- ◆ Selecting the **Restore Details** option from the **Administrative** folder in the console tree (Restore data is displayed for jobs performed on the previous day.),
- ◆ Clicking on any bar in the *Restore Job Summary* report in the **Management** folder, or the *Restore Data Volumes* report (data displayed is for all restore jobs performed on the specific day selected).

Report Details

This report lists the client's server where the files were restored; the date and time of the restoration; the duration of the job; and the size of the images read to complete the restore. Click on the label for any field to sort the entries by that field

Restore Details by Client Report

Restore Details By Client Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Properties	Job ID	Media Server	Client	Date	Duration	KBytes
	4842	spark.storagewiz.com	mars.bkgrp.storagewiz.com	2003-06-16 13:14:29	00:00:31	192
	4881	spark.storagewiz.com	mars.bkgrp.storagewiz.com	2003-06-17 11:58:29	00:01:46	15,232
	4912	spark.storagewiz.com	mars.bkgrp.storagewiz.com	2003-06-18 12:49:22	282:11:40	0
	4605	spark.storagewiz.com	spark.storagewiz.com	2003-06-05 13:58:20	00:01:07	256
	4877	spark.storagewiz.com	spark.storagewiz.com	2003-06-17 11:32:16	307:28:46	0
	4880	spark.storagewiz.com	spark.storagewiz.com	2003-06-17 11:56:42	307:04:20	0
	5103	spark.storagewiz.com	spark.storagewiz.com	2003-06-27 14:42:23	00:14:38	0

Column Heading

Description

Job ID	The ID for this job assigned by NetBackup.
Media Server	The name of the media server.
Client	The name of the client.

Column Heading	Description (continued)
Date	The date and time the files were restored.
Duration	The length of time the restore job took.
KBytes	The number of kilobytes that were read to complete the restore.



Hosts under NetBackup Management Report

This report is a listing of all known hosts under the NetBackup management. A Host is considered any computer that has been backed up by the NetBackup application, also called a *client*.

Note This report may contain a lot of data, depending on the number of computers that are backed up by NetBackup.

How to Access this Report

Select the **Host Listing** option from the **Administrative** folder.

Report Details

The *Hosts under NetBackup Management* report lists the name and IP address of each client, its domain and the type of machine.

Hosts under NetBackup Management Report

 **Hosts under NetBackup Management** Tue, Jul 22, 2003

[Customize...](#) | [E-mail This Report...](#) | [Printer Friendly](#)

Client Name	Domain	IP Address
aboli.storagewiz.com	storagewiz.com	10.212.12.53
indrayani.storagewiz.com	storagewiz.com	10.212.12.33
jhelum.storagewiz.com	storagewiz.com	10.212.10.172
kewada.storagewiz.com	storagewiz.com	10.212.12.55
mars.storagewiz.com	storagewiz.com	10.212.10.107
melghat.storagewiz.com	storagewiz.com	10.212.10.77
spark.storagewiz.com	storagewiz.com	10.212.10.88
Suchitra.storagewiz.com	storagewiz.com	10.212.10.131
venus.storagewiz.com	storagewiz.com	10.212.10.108

Column Heading	Description
Client Name	The name of the client or host that has been backed up.
Domain	The domain of the client.
IP Address	The IP address of the client.
Host Type	The client's machine type.

Clients at Risk Report

This report identifies clients at risk based on the success of previous backups. Backups are initiated by policies. If a policy fails for any client associated with it, this report assumes that the policy has failed for all clients.

For example, assume a policy is set up to run a full backup once a day, and the policy is used by six clients. On one of the clients, the full backup fails three days in a row. If risk level one is configured for a three-day failure threshold, the *Clients at Risk* report will report all clients associated with this policy as having a risk level of one.

You can set the number of days without a successful backup using the configuration utility. This number is the threshold determines at what point NBAR considers a policy to have a risk level of 1. Refer to the section “Syntax for the Configuration Utility” on page 54 in this manual for more details.

How to Access this Report

Select the **Clients at Risk** option from the **Administrative** folder.

Report Details




The *Clients at Risk* report is a columnar report identifying clients at four risk levels. Whether or not a client is considered ‘at risk’ is determined by the success of the policies the client is part of. Because the report’s data depends on backups that have already run, only clients with at least one backup will be included in this report.

The report is always generated for the current day because risk is calculated based on current conditions. To obtain detailed information about a particular client over the past month, click on an entry in the **Client Name** column to display the *Client Job History* report.

Note The *Client Job History* report displays the data collected for the month ending on the reference date. Examine this report to understand why a particular client is considered at risk currently.



The meaning of each column is detailed below. Click on the column heading to sort the report data by that column.

Column Heading	Description
Risk	<p>This column holds an overall risk rating icon. The clients listed are sorted on this column by default. The amount of risk is identified by the following icons.</p> <p> . This icon displays if the client has a 'yes' value in three or four risk levels.</p> <p> This icon displays if the client has a 'yes' value in three risk levels.</p> <p> This icon displays if the client has a 'yes' value in two risk levels</p> <p>No icon displays if the client has only one risk level problem.</p>
Client Name	<p>The name of the client machine. This entry links to the <i>Client Job History</i> report for this client. The report displays the last month of data for this client.</p> <p>The number of clients in this report appears on the Health Panel in the <i>Site Summary</i> report. Reciprocally, the Clients at Risk entry on the Health Panel links to this report.</p>
Policies at Risk Level 1	<p>A 'yes' in this column indicates that the client is part of policies that were not successfully backed up in some user-defined number of days. The default is three days. You can set this value through the configuration utility.</p> <p>Note This does not necessarily mean that this client was not successfully backed up as part of the policy.</p>
Policies at Risk Level 2	<p>A 'yes' in this column indicates the client is part of one or more policies for which the most recently run full backup was not successful.</p> <p>Note This does not necessarily mean that this client was not successfully backed up as part of the policy.</p>
Policies at Risk Level 3	<p>A 'yes' in this column indicates the client is part of one or more policies for which the most recently run full backup was partially successful.</p> <p>Note This does not necessarily mean that this client was not successfully backed up as part of the policy.</p>

Column Heading

Description (continued)

Policies at Risk Level 4

A 'yes' in this column indicates the client is part of one or more policies that use multistreaming, and that one or more of the streams failed.

Note This does not necessarily mean that this client was not successfully backed up as part of the policy.

Clients at Risk Report

📁 **Clients At Risk** Sun, Jun 29, 2003

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Risk	Client Name	Policies at Risk Level			
		1	2	3	4
✖	spark.storagewiz.com	yes	yes	yes	yes
⊖	kewada.storagewiz.com	yes	yes		yes
⊖	venus.storagewiz.com	yes		yes	yes
⊖	aboli.storagewiz.com	yes	yes		yes
⊖	indrayani.storagewiz.com	yes	yes		yes
⚠	jhelum.storagewiz.com	yes	yes		
⚠	Suchitra.storagewiz.com	yes	yes		
	mars.storagewiz.com	yes			
	melghat.storagewiz.com	yes			





Viewing the Media Reports

8

This chapter provides details on the *Media* reports available with NetBackup Advanced Reporter (NBAR).

The Media reports generated by NetBackup Advanced Reporter provide information related to NetBackup's use of media. They also provide assistance in managing expired media and offsite media candidates.

Each Media report provides information on the current state of the NetBackup media. Unlike other NBAR reports, no historical information is kept. The Media reports include:

- ◆ *Available Media (Available Media List),*
- ◆ *Assigned Media (Assigned Media List),*
- ◆ *Expired Media (Expired Media List),*
- ◆ *Offsite Media Candidates (Offsite Media Candidates),*
- ◆ *Full Tape Utilization (Full Tapes Utilization Report), and*
- ◆ *Ejected Media Status (Ejected Media Status Report)*



Available Media List

This report is a listing of all media available to the VERITAS Media Manager that are not assigned, that is, not in use by NetBackup. It does not include media that have been assigned but are expired.

Note This is not the same as the Media Lists report in NetBackup. That report includes media currently in use.

How to Access this Report

Select the **Available Media** option from the **Media** folder.


Report Details


The *Available Media List* displays the volume pool to which the media is assigned and the residence, or storage unit, the pool is assigned to. It also shows the media ID and type for each piece of media, and the amount of space which has been used. (If the media is available, the amount of space used should be zero.)

Click on the label for any field to sort the entries by that field.

Column Heading	Description
Volume Pool	The volume pool to which the media is assigned.
Residence	The storage unit to which the volume pool is assigned.
Media ID	The media ID of the media.
Media Type	The type of media.

Available Media List

 **Available Media List** Sun, Jun 29, 2003

[Customize...](#) | [E-mail This Report...](#) |  [Printer Friendly](#)

<u>Volume Pool</u>	<u>Residence</u>	<u>Media ID</u>	<u>Media Type</u>
Hugedata	Non-Robotic	A00003	4MM
NetBackup	Non-Robotic	A00001	4MM
NetBackup	Non-Robotic	V00001	4MM
NetBackup	spark.storageewiz.com	A00005	4MM
None	Non-Robotic	CLEAN1	4MM
None	Non-Robotic	EEEEEE	4MM
None	spark.storageewiz.com	A00004	4MM
Reserved	Non-Robotic	R00000	4MM
Reserved	Non-Robotic	R00001	4MM
Reserved	Non-Robotic	R00002	4MM
Reserved	Non-Robotic	R00003	4MM
Reserved	Non-Robotic	R00004	4MM
Standalone	Non-Robotic	S00001	4MM



Assigned Media List

This report is a listing of all media currently in use by NetBackup, including frozen media.

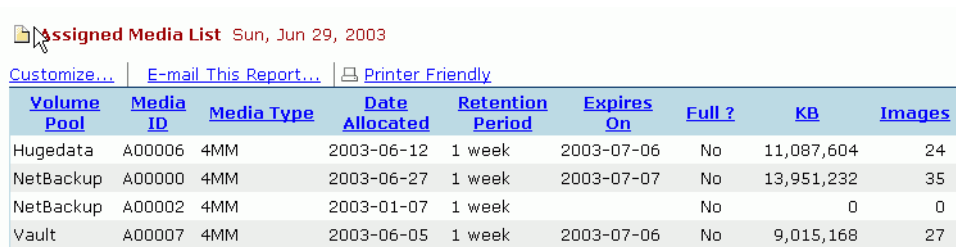
How to Access this Report

Select the **Assigned Media** option from the **Media** folder.

Report Details

The *Assigned Media List* displays the volume pool the media is assigned to, the media ID and media type. The date allocated is the date the media was first put into a volume pool. The retention level of the media is how long the images on this piece of media will be kept. Retention levels are configurable.

Assigned Media List



Volume Pool	Media ID	Media Type	Date Allocated	Retention Period	Expires On	Full ?	KB	Images
Huggedata	A00006	4MM	2003-06-12	1 week	2003-07-06	No	11,087,604	24
NetBackup	A00000	4MM	2003-06-27	1 week	2003-07-07	No	13,951,232	35
NetBackup	A00002	4MM	2003-01-07	1 week		No	0	0
Vault	A00007	4MM	2003-06-05	1 week	2003-07-06	No	9,015,168	27

Click the label for any field to sort the entries by that field.

Column Heading	Description
Volume Pool	The volume pool to which the piece of media is assigned.
Media ID	The media ID of the piece of media.
Media Type	The type of media.
Date Allocated	The date this piece of media was first put into a volume pool.
Retention Period	How long the images on this piece of media will be kept.
Expires On	The date the retention period ends.

Column Heading	Description
Full?	An indication of whether or not the piece of media is full.
KB	The number of kilobytes of information this piece of media holds.
Images	The number of images this piece of media holds.



Expired Media List

This report lists all media that will expire on or before the selected date.

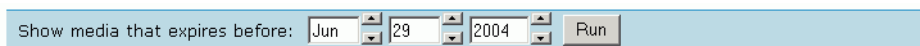
How to Access this Report

Select the **Expired Media List** option from the **Media** folder.

Report Details

When you first access this report, NBAR displays the **Media expires before** date selector.

Media Expires Before Date Selector



Show media that expires before: Jun 29 2004 Run

Using the **Media expires before** date selector, select the date requested. You can change the date using the arrow keys on your computer's keyboard. Highlight the month, day or year you require and use the up or down keys to access the desired date. When you have the expiration date that you need, click the **Run** button.

The *Expired Media List* report then displays the list of media that will expire on or before the selected date.

Expired Media List

 **Expired Media List** Wed, Jun 30, 2004

[Customize...](#) | [E-mail This Report...](#) |  [Printer Friendly](#)

Show media that expires before: Jun 29 2004

Volume Pool	Media ID	Media Type	Expires On
NetBackup	A00000	4MM	2003-07-07 04:22:15
NetBackup_d	A00000	4MM	2003-07-07 04:22:15
Hugedata	A00006	4MM	2003-07-06 20:02:15
Vault	A00007	4MM	2003-07-06 14:02:15

Column Heading	Description
Volume Pool	The volume pool to which this piece of media is assigned.
Media ID	The ID of this piece of media.
Media Type	The type of media.
Expires On	The date the retention period for this piece of media ends.



Offsite Media Candidates

This report used to be called the *Offsite Vaulting List*. It provides the user with the ability to list media that have been written to, in order to identify which media currently loaded in a storage device can be removed and stored off site. This procedure is called *vaulting*.

This report identifies tapes or other storage media either from a particular date range or within a particular policy or pool that have been written to and are candidates for off site storage.

In NBAR 5.1 the *Offsite Media Candidates* report displays images for archived and backup jobs.

Note The information displayed in this report is not related to the NetBackup Vault option. The NetBackup Vault option generates a separate set of reports.

How to Access this Report

Select the **Offsite Media Candidates** option from the **Media** folder.

Report Details

When you first access this report, NBAR displays the **Select from** selection criteria at the top of the *Offsite Media Candidates*.

Offsite Media Candidates Report Selection Criteria

Follow the steps below to select criteria for a particular list.

1. Choose either the **Pool** or **Policy** radio buttons.
2. In the **containing** field, enter the name of a pool or the name of a policy.

You can use a wildcard (_) to denote a single character as part of the name of either a pool or a policy. For example, **_site** will find all pools or policies that contain five letters and end in "site".

You can use a wildcard (%) to denote multiple characters as part of the name of either a pool or a policy. For example, **%site** will look for all media that is in a pool with a name ending with "site". Similarly, **%back%** will match all names containing the word back.

3. Select the date requested (using the arrow keys, or typing in the new dates).

4. Click the Run button.

The *Offsite Media Candidates* then displays the available media based on the user’s selection criteria.

Column Heading	Description
Volume Pool	The volume pool to which this piece of media is assigned.
Description	A brief description of the pool.
Media ID	The ID of this piece of media.
Backup ID	The ID of the backup or archive job.

Offsite Media Candidates

Offsite Media Candidates Sat, Jun 28, 2003

[Customize...](#) | [E-mail This Report...](#) | [Printer Friendly](#)

Select media from Pool or Policy containing and written to since Jun 27 2003

Volume Pool	Description	Media ID	Backup ID
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056738728
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056738728
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056738728
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056738728
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056742330
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056751931
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056763333
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056774734
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056786133
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056797533
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056808933
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056817933
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056825133
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056825133
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056825133
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056825133
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056829333
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056840734
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056852133
NetBackup	the NetBackup pool	A00000	spark.storageewiz.com_01056863533



Full Tapes Utilization Report

This report lists the average amount of data stored on each full piece of media in each pool. This listing is intended to help you calculate the number of tapes you will need to fulfill your backup requirements.

How to Access this Report

Select the **Full Tape Utilization** option from the **Media** folder.

Report Details

Only full tapes are included in this report. The **Average Utilization** field indicates the average amount of data on an active tape.

Tape Utilization Report

 **Full Tapes Utilization** Sun, Jun 29, 2003

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Volume Pool	Retention Period	Active Tapes	Average Utilization
Hanuman_Archive	2 weeks	1	23,228,608
nbunix1-2	2 weeks	1	32,574,880

Column Heading	Description
Volume Pool	The name of the volume pool.
Retention Period	The length of the retention period.
Active Tapes	The number of active tapes.
Average Utilization	The average amount of data stored on each full piece of media in this volume pool.

Ejected Media Status Report

This report used to be called the *Current Vaulting Status Report*. It lists available media (media that contain images or have been written to) that are not currently loaded in a robotic device.

Note The information displayed in this report is not related to the NetBackup Vault option. The NetBackup Vault option generates a separate set of reports.


How to Access this Report


Select the **Ejected Media Status** option from the **Media** folder.

Report Details

This report lists media not loaded in a storage device, while the *Offsite Media Candidates Report* lists media which are currently loaded in a storage device.

Ejected Media Status Report

 **Ejected Media Status** Sun, Jun 29, 2003

[Customize...](#) | [E-mail This Report...](#) |  [Printer Friendly](#)

Volume Pool	Retention Period	Media ID	Expiration Date
NetBackup	1 week	A00002	
NetBackup_d	1 week	A00002	

Column Heading	Description
Volume Pool	The name of the volume pool.
Retention Period	The length of the retention period.
Media ID	The ID of this piece of media.
Expiration Date	The date this piece of media expires.



This chapter provides details on the Performance reports available with NetBackup Advanced Reporter (NBAR).

The Performance reports generated by NetBackup Advanced Reporter provide information related to the master server's performance. These reports allow the user to determine the performance quality of their systems. By viewing these reports, end users can note any anomalies that can then be reported to the appropriate System Administrator.

The reports in this chapter include:

- ◆ *Active Backup Policies (Active Backup Policy Definitions Report),*
- ◆ *Schedule Forecast (Backup Job Schedule Forecast Report),*
- ◆ *Window Utilization (Window Utilization Report),*
- ◆ *Window Usage by Policy (Window Usage By Backup Policy Report),*
- ◆ *Master Server Performance (Master Server System Performance Report),* and
- ◆ *Drive Throughput (Drive Statistics Report).*



Active Backup Policy Definitions Report

This report is a listing of all active policies and their respective backup schedules for a particular date.


How to Access this Report






Select the **Active Backup Policies** option from the **Performance** folder.

Report Details

For more detailed information about a particular policy, bring up the Policy Properties pages by clicking on the icon under **Properties** for a particular entry. The information about this policy found on the Policy Properties pages is divided among four areas: Policy Attributes, Schedules, File Paths, and Client Details. The Attributes area only displays the attributes for this policy that NBAR collects.

Active Policy Definitions Report

 **Active Backup Policy Definitions** Fri, Jul 11, 2003
[Customize...](#) | [E-mail This Report...](#) | [Printer Friendly](#)

 Properties	Policy Name	Policy Type	Last Modified	Max. Jobs	Number of Clients
	Some_Data	MS-Windows-NT	2003/04/12	Unspecified	1
	Data	MS-Windows-NT	2003/04/12	Unspecified	1
	MultiStreamed	MS-Windows-NT	2003/04/29	Unspecified	1
	Imp_Docs	MS-Windows-NT	2003/07/10	Unspecified	1

Column Heading	Description
Properties	Click the Properties icon to access the policy property pages.
Policy Name	The name of the backup policy.
Policy Type	The type of backup policy.
Last Modified	The last time this policy was modified.
Max. Jobs	The maximum number of jobs specified for this policy.
Number of Clients	The number of clients associated with this policy.

Backup Job Schedule Forecast Report

This report forecasts what backup jobs are scheduled to run in the next 24 hours. It gives specific date and time details for each job, as well as the number of clients scheduled.

This report tells you what types of backup jobs will run, categorized by policy and schedule.

Note NBAR and the NetBackup scheduler use different criteria to predict what jobs are scheduled. Therefore, if you compare NBAR's results with those of the NetBackup scheduler, you may find significant discrepancies.

How to Access this Report

Select the **Schedule Forecast** option from the **Performance** folder.

Report Details

To derive this forecast, the report looks at the previous week's activity for each active policy/schedule combination. To generate a meaningful forecast, historical data must be available. There are several conditions that must be met for data to appear on the report:

- ◆ NetBackup must have been running for at least six days.
- ◆ The database must be populated.
- ◆ Each policy must have been active for at least eight days.







Each entry in the **Policy** field links to a more detailed report. Click on any entry in the **Policy** field to access the *Window Usage By Backup Policy Report*.



Backup Job Schedule Forecast Report

 Backup Job Schedule Forecast Mon, Jun 30, 2003

[Customize...](#) | [E-mail This Report...](#) | [Printer Friendly](#)

Policy Properties	Backup Policy	Schedule	Schedule Type	Window Opens	Window Closes	KB Processed	Files processed
 Calendar	Calendar	Cal	Full	2003/07/01 00:00:00	2003/07/01 10:00:00	0	2
 disk_backup	disk_backup	Full	Full	2003/07/01 14:00:00	2003/07/01 17:00:00	822,944	7,743
 mars	mars	Full_3_days	Full	2003/07/01 22:00:00	2003/07/02 02:00:00	0	2
 system	system	Weekly_Full	Full	2003/07/01 22:00:00	2003/07/02 03:00:00	0	3
 test_Solaris_NBAR_Database	test_Solaris_NBAR_Database	ALL_DAY_FULL	Full	2003/07/01 00:00:00	2003/07/01 02:00:00	0	2
 Win2k	Win2k	IncrDaily	Incremental	2003/07/01 20:00:00	2003/07/02 06:00:00	1	0

Column Heading

Description

Backup Policy

The name of the backup policy associated with this job.

Schedule

The name of the schedule associated with this job.

Schedule Type

The sort of backup associated with this job, for example, Full or Incremental.

Window Opens

The time the backup window opens for this policy.

Window Closes

The time the backup window shuts for this policy.

KB Processed

The amount of data backed up by this job.

Files Processed

The number of files backed up by this job.



Window Utilization Report

This report tells you how much time (in hours) has been used by each Policy's backup window during yesterday's jobs. It provides a clear graph of NetBackup activity.

How to Access this Report

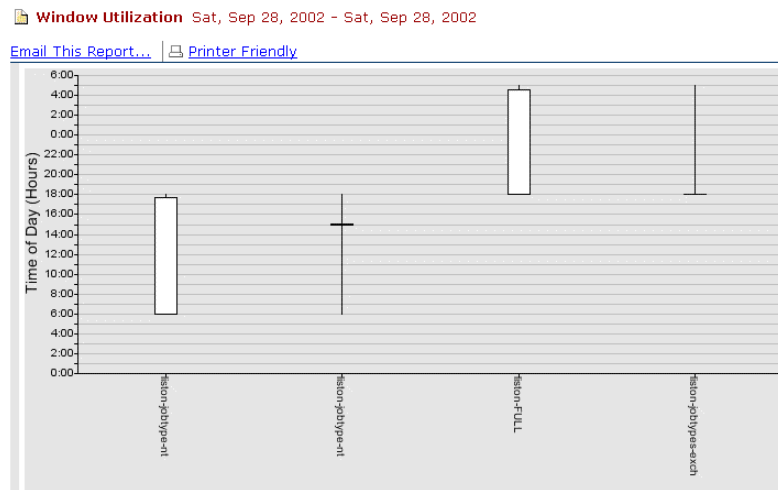
Select the **Window Utilization** option from the **Performance** folder.

Report Details

Note If NetBackup has not been running for at least six days, or if the database has not been populated, this report will not contain any data.

This report lists all backup windows use by policy (horizontal axis) and by time of day (vertical axis). Each bar within this report links to a more detailed report for each specific day. When you click on any bar, the *Window Usage By Backup Policy Report* report appears displaying data for the selected policy.

Window Utilization Report



Window Usage By Backup Policy Report

This report reflects the schedule set for each policy by day. It can help you determine the average window utilization over time. The report also quickly highlights the possibility of any given schedule's windows becoming too small to support its workload.

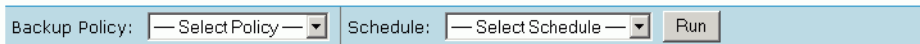
How to Access this Report

- ◆ Select the **Window Usage by Policy** option from the **Performance** folder.
- ◆ Click the **Policy** field in the *Backup Job Schedule Forecast* report or
- ◆ Click any bar in the *Window Utilization* report.

Report Details

When you first access this report, NBAR displays the **Policy** and **Schedule** selection criteria menu.

Policy and Schedule Selection Criteria



Backup Policy: Schedule:

After selecting the appropriate policy and schedule using the pull down menu arrows, click the **Run** button (located further to the right) with your left mouse button to access the report.

This report lists all window use for policy by day (horizontal axis) and by time of day in hours (vertical axis), and lets the user know how much time (in hours) has been used by each policy's backup window during yesterday's jobs. Backup window refers to the period of time during which backups can begin. This period of time may be cross-referenced with a particular NBU policy schedule.

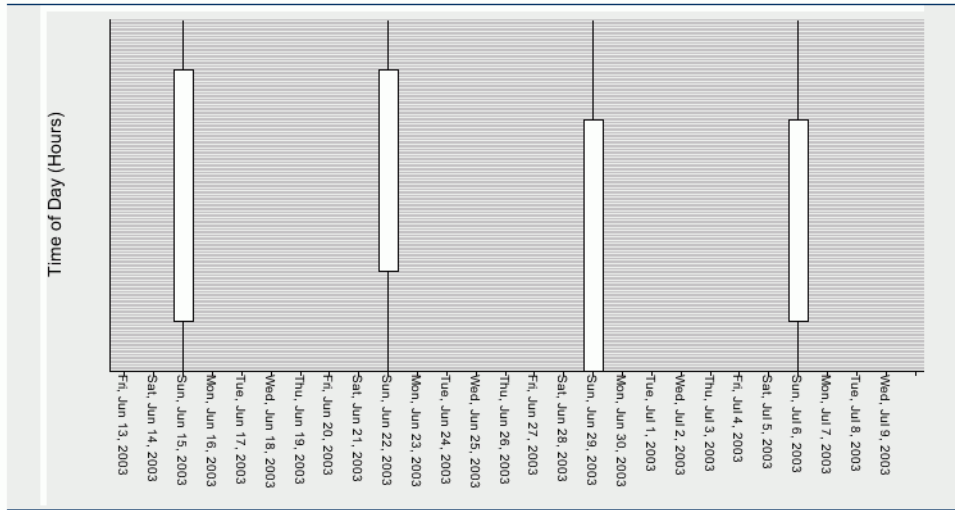
Active backup window refers to the period of time during which the backups of a particular policy are active. The active backup window begins at the time that the first backup of a particular policy begins, and ends at the time that the last (remaining) active backup for a particular policy has completed.

Note If NetBackup has not been running for at least six days, or if the database has not been populated, this report will not contain any data.

Each bar within this report links to a more detailed report for each specific day. When you click on any bar, the *Job Details for Policy <policy name> Report* report appears displaying backup data for the day selected.

Window Usage by Backup Policy Report

Backup Policy: Schedule:



Master Server System Performance Report

This report is a graph-based report that lets the user know how well their master server is operating. This report measures system performance through memory utilization (left vertical axis) and by how busy (in percent) the CPU is (right vertical axis) over time (horizontal axis). Memory utilization is represented by amount for Windows systems and by percentage in UNIX systems.

How to Access this Report

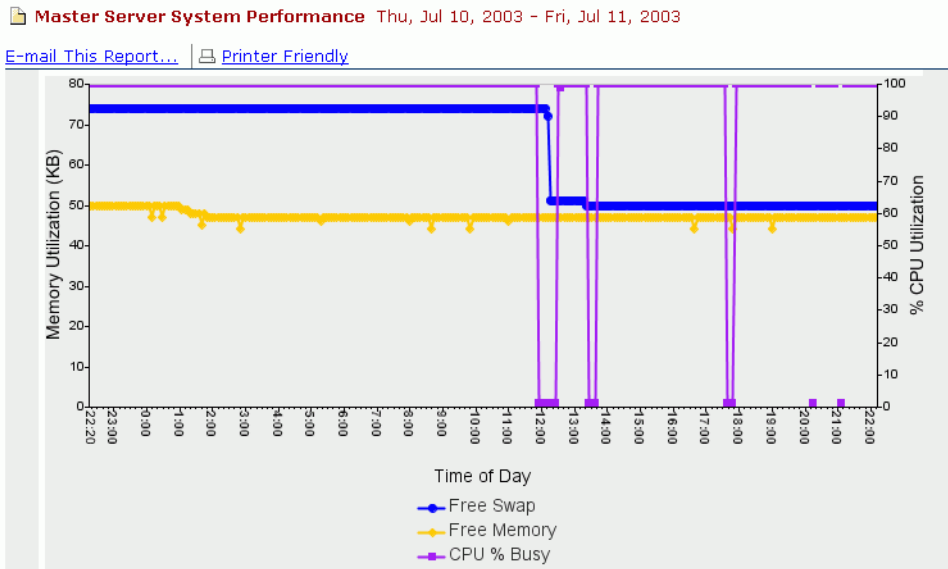
Select the **Master Server Performance** option from the **Performance** folder.

Report Details

Each line indicates a particular measure of performance, coded by color. Check the key under the graph for a description of what each color represents.

Note If there is not much activity for the master server depicted, the lines may look jagged. The report generates a data point for every five minutes, and can represent fine variations in a large amount of activity. When there is little activity, the graph appears somewhat less sophisticated.

System Performance Report



Drive Statistics Report

This report plots the average data throughput and the number of jobs over a 24-hour period for the selected media server. You may want to run this report to get a sense of how much data each media server is processing. This report may also give you a sense of whether or not run times for the plotted jobs are balanced over the course of the reporting period.

Note In prior versions of NBAR, this report pertained only to backup jobs. Beginning with NBAR 5.0, this report pertains to both backup and archive jobs. Be aware, however, that failed jobs and vault jobs are not considered in throughput totals.

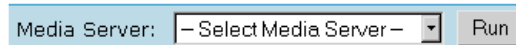
How to Access the Report

Select the **Drive Throughput** option from the **Performance** folder.

Report Details

Use the media server selector to choose the media server you want to analyze.

Select Media Server Dialog Box



Media Server:

From the **Select media server** list box, choose the server you want to analyze. Click the **Run** button to generate a chart of server throughput performance.

The upper chart displays the amount of data throughput over a 24-hour period for the media server selected.

Note For multiplexed images, throughput calculations may not be accurate. NBAR does not account for the fact that several data streams are written simultaneously.

The lower chart displays the number of jobs over the course of the same 24 hours for the server.

Note The lower chart cannot be used to tally the number of jobs that ran during a specified time period. The points on the graph tell you the number of jobs that were running during the sampling time, but do not tell you whether each point represents a new job or continuation of a job.

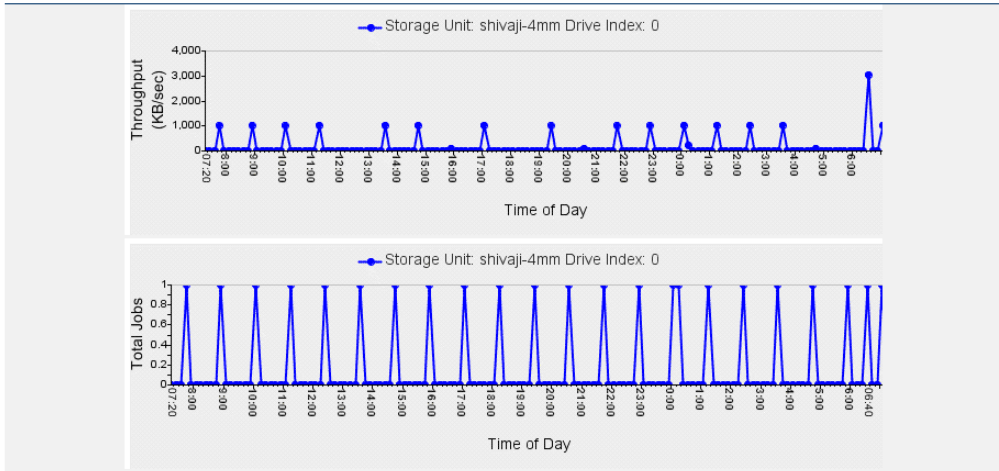


Drive Statistics Report

Drive Statistics Thu, Jun 12, 2003 - Fri, Jun 13, 2003

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Media Server:



Viewing the End User and Misc. Reports

10

This chapter provides details on the *End User* report available with NBAR, titled, *Client Job History Report*, and on the Miscellaneous reports that can only be accessed through report links from other reports.

The Miscellaneous reports provide additional information in detail for certain reports. As a result, they do not appear on the report browser or the report menu. These reports are described only in this chapter, although they are accessed from several reports.

Client Job History Report

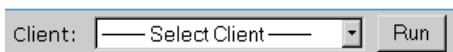
This report provides end users with information related to their own personal system's backup by allowing them to determine if critical data was backed up successfully. By viewing this report, end users can note any anomalies that can then be reported to the appropriate System Administrator. Additionally, this report allows an administrator to quickly view the backup information for a specific client.

How to Access this Report

Select the **Client History Lookup** option from the **End User** folder. You can also access this report from the *Clients at Risk* report. The *Clients at Risk* report provides an overview of backup success for all clients based on today's backup results.

Report Details

The *Client Job History* report lists all the jobs performed on the client machine during the last 28 day period. When you first access this report, NBAR displays the **Select Client** pull down menu in the *Client Job History* report.



Client:

Using the **Select Client** pull down menu, select the name of the computer for which you want the job history, and click **Run**.



The *Client Job History* report then displays the information for the selected client. Click on any error entry in the **Status** field to access the *NetBackup Troubleshooting Guide*. See the *NetBackup Troubleshooting Guide* for more information.

Column Heading	Description
Properties	Displays the Job Properties pages.
Job ID	The number assigned to this job by NetBackup.
Job Type	The type of job (Backup, Archive, etc.)
Media Server	The media server that executed the job.
Backup Policy	The policy associated with the job.
Schedule	The schedule associated with the job.
Exit Status	The status code assigned to the outcome of the job. This field links to the <i>NetBackup Troubleshooting Guide</i> .
Start Time	The time the job began.
End Time	The time the job completed.
Duration	The length of time the job was active.
KB Processed	The amount of data backed up by the job.
Files	The number of files backed up by the job.
Throughput	The average amount of data transferred by this job over the duration of the job.

Note The throughput values displayed in this report may not match the throughput values displayed by the Activity Monitor. The Activity Monitor measures job duration as the time the job is active, while NBAR measures job duration only while the job is being written to tape. This difference affects throughput calculations.



Client Job History Report

Client Job History Sun, Jun 1, 2003 - Sun, Jun 29, 2003

[Customize...](#) | [E-mail This Report...](#) | [Printer Friendly](#)

Client:

Properties	Job ID	Job Type	Media Server	Backup Policy	Schedule	Exit Status	Start Time	End Time	Duration	KB Processed	Files	Throughput
	4600	Backup	spark.storageewiz.com			246	2003-06-05 13:24:02	2003-06-05 13:24:02	00:00:00			
	4601	Backup	spark.storageewiz.com			198	2003-06-05 13:25:23	2003-06-05 13:25:23	00:00:00			
	4603	Backup	spark.storageewiz.com user		User_Backup	0	2003-06-05 13:53:05	2003-06-05 13:56:50	00:03:45	15,277	1,735	80
	4604	Archive	spark.storageewiz.com user		Archive	0	2003-06-05 13:55:14	2003-06-05 13:59:18	00:04:04	6,928	663	56
	4610	Verify	spark.storageewiz.com system			191	2003-06-05 14:16:23	2003-06-05 14:16:23	00:00:00			
	4611	Verify	spark.storageewiz.com Win2k			0	2003-06-05 14:25:54	2003-06-05 14:32:40	00:06:46	0	0	0
	4843	Verify	spark.storageewiz.com system			1	2003-06-16 13:16:17	2003-06-16 13:30:52	00:14:35	0	0	0



Overview of the NBAR Miscellaneous Reports

Miscellaneous reports are generated by NetBackup Advanced Reporter (NBAR) to provide more detail to individual backup reports. They can only be accessed through report links from other reports. The reports in this chapter include the:

- ◆ *Summary of Status Code <number> Report,*
- ◆ *Summary of Status Codes for <client> Report,*
- ◆ *Summary of Status Code <number> for <client> Report,*
- ◆ *Job Details for Policy <policy name> Report.*

Summary of Status Code <number> Report

The purpose of this report is to provide a summary of the conditions under which a particular status code occurred.

How to Access this Report

The *Summary of Status Code (number)* report is generated by clicking on any entry in the **Occurrences** field in the *Error Log Summary* report.

Report Details

This report provides a list of every occurrence of a specific error code.

Summary of Status Code <number> Report

 **Summary of Status Code 96** Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Client	Date of Occurrence	Policy	Schedule
spark.storageewiz.com	2003-06-27 02:12:11	system	Weekly_Full
spark.storageewiz.com	2003-06-27 02:12:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-27 02:12:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-27 00:02:14	Calendar	Cal
spark.storageewiz.com	2003-06-27 00:02:14	test_Solaris_NBAR_Database	ALL_DAY_FULL
spark.storageewiz.com	2003-06-26 22:02:11	mars	Incr_Daily
spark.storageewiz.com	2003-06-26 14:02:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-26 14:02:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-26 14:02:11	system	Hourley_Incr
spark.storageewiz.com	2003-06-26 01:52:13	HomeArea	FullCal
spark.storageewiz.com	2003-06-26 01:52:13	HomeArea	FullCal
spark.storageewiz.com	2003-06-26 01:52:13	system	Weekly_Full
spark.storageewiz.com	2003-06-26 00:02:13	Calendar	Cal
spark.storageewiz.com	2003-06-26 00:02:13	test_Solaris_NBAR_Database	ALL_DAY_FULL
spark.storageewiz.com	2003-06-25 22:02:11	mars	Full_3_days
spark.storageewiz.com	2003-06-25 13:42:11	system	Hourley_Incr
spark.storageewiz.com	2003-06-25 13:42:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-25 13:42:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-25 01:32:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-25 01:32:11	HomeArea	FullCal
spark.storageewiz.com	2003-06-25 01:32:11	system	Weekly_Full
spark.storageewiz.com	2003-06-25 00:02:08	Calendar	Cal

Column Heading

Description

Client

The name of the client.

Date of Occurrence

The date this status code occurred.

Policy

The policy in use when this status code occurred.

Schedule

The schedule in use when this status code occurred.



Summary of Status Codes for <client> Report

This report provides a list of all errors that have occurred for the selected client.

How to Access this Report


The *Summary of Status Codes for (Client)* report is generated by clicking on any entry in the **Client** field in the *Error Log Summary by Client* report (see the *Error Log Summary by Client Report*).

Report Details

The report contains the date the error occurred, the policy and schedule the error occurred in, and the NetBackup error code for the error.

Click on any entry in the **NetBackup Error Code** field to access the *NetBackup Troubleshooting Guide* and a description of the error. See the *NetBackup Troubleshooting Guide*.

Summary of Status Codes for <client> Report

 [E-mail This Report...](#) | [Printer Friendly](#)

Date of Occurrence	Policy	Schedule	NetBackup Error Code
2003-06-05 14:16:23	system		191
2003-06-05 13:25:23			198
2003-06-05 13:24:02			246

Column Heading	Description
Date of Occurrence	The date this status code occurred.
Policy	The policy in use when this status code occurred.
Schedule	The schedule in use when this status code occurred.
NetBackup Error Code	The NetBackup error code associated with this status.

Summary of Status Code <number> for <client> Report

This report provides details on the error selected from the *Error Log Summary by Client* report.

How to Access this Report

The *Summary of Status Code (number) for (Client)* report is generated by clicking on any entry in the **Occurrences** field in the *Error Log Summary by Client* report.

Report Details

This report included the name of the client that had the selected error, the date and time of each occurrence of the error, and the policy and schedule of the client at the time of the error.

Summary of Status Code <number> for <client> Report

 Summary of Status Code 196 for client spark.storagewiz.com Sun, Jun 1, 2003 - Sun, Jun 29, 2003

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Date of Occurrence	Policy	Schedule
2003-06-13 01:11:05	system	Weekly_Full
2003-06-13 00:41:06	mars	Full_3_days
2003-06-06 00:01:02	test_Solaris_NBAR_Database	ALL_DAY_FULL
2003-06-03 00:06:01	test_Solaris_NBAR_Database	ALL_DAY_FULL

Column Heading

Description

Date of Occurrence

The date this status code occurred.

Policy

The policy in use when this status code occurred.

Schedule

The schedule in use when this status code occurred.



Job Details for Policy <policy name> Report

This report provides details on each backup job run for a selected Policy on the previous day.

How to Access this Report

- ◆ Click any entry in the **Policy** report link in the *Job Details by Policy* report or the *Consolidated Error Log*, located in the **Administration** folder.
- ◆ Click any bar in the Full, Incremental, or Restore summary reports in the **Management** folder to generate a *Job Details by Policy* report for a specific type of job. From that report, click an entry in the Policy field to bring up a *Job Details for Policy <policy name>* report for that particular type of job and policy.

Report Details

If the backup job could not be completed, the **Exit Status** field will display an Error Status indicator with the applicable error number. Click on any **Exit Status** entry to access the *NetBackup Troubleshooting Guide*. See the *NetBackup Troubleshooting Guide*.

Duration and **End Time** are defined slightly differently for successful jobs and failed jobs:

- ◆ For a successful job, **Duration** is the time it took the job represented by one job ID to complete, and **End Time** is the time the job ended.
- ◆ For a failed job, **Duration** is the time between the first time NetBackup tried to run the job, and the last time NetBackup tried to run the job. **End Time** for failed jobs is the last time the job was tried.

Job Details for Policy <policy name> Report

Properties	Job ID	Job Type	Client	Exit Status	Start Time	End Time	Duration	Volume (KB)	Volume (Files)	Throughput (KB/s)
	4740	Backup	spark.storagewiz.com	1	2003-06-12 22:01:05	2003-06-13 00:31:32	02:30:27	78,816	7,113	1,012
	4744	Backup	spark.storagewiz.com	196	2003-06-13 00:41:06	2003-06-13 00:41:06	00:00:00			

Column Heading Description

JobID The ID NetBackup assigned to the job.

Job Type The type of job (backup, restore, archive, etc.)



Column Heading	Description
Client	The system the job was performed on.
Exit Status	A number associated with a descriptive state, assigned to the job at exit.
Start Time	The time NetBackup began processing the job.
End Time	The time NetBackup finished processing the job.
Duration	The time NetBackup took to process the job.
Volumes (KB)	The number of kilobytes of information backed up by this job.
Volumes (Files)	The number of files backed up by this job.
Throughput (KB/s)	The average amount of data transferred by this job over the duration of the job.

Note For multiplexed images, throughput calculations may not be accurate. NBAR does not account for the fact that several data streams are written simultaneously.





This chapter describes the reports designed for multiple GDM managed servers, known as the GDM reports.

Note Master servers that have NBAR with GDM installed are called GDM managed servers. The GDM master server with NBAR installed is called the GDM server (formerly known as the Master of Masters, or MoM).

If you are not certain that your environment has fulfilled the GDM prerequisites, please see “Planning for a GDM Configuration” on page 22. You must have already configured your NetBackup servers for GDM. If you have not already done this, please refer to the NetBackup *System Administrator’s Guide* for information. For instructions on how to add a GDM machine to `bp.conf`, you can refer to “Allowing NBAR Access to GDM Data” on page 24 for UNIX systems, or “Allowing NBAR Access to GDM Data” on page 33 for Windows systems.

For information on data collection in a GDM environment, refer to the chapter NBAR 5.1 Overview.

Each GDM summary report addresses a particular aspect of NetBackup backup activity on all the GDM managed servers on your network. They provide a way to compare the performance of the GDM managed servers on your network to each other, to pinpoint which sites are having problems with data collection or with storage space, and which sites are growing the fastest.

GDM reports include:

- ◆ *Global Site Size (Global Site Size Report),*
- ◆ *Global Error Details (Global Error Details Report),*
- ◆ *Global Backup Growth (Global Backup Growth Report)*
- ◆ *Global Media Usage (Global Media Usage Report), and*
- ◆ *Daily GDM Rollup (Daily GDM Rollup Report).*



What Types of Information Do GDM Reports Contain?

This section outlines several ways in which you may find the information contained in the GDM reports useful.

- ◆ Assume that you have been tasked with projecting which sites in your GDM domain will require more backup hardware and backup media. Examine the Global Backup Growth report and the Global Media Usage report to determine which sites are growing the fastest, and which sites may be running out of media.
- ◆ Suppose that the Global Site Size report shows a managed server's NetBackup catalog growing exponentially. This could be consistent with the actual amount of data being backed up, or it could indicate a problem. Check the Global Backup Growth report for this server to see if the size of the catalog accurately reflects either the volume of data being backed up, or the number of files being backed up. If not, you may well have a problem and should investigate further.
- ◆ If a site is having many more media errors than average, the Global Error Details report will help you pinpoint the problem. An unusually large number of errors may indicate that you need to make more media available, or that you need to reconfigure NetBackup to use a different device to perform backups for this site.

Note You will not see any information on the GDM reports until one day of data has been collected. This may take more than 24 hours, depending on when you set up.

What are Tolerance Levels?

NBAR uses tolerance levels to determine when a GDM report value is unusual enough to flag or highlight for the user. For many of the GDM reports, there are tolerance levels preset in the `nbar.conf` file. These preset levels should work for most system configurations. If you want to change a level refer to the chapter Administrative Tasks.

What Are Side Notes?

[Hide Side Note](#) Each GDM report displays some explanatory text on the right side by default. This text is called a side note, and can be hidden by clicking the **Hide Side Note** icon.

Glossary

These terms apply specifically to NBAR-GDM configurations. For the complete glossary of terms and definitions for NetBackup, refer to the glossary included in the NetBackup help file.

Jobs in Progress

A *job in progress* is any job which is still running when the loader runs. A job in progress will not count towards the job tally for that day, but a count of jobs in progress is listed separately on the report to give you a sense of how many jobs are missing from the rollup totals.

Technically, a job in progress is a job which does not have a “0” or “1” exit status. All jobs in progress older than seven days are purged when the loader runs.

Loader

The *loader* is the NBAR process which collects data on each client from the NetBackup logs and adds it to the GDM managed server’s database. You can configure this process to run multiple times per day. In a GDM environment, data collected from each managed server is sent to the GDM server directly after the loader finishes each day.

GDM Server

The *GDM server* is the server to which all GDM managed servers push the rolled up data from their clients. The GDM server must have NetBackup GDM software installed.

GDM Managed Server

A GDM managed server is the server installed on a NetBackup master that gathers information from the NetBackup catalog of that master server. Once in each 24-hour period it summarizes information from all of its clients and sends the data to the GDM master server.

Rollup

A *rollup* is the process of collecting the data and passing it to the GDM server. By default, each GDM managed server summarizes information from all of its clients and sends the data to the GDM server once in a 24-hour period.

Rollup Time

The *rollup time* is the time each managed server begins to send its GDM data to the GDM server. This parameter can be set in time local to the managed server, which is not necessarily the same as the time for the GDM server. By default, this occurs right after the data loader runs.

SORD

SORD is an acronym standing for *Start Of Reporting Day*. The SORD indicates the time at which a new reporting “day” (one 24-hour period) starts for each managed server (in local time). See “Start of Reporting Day (SORD) Parameter” on page 5.



Global Site Size Report

The GDM summary reports provide a synopsis of data from all GDM managed servers. This report contains information about how fast each site is growing, in terms of the number of backups performed by that site. This growth is measured by the size of the NetBackup catalog.

Purpose of this Report

This report lists information about the growth of the NetBackup catalog for each master server over the previous 12 month period. It's clear from the bar chart which catalogs have had the fastest percentage growth.

Note If the master server has not been configured for 12 months, the amount of change is calculated from the earliest date available.

As with the other GDM reports, this report provides a tool for analyzing performance across your system and shows you the size of the catalog for each GDM managed server in relationship to the other GDM managed servers. The chart also provides information on the number of active policies and the number of active clients, so you can compare activity across servers.

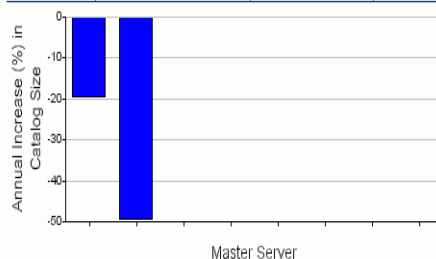
Note The information for active policies and active clients fields is always based on data from the current day, regardless of the dates of the Global Site Size report. This is because data on active policies and clients is only available for policies and clients that are in use today.

How to Access this Report

Click the **GDM Reports** tab, then choose the **Global Site Size** option from the report tree. You must be accessing reports from the GDM server for GDM data to be available.

Global Site Size Report

Global Site Size Sun, Jun 29, 2003

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Which master server has the fastest growing catalog?
The tallest vertical bars on the chart represent the sites with the catalogs that have changed by the greatest percentage over the past 12-month period. Bars descending below the zero y-axis value represent decrease in the catalogs. If records do not go back one year, then the earliest recorded data is used.

Master Server	Growth Trend	Catalog Size (MB)	Annual Increase (%)	Files in Catalog	Total Jobs	% Successful	Active Policies	Active Clients
Average	➔	44.84	-47.90%	71	14	88.64%	10	3
Total		134.52		214	44		30	11
mars.storagewiz.com	➔	9.03	-19.57%	26	5	80.00%	6	1
spark.storagewiz.com	➔	125.35	-49.24%	67	13	92.31%	20	9
venus.storagewiz.com		0.14		121	26	88.46%	4	1

Report Details

This section explains the data displayed in the bar chart and in the table.

Bar Chart






The Global Site Size chart displays the annual percentage of growth for each GDM managed server's catalog.

Each vertical bar represents one GDM managed server. Allow the cursor to hover on a selected bar to see the name of the GDM managed server and the percent change from one year ago.



Table

Click in the heading of any column to sort on that column.

Column Name	Description
Master Server	The GDM managed server which is this site's master server.
Growth Trend	<p>A visual indication of how fast this site's catalog is growing. There are five indicators:</p> <p> increasing a lot</p> <p> increasing some</p> <p> staying about the same</p> <p> decreasing some</p> <p> decreasing a lot</p>
Catalog Size	The actual size of the catalog on the date of this report.
Annual Increase (%)	<p>The percentage change in the size of the catalog compared to the same date 12 months ago.</p> <p>If there are not 12 months of data, NBAR uses the earliest date.</p>
Files in Catalog	The number of files in the catalog on the report date.
Total Jobs	<p>The total number of jobs that were run the previous day on this server.</p> <p>This field links to the <i>Detailed Job List</i> report for this server.</p>
%Successful	The percentage of jobs that succeeded.
Active Policies	<p>The total number of active policies for this server's backups.</p> <p>This field links to the <i>Active Policy Definitions</i> report for this server.</p> <p>Note The information for this field is always based on data from the current day, regardless of the dates of the Global Site Size report.</p>

Column Name	Description
Active Clients	<p>The total number of clients in active policies that are being backed up by this server.</p> <p>This field links to the <i>Hosts under NetBackup Management</i> report for this server.</p> <p>Note The information for this field is always based on data from the current day, regardless of the dates of the Global Site Size report.</p>



Global Error Details Report

The GDM summary reports provide a synopsis of data from all GDM managed servers. This report contains information about each server's problems.

Purpose of this Report

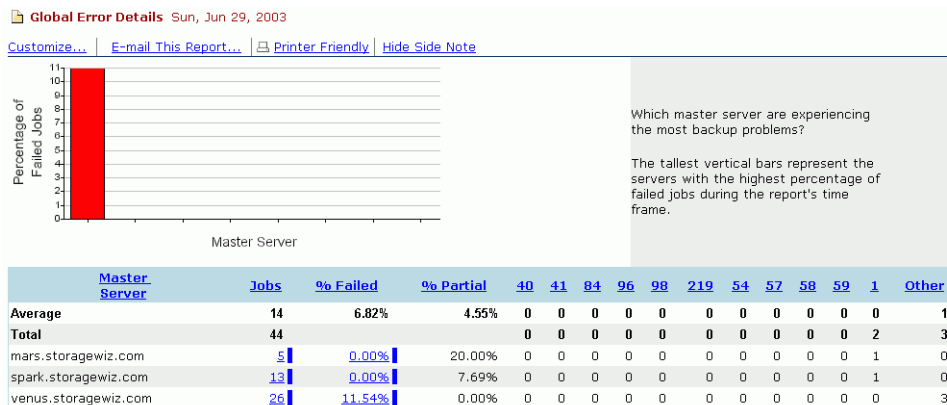
This report lists information about the failed jobs for each GDM managed server over a specified period of time. It's clear from the report which servers are having the most trouble, as indicated by the percentage of failed jobs, and which errors (by error code) occur most frequently.

As with the other GDM reports, this report provides a tool for analyzing NBAR backup performance across your system and shows you the performance of each GDM managed server in relationship to the other GDM managed servers.

How to Access this Report

Click the **GDM Reports** tab, then choose the **Global Error Details** option from the report tree. You must be accessing reports from the GDM server for GDM data to be available.

Global Error Details Report



Report Details

This section explains the data displayed in the bar chart and in the table.



Bar Chart

The Global Error Details chart displays the percentage of failed jobs for each GDM managed server for the timeframe specified for this report.

Each vertical bar represents one GDM managed server. Hover the cursor over a selected bar to see the name of the GDM managed server and the percentage of jobs which failed. Click on the bar to bring up the *Error Log Summary* report for that server.

Table

Click in the heading of any column to sort on that column

Column Name	Description
Server	The name of the GDM managed server on which the jobs ran.
Jobs	The number of jobs that ran during the report's time period. Click on this entry to bring up the <i>Detailed Job List</i> for this GDM managed server.
%Failed	The percentage of all jobs run during the report's time period that failed. For this report, a job is classified as "failed" if it fails during the last attempt, not if it failed on an initial attempt, but eventually succeeded on a retry. Click on this entry to bring up the <i>Consolidated Error List</i> for this GDM managed server.
%Partial	The percentage of jobs that were partially successful.
Error Codes	The number of jobs that failed due to the error represented by the error code in the column header.
1	An error code of 1 indicates that the job was partially successful. This entry is the number of jobs that were partially successful during the timeframe of this report.
Other	The number of jobs that failed because of less common errors. A job counts as failed if the last attempt failed.



Error Tolerance Levels

The error tolerance level is a level of occurrences of a particular error code above which the server in question may experience serious problems. The entries for the %Failed and the Error Code columns will be highlighted if their values exceed the specified limit. The error tolerance levels are preset, but are configurable through the configuration utility. See the chapter “Administrative Tasks” for details.

Global Backup Growth Report

The GDM summary reports provide a synopsis of data from all GDM managed servers. This report contains information about how fast each site is growing, in terms of amount of data backed up.

Purpose of this Report

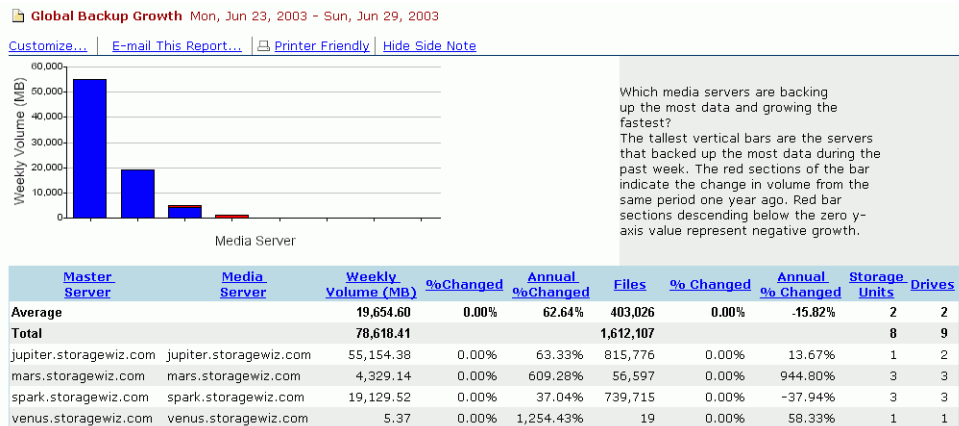
This report lists information about the increase in weekly volume of backups for each media server compared with an earlier week. It's clear from the report which media servers have had the largest increase in backup volume.

As with the other GDM reports, this report provides a tool for analyzing performance across your system. It demonstrates the volume of backups for each media server in relationship to the other media servers. The chart also provides information on the number of storage units and drives used by each media server.

How to Access this Report

Click the **GDM Reports** tab, then choose the **Global Backup Growth** option from the report tree. You must be accessing reports from the GDM server for GDM data to be available.

Global Backup Growth Report



Report Details

This section explains the data displayed in the bar chart and in the table.

Bar Chart

The Global Backup Growth chart displays the weekly backup volume for each media server. Hover the cursor over a selected vertical bar to display the name of the server, the amount of data backed up, and the change from a previous week.

Note The tooltip dates will not reflect whole successive weeks if data is not available for the entire week used to compare to the week beginning with the reference date. Instead, the first week will begin with the earliest date for which data is available, potentially resulting in an overlap with the week defined by the reference date.


Table

Click in the heading of any column to sort on that column.

The **annual percentage change** field in the table compares the data for the week beginning with the reference date to the same week a year ago to determine the annual percentage change for backups. If a year's worth of data is not available, the comparison will be made to the earliest week for which data is available. This field will be highlighted if a default tolerance level is exceeded. If necessary, you can change this value through the configuration utility.

The **percentage change** field in the table always compares the data for the week beginning with the reference date to the first week in the report's timeframe irrespective of data being available. If data is not available for that first week, some table entries will be blank.

Column Name	Description
Master Server	The GDM managed server to which the media server sends its images.
Media Server	The media server that performs the backups.
Weekly Volume	The volume of data backed up by the media server from six days prior to the end date of the report and including the end date of the report.

Column Name	Description
%Changed	The percentage change in the amount of data backed up by the media server from the first week this report covers to the last week this report covers.
Annual %Changed	<p>The percentage change in the weekly volume of data backed up by this media server compare to the weekly volume backed up by this media server one year ago.</p> <p>If the report data does not go back a year, the earliest week's worth of available data is used.</p> <p>Note Entries with a  symbol and highlighted in color indicate that the annual percent changed value for this media server is far higher than the average.</p>
Files	The number of files backed up by the given media server on the end date and the six days prior to the end date.
%Changed	The percentage change between the number of files backed up by this media server from the first week in the reporting period to the last week in the reporting period.
Annual %Changed	The percentage change in the number of files backed up by this media server for this reporting period compared to this period one year ago.
Storage Units	The number of storage units which are defined on this media server on the end date of this reporting period.
Drives	The number of drives connected to this media server on the end date of this reporting period.



Global Media Usage Report

The GDM summary reports provide a synopsis of data from all NBAR servers. This report summarizes media usage for each media server on your system and tries to answer the questions: Do I have slots in my robot? Where can I recycle tapes?

Purpose of this Report

This report provides information on the status of the media available to each media server on your system.

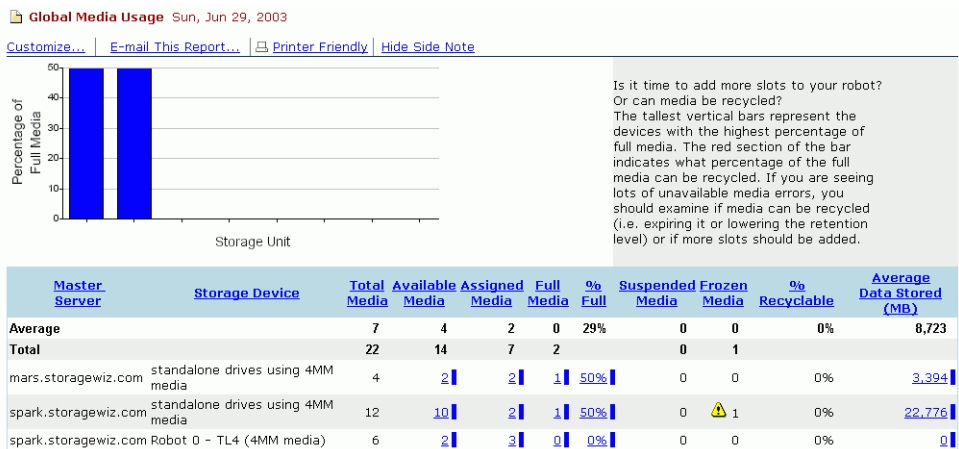
As with the other GDM reports, this report provides a tool for analyzing performance across your system and highlights GDM managed servers which may be running low on backup media. The chart also provides information on the percentage of recyclable media, suspended media, and frozen media for each storage unit.

The goal of the data displayed here is to get a sense of whether you can recycle enough media to fulfill your storage needs, or whether you need to add drives to your storage system.

How to Access this Report

Click the **GDM Reports** tab, then choose the **Global Media Usage** option from the report tree. You must be accessing reports from the GDM server for GDM data to be available.

Global Media Usage Report



Report Details

This section explains the data displayed in the bar chart and in the table.

Bar Chart

The Global Media Usage chart displays the percentage of full media for each media server.



Each vertical bar represents the media assigned to a particular media server. Hover with the cursor over each vertical bar to see the name of the media server, the percentage of full media and what percentage of media can be recycled. The section of each bar in red represents the portion of the full media for that media server that can be recycled

Table

Click in the heading of any column to sort on that column.

Column Name	Description
Master Server	The GDM managed server which is this site's master server.
Storage Device	This field both identifies the storage device and indicates what type of media is being used. For example, if the storage device is a robot, and it contains some drives which handle 4 mm tape and some which handle 8 mm tape, then that robot will have two entries here - robot - 4 mm and robot - 8 mm.
Total Media	The number of media that are currently configured in the storage device. If this is a multimedia device, the total media will apply only to one type of media. For example, if the device contains 4 4mm drives and 4 8 mm drives, than this device will be represented by two rows, and the entry under Total Media will be 4 for both rows.
Available Media	The number of media that are not currently assigned for use by NetBackup. This field links to the <i>Available Media List</i> for the selected GDM managed server.
Assigned Media	The number of media that are currently in use by NetBackup. This field links to the <i>Assigned Media List</i> for this GDM managed server.



Column Name	Description
Full Media	The number of assigned media which are full. This field links to the <i>Assigned Media List</i> for this GDM managed server.
%Full	The percentage of assigned media which are full. This field links to the <i>Assigned Media List</i> for this GDM managed server.
Suspended Media	The number of media which are currently suspended.
Frozen Media	The number of media which are frozen. A  symbol next to this entry indicates it is other than zero, that is, there is at least one piece of frozen media.
%Recyclable	The percentage of media which could be recycled. The conditions which make a piece of media eligible for recycling are either: <ul style="list-style-type: none">♦ media is full but not expired (that is, inactive) and♦ the retention level is set for more than a month from the date of this report. The retention level at which NBAR considers a tape potentially inactive is preset for 30 days. A  symbol next to this entry indicates it is greater than the threshold value. You can configure this value through the configuration utility.
Average Data Stored	The average amount of data stored on each full piece of media for this GDM managed server. This field links to the <i>Full Tapes Utilization</i> report for this GDM managed server.

Retention Level

NBAR sets a default retention level of 30 days. If you must change this parameter, you can do so through the configuration utility. Please see the chapter “Administrative Tasks” for more details.

Daily GDM Rollup Report

The GDM summary reports provide a synopsis of data from all GDM managed servers. This report contains information about each server's rollup activity.

Purpose of this Report

This report lists information about the about GDM rollup activity from each GDM managed server to the GDM server. The report highlights any servers that have not completed a successful rollup in the last 24 hours. The report also displays information on how long the rollup took, and an estimate of when the next rollup will occur for each server.

As with the other GDM reports, this report provides a tool for analyzing NBAR rollup performance across your system. This report shows you the status of your rollups in the GDM environment.

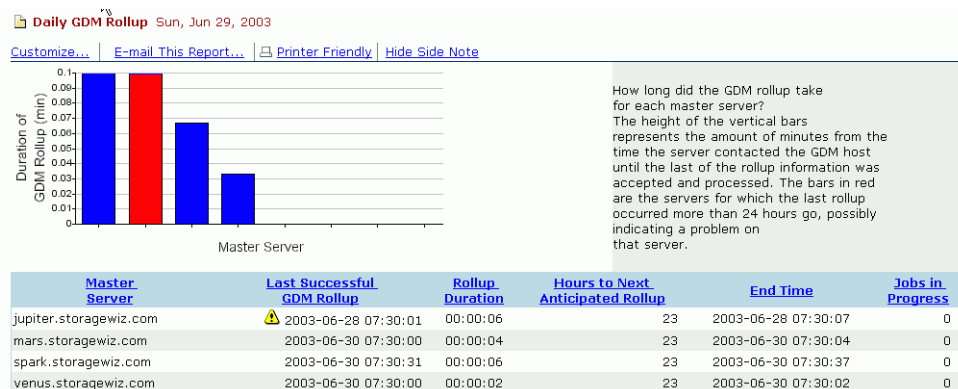
You can see at a glance if all rollups have completed successfully, how much time each rollup is taking, and if there were jobs in progress when GDM data collection occurred.

Note If the Daily GDM Rollup report indicates that a GDM managed server has not rolled up properly, then you must assume that any data compiled from all servers that appears in the GDM reports might be inaccurate.

How to Access this Report

Click the **GDM Reports** tab, then choose the **Global Site Size** option from the report tree. You must be accessing reports from the GDM server for GDM data to be available.

Daily GDM Rollup Report



Report Details

This section explains the data displayed in the graphical chart and in the table.

Bar Chart

The Daily GDM Rollup chart displays the amount of time the most recent rollup took for each NBAR managed server. This value is calculated from the time each server began sending information to the GDM server until all the information has been processed and stored by the GDM server. Hover the cursor over a selected vertical bar to see the server name and the time needed for the last rollup.

If the server which sent the rolled up data is represented in red, that means the GDM server has not received a rollup from that server for over 24 hours, and there may be a problem with the server.

Table

Click in the heading of any column to sort on that column.

Column Name	Description
Server	The name of the GDM managed server that rolls up the data to the GDM server.
Last Successful GDM Rollup	The time and day the GDM server began receiving rollup data. The time in this field is in the GDM server's time zone, not the time zone of the GDM managed server. A warning symbol next to an entry indicates that no successful rollup has occurred in the past 24 hours.
Rollup Duration	The amount of time (hours:minutes:seconds) between when the GDM server began receiving data from the rollup and when the GDM server finished processing the data.
Hours to Next Anticipated Rollup	The number of hours until the GDM server expects to begin receiving data for the next scheduled rollup from this server.
End Time	The time at which the GDM server finished storing the data from the most recent rollup for this server.
Jobs in Progress	The number of jobs which were not completed at the time the server collected the GDM rollup data. These jobs will be picked up the next time rollup data is collected.

Database Schema for NBAR

A

This appendix describes the database schema for the NetBackup Advanced Reporter database. Its purpose is to allow experienced NBAR users to develop their own NetBackup queries, and to help them understand where the data is coming from in the existing NBAR reports.

This document is intended for the technically sophisticated Netbackup Advanced Reporter user. It assumes a reasonable familiarity with both NetBackup and NBAR. Refer to existing NetBackup documentation for more information about the NetBackup databases and commands.

Note In versions of NetBackup prior to 4.5, policies were called classes. For the sake of backward compatibility, tables and columns within tables that referred to classes were not updated.

Future versions of this database are likely to have schema changes and may be incompatible with the current schema. The table below provides a list of recent changes.

Table Name	Field Name	Value changed to
nbcatalog	backup_media	varchar (255)
gdmbkgrow, mombkgrow	volume	bigint unsigned
njobs	media_id	varchar (255)
hosts	hostname domainname	varchar (63) varchar (191)
reports	no longer in use with release 4.5	removed from documentation
cpreferences	new table	added to NBAR tables
report_properties table	no longer in use with release 5.0	removed from documentation



Requirements

- ◆ The NBAR database uses a MySQL 3.23.37 database engine. Access to the database is through the MySQL Perl DBI.
- ◆ You must run the Perl DBI as a user other than root on UNIX systems or administrator on Windows systems. This precaution is to prevent unprivileged MySQL users from gaining unauthorized access to the system.

NBAR's Application Control Schema

The application control schema consists of tables which contain data used to control the content and actions of the Reports submenu and the selected report display properties of NBAR's client browser.

Report (sub)menu information defines the tree structure of the reports menu, the display text, and the Java class file to be invoked when a menu item is selected.

All report menu information is keyed by a username column. In the current implementation, this column is always set to contain the value 'target', and provides a default implementation. In future releases this may contain actual user names, thereby providing automatic support for user-specific menu structures.

Report property information is keyed by the Java class name of the class which implements the report. This construction supports the dynamic inclusion or exclusion of reports in the browser and permits adjustments to the report display.

There are several Perl scripts in the `<install_path>/netbackup/bin/goodies` directory. Each script is written to provide the information in an existing NBAR report. These scripts are meant as examples to demonstrate the type of information you can draw from the NBAR database.

NBAR Database Tables

This section of the appendix contains a detailed description for each table that is part of the NBAR database. Tables are divided by table name.

properties

The properties table contains user-specific, dynamically specified application properties which may be read during application startup and used to customize the user's view of the application and its functionality.

properties table

Column Name	Type	Null	Key	Default	Description
username	char(12)		PRI		The name of the user these properties belong to.
property	char(40)		PRI		The name of the property.
type	tinyint(4)	Yes			0:text, 1:color, 2:font



properties table (continued)

Column Name	Type	Null	Key	Default	Description
value	char(40)	Yes			The value of the named property.

The *type* attribute is used to identify the method the application should use to parse the property value. The parsing rules for the *value* attribute are:

Property Type	Key	Formatting Rules
text	0	Any arbitrary alphanumeric string
color	1	An integer RGB color value
font	2	A comma-separated string of the format "fontFamily,fontStyle,fontSize". See java.awt.Font for more details.

catalog_index

The catalog_index table describes the actions to be made available to the end user, and the organization of these actions in the application's report browser and report menu.

catalog_index table

Column Name	Type	Null	Key	Default	Description
username	char(12)		PRI		The name of the user this catalog is displayed for.
seq	int(11)		PRI	0	The order in which to display the items.
item	char(80)				The definition of an item.
type	tinyint(4)			0	0:(sub)menu item, 1:leaf node
classname	char(50)	Yes			The class to instantiate and execute when the item is selected.

The *item* attribute is used to describe the catalog item, its place in the catalog hierarchy, and the textual description to be displayed. The parsing rules for the item attribute are recursive and in the format:

```
root.[submenu.[...]]leaf:
```

For example, to describe an item which is in the Full Backups submenu of the Management root menu, the string would look like this:

```
Management.Full Backups.Report Name
```

hosts

The hosts table contains information about each host known to VERITAS NetBackup Advanced Reporter. This table consolidates information about all the hosts found by the data parser when it parses the NetBackup class definitions.

hosts table

Column Name	Type	Null	Key	Default	Description
hostname	varchar(63)		PRI		The simple host name.
domainname	varchar(191)	Yes			The name of the domain the host resides in. NULL if unknown.
ipaddr	char(16)	Yes			The IP address of the host.
role	int(11)	Yes			0: Master, 1: Media, 2: Client
type	char(80)	Yes			The hardware platform, taken from the client information in the NetBackup class definition.
organization	char(80)	Yes			Unused.
description	char(80)	Yes			Unused.
location	char(80)	Yes			Unused.



hosts table (continued)

Column Name	Type	Null	Key	Default	Description
spare1	char(80)	Yes			The client operating system, taken from the client information in the NetBackup class definition.
spare2	char(80)	Yes			Unused.
spare3	char(80)	Yes			Unused.
spare4	char(80)	Yes			Unused.
spare5	char(80)	Yes			Unused.
spare6	char(80)	Yes			Unused.

cpreferences

The cpreferences table contains information about

cpreferences table

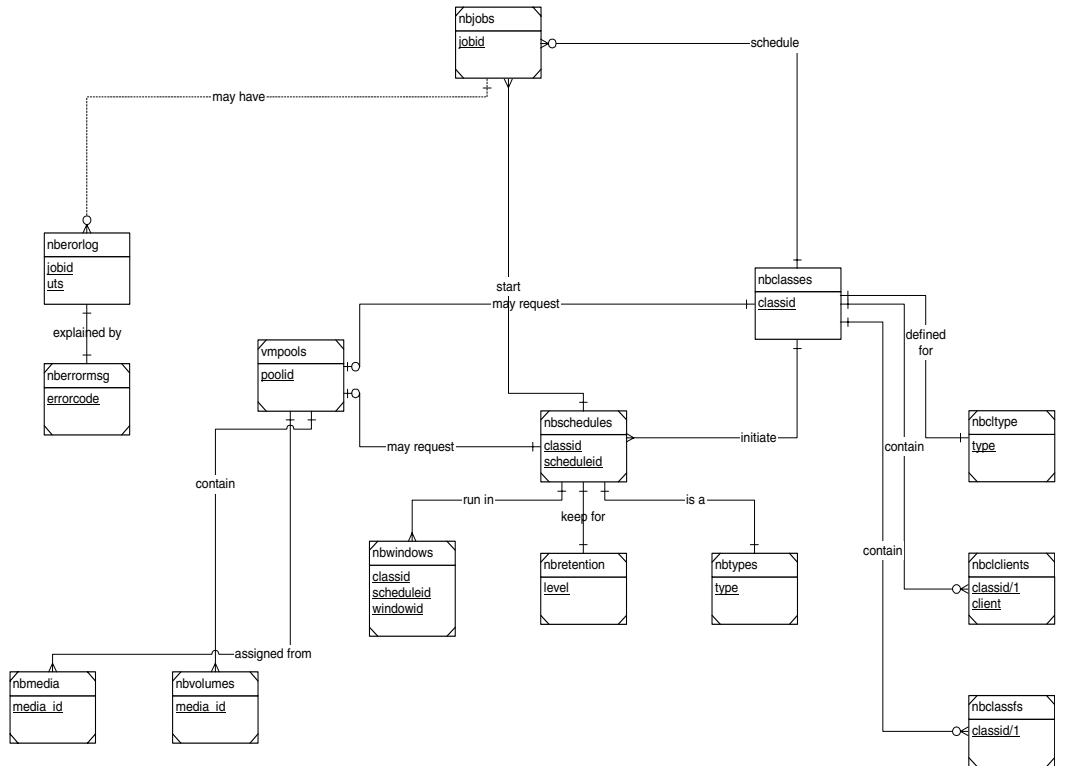
Column Name	Type	Null	Key	Default	Description
reportid	int (11)			0	
columnid	int (11)			0	
width	int (11)	YES			
position	int (11)	YES			
sort	tinyint (4)	YES			
visible	tinyint (4)	YES			

NetBackup Database Schema

This section of the appendix describes the tables found in NetBackup's database.

Entity Relationships

Here is a diagram of the relationships between database tables in NetBackup.



NetBackup Table Definitions

This section describes the fields in each NetBackup database table.

njobs

Contains one row for each NetBackup job. The data contained in this table is gathered from the NetBackup Job information provided by the `bpimagelist` binary provided with NetBackup. It is further supplemented with data culled from the error log which is extracted using the NetBackup binary `bpdbjobs`.

njobs table

Column Name	Type	Null	Key	Default	Description
jobid	int		PRI	.	The NBU job identifier. It is used to relate NetBackup jobs to entries in the <code>nerrorlog</code> table.
jobtime	datetime		MUL	0000-00-00	The start UTS of the job translated to DB date format.
type	char(1)		MUL		B: backup, A: archive, R: restore, V: verify, U: duplicate, I: import, D: dbbackup, L: vault, K: unknown
status	int(11)		MUL	0	-1: error occurred, refer to <code>nerrorlog</code> for NBU error code, 0: Successful job 1: Partially successful job
servername	varchar(255)		MUL		The name of the media server which executed the job.
clientname	varchar(255)		MUL		The name of the client the job was run on.
startuts	int(10) unsigned		MUL	0	the start UTS of the job.

nbjobs table (continued)

duration	int(10) unsigned	YES			The time, in seconds, the job took to complete.
classid	int(11)	N	MUL	0	The class identifier of the NetBackup Class the job ran in. Refers to classid column in nbclasses table. -1 or NULL means unknown.
scheduleid	int	N	MUL	0	The schedule identifier of the NetBackup Class-Schedule the job ran in. Refers to scheduleid column in nbschedules table. -1 or NULL means unknown.
windowid	tinyint(4)	YES		0	The window the job ran in. Digit from 0-6. 0 is Sunday. 10 or NULL means unknown.
windowdate	date	N	MUL	0000-00-00	Deprecated.
volume	bigint unsigned	YES			The amount of data, in Kbytes, the job processed.
throughput	mediumint	N			The average throughput, in Kbytes/second, the job achieved.
nfiles	int	YES		0	The number of files the job processed.
driveindex	tinyint(3) unsigned	YES			The index of the drive used for the job. Note Sometimes this field will be null for restore jobs because they do not consistently store this information.



nbjobs table (continued)

poolid	mediumint	N	MUL	0	The pool identifier of the Volume Pool the media was selected from. Relates to poolid in the vmpools table. -1 or NULL means unknown.
expiry	datetime	YES			The backup image expiry date.
media_id	varchar(255)	YES			The media ID of the media the image was written to. Relates to the media ID in both the nbmedia and nbvolumes tables.
stu	varchar(128)	YES			The name of the Storage Unit used by the job. Relates to the label column in the nbstu table.
streamid	int	YES	MUL		Primary job ID for a multistream job
num_retries	int	NO		0	Tally of "adding job to queue" messages
backup_id	varchar(255)	YES			Unique ID / link to image

nberrorlog

The nberrorlog table contains one row for each "EXIT STATUS" error (errors>1) reported by NetBackup. The data contained in this table is gathered from the NetBackup error log using the `bpdbjobs` binary provided with NetBackup.

nberrorlog

Column Name	Type	Null	Key	Default	Description
jobid	int(11)		PRI	0	The identifier of the job which incurred the error. Relates to nbjobs.jobid.



nberrorlog (continued)

Column Name	Type	Null	Key	Default	Description
uts	datetime		PRI	0	The data and time the error occurred.
status	smallint(6)	YES			The NetBackup error code. Relates to nberromsg.errorcode.

nberrormsg

The nberrormsg table is a lookup table which contains textual information about each NetBackup error code. Its contents are loaded from the *NetBackup Troubleshooting Guide*.

nberrormsg

Column Name	Type	Null	Key	Default	Description
errorcode	smallint(6)		PRI	0	The NetBackup error code.
description	varchar(255)				A short description of the error.
explanation	blob	YES			A detailed description of the error.
recommendation	blob	YES			The recommended troubleshooting actions.

nbclasses

The nbclasses table contains NetBackup class definitions. The data contained in this table are gathered from the NetBackup class definitions using the bpclist binary provided with NetBackup.



Both current and past class definitions are recorded in this table. During the data load process, each current class definition is compared with its copy in the database. If a discrepancy is found the existing row is marked as retired and new information is inserted.

nbclasses table

Column Name	Type	Null	Key	Default	Description
classid	int	N	PRI	auto inc.	The classid is an artificially generated key which provides a unique identifier.
classname	varchar(128)				The name NetBackup gives to the class.
active	tinyint(4)			0	-1:retired, 0:active, 1:inactive in NetBackup
type	tinyint(4)			0	The backup tape. It relates to the type column in the nbtypes table.
created	date			0000-00-00	The date the row was first inserted into the table.
retired	date	YES			The date the class information was superseded by a newer definition.
compressed	tinyint(4)	N		0	Answers the question, does this class perform data compression? 0: false, 1: true
priority	mediumint	N		0	Indicates the job priority. 0 = the default priority.
crossmntpts	tinyint(4)	N		0	Answers the question, should the job cross file-system mount points?
Follownfs	tinyint(4)	N		0	



nbclasses table (continued)

Column Name	Type	Null	Key	Default	Description
Trueimage	tinyint(4)	N		0	Answers the question: perform true image backups? 0:No, 1:Yes
Multistream	tinyint	N		0	1: multiple streams
Maxjobs	int	N		0	The maximum number of jobs that can be started at one time. (2147483647 indicates no maximum.)
poolid	mediumint	YES			The default media pool for this class. (-1 or NULL if unknown.)
stu	varchar(128)	YES			The name of the associated storage unit (see nbstu).

nbclassfs

The nbclassfs table contains a list of file systems to be backed up for each class defined in the nbclasses table.

nbclassfs table

Column Name	Type	Null	Key	Default	Description
classid	int	N	PRI	0	This is the class identifier. It relates to the classid column in the nbclasses table.
action	tinyint(4)	N		0	Reserved.



nbclassfs table (continued)

Column Name	Type	Null	Key	Default	Description
directive	varchar (255)	N	PRI		This is the name of the file system, or a NetBackup directive.
seqnum	int	N			This sequence number designates the order of directive as it appears in the file list for the policy.

nbclients

The nbclients table contains a list of NetBackup clients and information about the backup jobs for those clients.

nbclients table

Column Name	Type	Null	Key	Default	Description
classid	int	N	PRI	0	This is the link to the nbclasses table.
clientname	varchar (255)		PRI		This is the name of the client.
last_full_success_date	datetime				This is the date and time of the last full backup with status 0.
last_full_partial_date	datetime				This is the date and time of the last full backup with status 1.
last_full_failure_date	datetime				This is the date and time of the last full backup with an error status.
last_full_expires_date	datetime				This is the latest expiration date of a full backup with status 0.



nbclients table (continued)

Column Name	Type	Null	Key	Default	Description
last_incr_success_date	datetime				This is the date and time of the last incremental backup with status 0.
last_incr_partial_date	datetime				This is the date and time of the last incremental backup with status 1.
last_incr_failure_date	datetime				This is the date and time of the last incremental backup with error status.
last_incr_expires_date	datetime				This is the latest expiration date of an incremental backup with status 0.
stream_failure_count	int				

nbcltypes

The nbcltypes table contains a description of class types.

nbcltypes table

Column Name	Type	Null	Key	Default	Description
type	tinyint(4)		PRI	0	
description	char(25)	YES		0	



nbschedules

The nbschedules table contains a list of NetBackup schedules.

nbschedules table

Column Name	Type	Null	Key	Default	Description
classid	int	N	PRI	0	
scheduleid	int	N	PRI	0	
schedulename	varchar (128)				
type	tinyint(4)	YES			
frequency	int(11)	YES			
retentioncode	tinyint(4)	YES			
poolid	mediumint	N			
residence	varchar (40)	YES			
maxmpx	smallint				

nbwindows

The nbwindows table contains the NetBackup scheduling information for each NetBackup class definition.

nbwindows table

Column Name	Type	Null	Key	Default	Description
classid	int(11)	N	PRI	0	Class identifier. Relates to classid in nbclasses.
scheduleid	int(11)	N	PRI	0	Schedule identifier. Relates to scheduleid in nbschedules.
windowid	tinyint(4)		PRI	0	day of week window pertains to. Sunday = 0

nbwindows table (continued)

start	int(11)	YES			time of day window opens in seconds from midnight.
duration	int(11)	YES			length of window in seconds.
opentime	int(11)	YES			time window opens in number of seconds since Sunday 00:00
closetime	int(11)	YES			time window closes in number of seconds since Sunday 00:00

nbtypes

The nbtypes table is a lookup table that contains one row for each backup type provided by NetBackup;

nbtypes table

Column Name	Type	Null	Key	Default	Description
type	tinyint(4)		PRI	0	
description	char(25)	YES			

nbmedia

The nbmedia table contains media information from “bpmedialist -l”.

nbmedia table

Column Name	Type	Null	Key	Default	Description
media_id	char(6)		PRI		The media identifier.
partner_id	char(6)	YES			The partner identifier.
version	smallint	YES			The media version.
density_code	smallint	YES			The recording density.



nbmedia table (continued)

allocated	datetime	YES			The date this piece of media was allocated for use.
last_written	datetime	YES			The most recent date the piece of media was written to.
expiration	datetime	YES			The date the last image will expire.
last_read	datetime	YES			The last time the piece of media was read from.
kbytes	int	YES			The total amount of data stored on the media in Kbytes.
nimages	mediumint	YES			total number of images stored on media
vimages	mediumint	YES			The total number of virtual images stored on this media.
retention_level	smallint	YES			The retention level assigned to the media.
pool	mediumint	YES			The pool the media belongs to.
num_restores	smallint	YES			The number of restores performed against this media.
status	smallint	YES			The media status.
ismpx	tinyint	YES			Is this media multiplexed?
isfull	tinyint	YES			Is this media full?
frozen	tinyint	YES			Is this media frozen?
imported	tinyint	YES			Is this media imported?
suspended	tinyint	YES			Is this media suspended?



nbmedia table (continued)

hsize	smallint	YES			
ssize	smallint	YES			
l_offset	smallint	YES			
psize	smallint	YES			
reserved_off1	smallint	YES			Reserved.
reserved_off2	smallint	YES			Reserved.
res1	smallint	YES			Reserved
res2	smallint	YES			Reserved
res3	smallint	YES			Reserved
res4	smallint	YES			Reserved

nbretention

The nbretention table provides a description of NetBackup retention levels.nbstu

nbretention

Column Name	Type	Null	Key	Default	Description
level	tinyint(4)		PRI	0	The retention level.
duration	int(11)			0	The retention time in seconds.
description	char(40)	YES			A textual description of retention time.



nbstu

The nbstu table contains storage unit data from “bpstulist -l”.

nbstu table

Column Name	Type	Null	Key	Default	Description
label	varchar(128)		PRI		The name of storage unit.
type	tinyint(4)	YES			The type of storage unit.
host	varchar(255)		MUL		The host to which the storage unit is attached.
drives	tinyint(4)	YES			The number of drives in storage unit.
demand	tinyint(4)	YES			
density	tinyint(4)	YES			The recording density.
robot_type	tinyint(4)	YES			The robot type.
robot_number	tinyint(4)	YES			The robot number.
maxfragsize	smallint(6)	YES			The maximum permitted fragment size.
maxmpx	smallint(6)	YES			The maximum multiplex factor.
path	varchar(255)	YES			The device path (disk storage units only).
res1	tinyint(4)	YES			

nbvolumes

The nbvolumes table contains media information from “vmquery -a” and on Windows from “vmquery -a -o”.

nbvolumes table

Column Name	Type	Null	Key	Default	Description
media_id	char(6)		PRI		The media identifier.



nbvolumes table (continued)

media_type	char(20)				The type of media.
optical_partner	char(6)	YES			The name of the optical partner.
bar_code	char(16)	YES			The value of the bar code.
robot_type	char(5)	YES			The type of robot media is resident in.
robot_number	smallint	YES			The number of the robot media is resident in.
slot_number	smallint	YES			The slot media is in.
res2	smallint	YES			Reserved
res3	smallint	YES			Reserved
res4	smallint	YES			Reserved.
res5	smallint	YES			Reserved.
robot_host	varchar(255)	YES			The name of the host to which the robot is attached.
volume_group	char(10)	YES			The volume group to which the media belongs.
num_mounts	smallint	YES			The number of times the media has been mounted.
max_mounts	smallint	YES			The maximum number of permitted mounts.
version	smallint	YES			
vm_status	smallint	YES			
last_mounted	datetime	YES			The date the media was last mounted.
first_mounted	datetime	YES			The date the media was first mounted.



nbvolumes table (continued)

created	datetime	YES			The date the media was created.
assigned	datetime	YES			The date the media was assigned.
expiration	datetime	YES			The date the media expires.
poolname	char(20)				The name of pool the media belongs to.
description	char(30)	YES			A textual description of the media.
hostname	varchar(255)		PRI		The name of the host the media is assigned to.

vm pools

The vm pools table contains volume pool information from “vm pools –listall”.

vm pools table

Column Name	Type	Null	Key	Default	Description
poolid	mediumint	N		auto inc.	An artificially created unique key.
retired	date	YES			The date the pool data was retired and archived.
pool	mediumint	N		0	The VERITAS-assigned pool ID.
name	char(20)		MUL		The name of the pool.
description	char(30)	YES			A description of the pool.
host	varchar(255)	YES			The name of the host the pool is assigned to. NULL indicates ANY.



vmpools table (continued)

user	char(12)	YES			
ugroup	char(12)	YES			

nbcatalog

The nbcatalog table contains one row for each day with file counts and sizes from the first arloader execution on that day. The catalog backup columns may be updated by subsequent arloader runs.

nbcatalog table

Column Name	Type	Null	Key	Default	Description
catdate	date		PRI	0000-00-00	The date of the snapshot.
fullcompmb	int(11)	YES			Full compressed in KB.
fullcompent	int(11)	YES			Full compressed number of files.
fulluncompmb	int(11)	YES			Full uncompressed in KB.
fulluncompent	int(11)	YES			Full uncompressed number of files.
incrcompmb	int(11)	YES			Incremental compressed in KB.
incrcompent	int(11)	YES			Incremental compressed number of files.
incruncompmb	int(11)	YES			Incremental uncompressed in KB.
incruncompent	int(11)	YES			Incremental uncompressed number of files.
ubakcompmb	int(11)	YES			User directed compressed in KB.
ubakcompent	int(11)	YES			User directed compressed number of files.



nbcatalog table (continued)

ubakuncompmb	int(11)	YES			User directed uncompressed in KB.
ubakuncompnt	int(11)	YES			User directed uncompressed number of files.
othermb	int(11)	YES			Amount of overhead in KB.
backup_time	datetime	YES			The date and time of the latest catalog backup relative to the last loader run.
backup_media	varchar(255)	YES			The ID of the media containing latest catalog backup.

vmstat

The vmstat table contains system performance information obtained on Unix from the vmstat command.

vmstat table

Column Name	Type	Null	Key	Default	Description
stamp	timestamp(14)	YES	PRI		The time of the snapshot.
running	int(11)	YES			The number of running processes.
blocked	int(11)	YES			The number of blocked processes.
waiting	int(11)	YES			The number of waiting processes.
swap	int(11) unsigned	YES			The available swap space.
freemem	int(11) unsigned	YES			The available free memory.



vmstat table (continued)

pagein	int(11)	YES			The page in per second.
pageout	int(11)	YES			The page out per second.
disk1	int(11)	YES			The I/O per second.
disk2	int(11)	YES			The I/O per second.
disk3	int(11)	YES			The I/O per second.
disk4	int(11)	YES			I/O per second
usertime	tinyint(4)	YES			% CPU user
systemtime	tinyint(4)	YES			% CPU system
idletime	tinyint(4)	YES			% CPU idle

nblicense

The nblicense table contains license information obtained from NetBackup's `bpminlicense` command. Each row represents a given feature's license. The validity of a feature's license is stored in `license_chk`. Only feature licenses associated with NBAR will be stored in this table. If a feature has a `license_type` in the "permanent" category, the expiration dates will be zero-filled. This table will not keep history. If a feature has a license which supersedes another license for that same feature, only the most inclusive license for that feature will be stored in this table.

nblicense table

Column Name	Type	Null	Key	Default	Description
product_id	int	NO			VERITAS product ID. For example, 6 represents NBU
license_chk	tinyint	NO			1=valid license -1= invalid license
feature_id	int	NO	PRI		Will contain one of the following: 31 (NBAR); 28 (GDM server); 50 (GDM Managed Server); 21 (Unrestricted)



nblicense table (continued)

product_name	varchar(128)	NO			Such as "NetBackup Server"
product_vers	varchar(128)	NO			Product release (such as 5.0)
license_date	date	NO			The date this feature's license was added. (Used when calculating temporary license expiration dates.)
update_date	date	NO			A timestamp of when this row was last changed.
expiration_date	date	NO			A temporary license's expiration date, as calculated from the date the license was initially added.
firm_expiration	date	NO			A temporary license's hard-coded end-date. This date is not calculated but is hard coded into the feature's license key.
license_type	int	NO			SIG Component Group scheme for organizing licenses: 0=Demo; 1,2,3=Permanent; 4=NotForResale; 5=DemoExtension

nbjobs

The nbjobs table contains one row for each NBU stream.

nbjobs table

Column Name	Type	Null	Key	Default	Description
jobid	int	N	PRI		NBU job ID of the stream.
directive	varchar(255)	N			The file system or directory handled by the stream.



nbjobs table (continued)

seqnum	int	N	PRI		This sequence number designates the order of directive as it appears in the file list for the policy.
--------	-----	---	-----	--	---

nbcontrol

The nbcontrol table contains one record for each invocation of the data loader. It is used to avoid duplication of data in nbjobs, nbjobfs and nberrorlog.

nbcontrol table

Column Name	Type	Null	Key	Default	Description
run_init	datetime	YES			The date and time at which loader run started.
run_term	datetime	YES			The date and time at which loader run ended.
run_version	char(12)	YES			The loader version string.
run_type	char(1)	NO			NBAR / GDM
run_server	varchar(255)	YES			For rollup / consolidation.
job_init	datetime	YES			The date and time of first image or error record loaded.
job_term	datetime	Y			The date and time of last image or error record loaded.
job_server	varchar(255)	Y			For rollup / consolidation.
nbu_version	char(12)	Y			The NetBackup version.
hoursago	smallint	Y			From the command line.
pool_count	int	Y			The number of rows in the vmpools table.
media_count	int	Y			The number of rows in the nbmedia table.
stu_count	int	Y			The number of rows in the nbstu table.



nbcontrol table (continued)

volume_count	int	Y			The number of rows in the nbvolumes table.
class_count	int	Y			The number of rows in the nbclasses table.
image_count	int	Y			
error_count	int	Y			
job_count	int	Y			The number of inserts to nbjobs during this run.

nbcache

The nbcache table contains data extracted from the NBU error log for jobs which were in progress when the NBAR data loader executed.

nbcache table

Column Name	Type	Null	Key	Default	Description
create_run_time	datetime				The time at which the loader created the row.
modify_run_time	datetime				The time at which the loader last modified the row.
delete_run_time	datetime				The time at which the loader moved the row to nbjobs.
create_job_time	datetime				The time of the berror record which created row.
modify_job_time	datetime				The time of the berror record which last modified the row.

nbcache table (continued)

jobid	int(11)		PRI	auto inc.	An artificially created job identifier. Used to relate NetBackup jobs to entries in the nberrorlog table.
jobtime	datetime		MUL	0000-00-00	The start UTS of the job translated to DB date format.
type	char(1)		MUL		B: backup, R: restore
status	int(11)		MUL	0	-1: error occurred, refer to nberrorlog for NBU error code, 0: Successful job 1: Partially successful job
servername	varchar(255)		MUL		The name of the media server which executed the job.
clientname	varchar(255)		MUL		The name of the client the job was run on.
startuts	int(10)unsigned		MUL	0	The start UTS of the job.
duration	int(10)unsigned			0	The time, in seconds, the job took to complete.
classid	int	N	MUL	0	The class identifier of the NetBackup Class the job ran in. Refers to classid column in nbclasses table. -1 or NULL if unknown.
scheduleid	int	N	MUL	0	The schedule identifier of the NetBackup Class-Schedule the job ran in. Refers to scheduleid column in nbschedules table. -1 or NULL if unknown.



nbcache table (continued)

windowid	tinyint(4)	Y		0	The window the job ran in. Digit from 0-6. 0 is Sunday. 10 or NULL if unknown.
windowdate	date	N	MUL	0000-00-00	Deprecated.
volume	int(10)unsigned			0	The amount of data, in Kbytes, the job processed.
throughput	smallint(6)			0	The average throughput, in Kbytes/second, the job achieved.
nfiles	mediumint(9)			0	The number of files the job processed.
driveindex	tinyint(3) unsigned	YES			The index of the drive used for the job.
poolid	mediumint	N	MUL	0	The pool identifier of the Volume Pool the media was selected from. Relates to poolid in the vmpools table. -1 or NULL if unknown
streamid	int		MUL		The primary job ID for a multistream job.
filesystem	varchar(255)	Y			The file system name.
num_retries	int	N			The tally of "adding job to queue" messages.
backup_id	varchar(255)	Y			A unique ID/ link to image



nbarlog

The nbarlog table contains loader error and diagnostic messages

nbarlog table

Column Name	Type	Null	Key	Default	Description
logtime	datetime	N			The timestamp of the message.
severity	tinyint	Y			1:trace 2:engineering 4:warning 8:error 12:severe 16:fatal
program	char(10)	Y			
helplink	int	Y			The key to documentation of the cause of the error and remedial or diagnostic action.
message_text	varchar(255)	Y			The text of the message.

nbconfig

The nbconfig table contains a log of configuration parameters from nbar.cnf. Keyword-value pairs in nbar.cnf are compared to rows in nbconfig each time arloader executes. A new keyword causes addition of a row to nbconfig. A modified value for an existing keyword causes the row containing the old value to have its term_time set, and a new row to be created containing the new value.

nbconfig table

Column Name	Type	Null	Key	Default	Description
init_time	datetime	N	2		The timestamp at which keyword-value pair was first found.
term_time	datetime	N			The timestamp at which keyword-value pair was last found.
keyword_text	varchar(255)	N	1		The text of the keyword.



nbconfig table (continued)

value_text	varchar(255)	Y			The value text.
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nblookup

The nblookup table is a general-purpose lookup table. Each “table” is identified by a unique table_name, and each row within that table by a unique lookup_code. The string in lookup_text will generally be an expansion of the code. For example, in table_name “robot_type” the lookup_code “TLD” might have a lookup_text value “DLT Library”. In a hypothetical “airport” table, lookup_code “BOS” would have lookup_text “Logan International Airport, Boston, Massachusetts”. This table may eventually be used for localization.

nblookup table

Column Name	Type	Null	Key	Default	Description
table_name	char(12)	N	1		The name of the (sub) table.
lookup_code	char(12)	N	2		The unique key value for the row.
lookup_text	varchar(255)	N			The text of the keyword.

nbdrive

The nbdrive table contains one row for each backup device attached to a master or media server, refreshed by arloader during each execution from the output of “vmopr cmd -xdraw”.

nbdrive table

Column Name	Type	Null	Key	Default	Description
media_server	varchar(255)	N			The fully-qualified name of a media server.
version	char(20)	Y			For example, DRIVESTATUS3.2
drive_index	tinyint	N			For example, 0, 1, 2, ...



nbdrive table (continued)

type	char(5)	Y			For example, hcart, dlt, ...
control	char(8)	Y			For example, DOWN, DOWN_LMF, AVR, ...
user	char(8)	Y			For example, NULL, root, ...
rvsn	char(6)	Y			
evsn	char(6)	Y			
request_id	char(8)	Y			
robot_type	char(5)	Y			
robot_number	tinyint	Y			
flags	char(8)	Y			
drive_name	varchar(255)	Y			
assigned_host	varchar(255)	Y			
scan_host	varchar(255)	Y			
last_cleaning	datetime	Y			
comment	varchar(255)	Y			



GDM Table Definitions (on NBAR server)

Type 1 – GDM Tables on the NBAR Master Servers

These tables reside on each NBU master server in the NBAR GDM domain and contain summary information about the NBU activities happening on that local server. These tables are created and maintained by `arpusher.pl`.

gdmnbstat

The `gdmnbstat` table is used to roll up information to be used on the GDM Global Error Details report. For every unique status code issued on the NBU master, there will exist a row showing how many jobs completed with that status code for the given report day.

`gdmnbstat` table

Column Name	Type	Null	Key	Default	Description
<code>reportDay</code>	<code>date</code>	No	PRI		The day associated with this NBU data.
<code>statusCode</code>	<code>tinyint</code>	No	PRI	0	The NetBackup status code.
<code>jobCount</code>	<code>int</code>	No		0	The number of jobs having this NBU status code.
<code>pushFlag</code>	<code>tinyint</code>	No	MUL	0	The flag to tell the <code>arpusher</code> program whether this row should be inserted (1) on GDM server or updated (2) on GDM server.
<code>lastUpdate</code>	<code>timestamp(14)</code>				The timestamp of the latest activity on this row.



gdmsitsiz

The gdmsitsiz table is used to roll up information to be used on the GDM Global Site Size report. A row exists for each day showing the size of the NBU catalog.

gdmsitsiz table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data.
catalogSize	int	No		0	The NBU catalog size in Kbytes.
dbFileCount	int	No		0	The number of .f files in the NBU catalog.
classCount	int	No		0	The total number of classes.
clientCount	int	No		0	The total number of clients.
pushFlag	tinyint	No	MUL	0	A flag to tell the arpusher program whether this row should be inserted (1) on the GDM server or updated (2) on the GDM server.
lastUpdate	timestamp(14)				The timestamp of the latest activity on this row.

gdmbkgrow

The gdmbkgrow table is used to roll up information to be used on the GDM Global Backup Growth report. For every media server running on this master server, there will exist a row showing how much volume has been backed up for a given day.

gdmbkgrow table

Column Name	Type	Null	Key	Default	Description
-------------	------	------	-----	---------	-------------



gdmdbkgrow table (continued)

reportDay	date	No	PRI		The day associated with this NBU data.
mediaServer	varchar(255)	No	PRI		The media server associated with this backup data.
volume	bigint unsigned	No		0	The amount of data backed up in Kbytes.
fileCount	int	No		0	The number of files backed up.
stunitCount	smallint	No		0	The number of storage units defined to this media server.
driveCount	smallint	No		0	The number of drives defined to this media server.
pushFlag	tinyint	No	MUL	0	A flag to tell the arpusher program whether this row should be inserted (1) on GDM server or updated (2) on GDM server.
lastUpdate	timestamp(14)				The timestamp of the latest activity on this row.

gdmmeduse

The gdmmeduse table is used to roll up information to be used on the GDM Global Media Usage report. For every unique robot number/media type combination on this master server, there will exist a row containing information about its media inventory for the given day.

gdmmeduse table

Column Name	Type	Null	Key	Default	Description
-------------	------	------	-----	---------	-------------



gdmmeduse table (continued)

reportDay	date	No	PRI		The day associated with this NBU data.
deviceKey	smallint	No	PRI		An artificial key to order media into robot/media categories.
pushFlag	tinyint	No	MUL	0	A flag to tell the arpusher program whether this row should be inserted (1) on GDM server or updated (2) on GDM server.
lastUpdate	timestamp				The timestamp of the latest activity on this row.
robotNumber	smallint				
robotType	char(5)	No			The NBU code that identifies the robot type.
mediaType	char(20)	No			The NBU code that identifies the media type.
total	int	No		0	The total number of media.
available	int	No		0	The number of available media.
active	int	No		0	The number of media assigned to NBU.
fullCount	int	No		0	The number of full media assigned to NBU.
frozen	int	No		0	The number of frozen NBU media.
suspended	int	No		0	The number of suspended NBU media.



gdmmeduse table (continued)

recycle	int	No		0	The number of full NBU media qualifying for being recycled as of a given date.
fullVolumeAvg	int	No		0	An average volume (in Kbytes) of all full NB media.

gdmstatus

The gdmstatus table holds status information to be used on the Daily GDM Rollup report. A row is created each time the server successfully rolls up its NBU data and pushes that data to the GDM server.

gdmstatus table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data.
startProc	datetime	No	PRI		The time this iteration of rollup processing began (local server time).
endProc	datetime	No			The time this iteration of rollup processing completed (local server time).
jobsInProgress	smallint	No		0	The number of jobs in nbcache during this iteration of rollup processing.
gmtOffset	int	No		0	+/- minutes difference between a managed server's time and the GDM server's time.

gdmstatus table (continued)

pushFlag	tinyint	No	MUL	0	A flag to tell the arpusher program whether this row should be inserted (1) or updated (2) on GDM server.
lastUpdate	timestamp(14)				The timestamp of the latest activity on this row.

gdmsysinf

The gdmsysinf table holds product version information to be used in the GDM System Information report. This report has been deferred.

gdmsysinf table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data
nbarVersion	char(12)	No	PRI		The NBAR version information.
nbuVersion	char(12)	No			The NBU version information.
nbuDcBs	tinyint	No		0	A Boolean describing this installation of NBU.
pushFlag	tinyint	No		0	A flag to tell the arpusher program whether this row should be inserted (1) or updated (2) on the GDM server.
lastUpdate	timestamp(14)				The timestamp of the latest activity on this row.



GDM Table Definitions (on GDM server)

Type 2 – GDM Tables on the GDM server.

These tables reside on the GDM server only. They contain all of the data in the type 1 GDM tables from all of the NBAR servers in the NBAR GDM domain. These tables are created and maintained by arpusher.

nbserver

The nbserver table is a special case. It is updated by the customer using a configuration utility. It contains information needed by about the servers being managed in the GDM domain. This table resides on the GDM server only.

nbserver table

Column Name	Type	Null	Key	Default	Description
masterServer	varchar(255)	No	PRI		The name of the managed server being controlled by the GDM server.
mysqlPortNum	smallint	No		0	Number of the mysql port.
rollupSched	time	No			The approximate time this managed server will start the arpusher program each day.
dormantThresh	smallint	No		0	The number of days to be added to the media expiration date before a piece of media is considered a candidate for recycling.
sord	time	No			An acronym for the Start-Of-Reporting-Day. A local cutoff time for this server that determines what reportDay to place NBU activity.



nobserver table (continued)

lastUpdate	timestamp				The timestamp of the latest activity on this row.
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momnbsat

The momnbsat table is used to summarize information onto the master of masters (GDM server) to be used to create the GDM Global Error Details report. For every unique status code issued on each NBU master server, there will exist a row showing how many jobs completed with that status code on that day on that server.

momnbsat table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data.
masterServer	varchar(255)	No	PRI		
statusCode	smallint	No	PRI	0	The NBU status code.
jobCount	int	No		0	The number of jobs having this NBU status code.
lastUpdate	timestamp(14)				The timestamp of the latest activity on this row.

momsitsiz

The momsitsiz table is used to summarize information onto the GDM server to be used to create the GDM Global Site Size report. A row exists for each master server for each day showing the size of the NBU catalog.

momsitsiz table

Column Name	Type	Null	Key	Default	Description
-------------	------	------	-----	---------	-------------



momsitsiz table (continued)

reportDay	date	No	PRI		The day associated with this NBU data.
masterServer	varchar(255)	No	PRI		
catalogSize	int	No		0	The NBU catalog size in Kbytes.
dbFileCount	int	No		0	The number of .f files in the NBU catalog.
classCount	int	No		0	The total number of classes.
clientCount	int	No		0	The total number of clients.
lastUpdate	timestamp				The timestamp of the latest activity on this row.

mombkgrow

The mombkgrow table is used to summarize information onto the GDM server to be used to create the GDM Global Backup Growth report. For every media server running on every master server in the GDM domain, there will exist a row showing how much volume has been backed up on a given day.

mombkgrow table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data.
masterserver	varchar(255)	No	PRI		
mediaServer	varchar(255)	No	PRI		The media server associated with this backup data.
volume	bigint unsigned	No		0	The amount of data backed up in Kbytes.



mombkgrow table (continued)

fileCount	int	No		0	The number of files backed up.
stunitCount	smallint	No		0	The number of storage units defined to this media server.
driveCount	smallint	No		0	The number of drives defined to this media server.
lastUpdate	timestamp(14)				Timestamp of latest activity on this row.

mommeduse

The mommeduse table is used to summarize information onto the GDM server to be used to create the GDM Global Media Usage report. For each day, for every unique robot number/media type combination associated with every master server in the GDM domain, there will exist a row containing information about the media inventory.

mommeduse table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data.
masterServer	varchar(255)	No	PRI		
deviceKey	smallint	No	PRI		An artificial key to order media into robot/media categories.
robotNumber	smallint				
robotType	char(5)	No			An NBU code identifying robot type.
mediaType	char(20)	no			An NBU code identifying media type.
total	int	No		0	The total number of media.



mommeduse table (continued)

available	int	No		0	The number of available media.
active	int	No		0	The number of m.media assigned to NBU
fullCount	int	No		0	The number of full media assigned to NBU.
frozen	int	No		0	The number of frozen NBU media
suspended	int	No		0	The number of suspended NBU media.
recycle	int	No		0	The number of full NBU media qualifying for being recycled as of a given date.
fullVolumeAvg	int	No		0	An average volume (in Kbytes) of all full NB media.
lastUpdate	timestamp(14)				The timestamp of the latest activity on this row.

momstatus

The momstatus table is used to summarize information onto the GDM server to be used to create the Daily GDM Rollup report. A row exists for each time a master server successfully connects and pushes its NBAR data to the GDM server.

momstatus table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data.
masterServer	varchar(255)	No	PRI		



momstatus table (continued)

startProc	datetime	No	PRI		The date this iteration of rollup processing began (local server time).
endProc	datetime	No			The date this iteration of rollup processing completed (local server time).
jobsInProgress	smallint	No		0	The number of jobs in nbcache during this iteration of rollup processing.
lastUpdate	timestamp(14)				The timestamp of the latest activity on this row.

momsysinf

The momsysinf table holds product version information to be used in the GDM System Information report. This report has been deferred.

momsysinf table

Column Name	Type	Null	Key	Default	Description
reportDay	date	No	PRI		The day associated with this NBU data.
masterServer	varchar(255)	No	PRI		
nbarVersion	char(12)	No			The NBAR version information.
nbuVersion	char(12)	No			The NBU version information.
nbuDcBs	tinyint	No		0	A Boolean describing NBU.



momsysinf table (continued)

pushFlag	tinyint	No		0	A flag to tell the arpusher program whether this row should be inserted (1) or updated (2) on GDM server.
lastUpdate	timestamp				The timestamp of the latest activity on this row.

Index

A

- access to GDM data 24, 33
- accessibility xxi
- Active Policy Definitions report 150
- administrative tasks 53
- application control schema 189
- architecture overview 7
 - in GDM environment 7
- arconfig examples 58
- arconfig manpage 55
- arconfig syntax 54
- ardumplog 78
- Assigned Media List 140
- attributes tab 48
- Available Media List 138

B

- backing up the database 75
- Backup Details by Policy report 124
- Backup Job Schedule Forecast report 151
- backup jobs
 - counting 46
- browser versions 18

C

- Catalog Usage reports 110
- changing
 - reference date 43
 - report timeframe 44
- choosing a master server 38
- Client History Lookup report
 - see Client Job History report
- Client Job History report 159
- Clients at Risk report 133
- cluster configuration
 - and UNIX installation 25
 - and Windows installation 33
 - planning 22
- clustered environment

- nbar.conf 53
- configuration utility
 - accessing 54
 - changing local information 58
 - creating a GDM server 59
 - deleting a server 60
 - displaying details 58
 - joining a GDM domain 60
 - modifying information 54
 - modifying risk thresholds 59
 - modifying threshold options 60
 - overview 53
 - scheduling data collection 61
- configuration utility examples 58
- configuration utility manpage 55
- Consolidated Error Log 126
- counting backup jobs 46
- creating a GDM server 59
- Current Vaulting Status report 147

D

- daemons, stopping 86
- Daily GDM Rollup report 185
- data collection 5
 - scheduling 61
- data collection and installation 20
- data loader, timing 5
- database
 - backing up 75
 - conversion 20
 - description of tables 189
 - GDM table definitions 220
 - GDM tables on GDM server 226
 - NBAR schema 187
 - NetBackup schema 193
 - NetBackup table definitions 194
 - relationships between tables 193
 - requirements 188
 - space required 19



- troubleshooting 91
- database export utility 81
 - troubleshooting 84
- deleting a server 60
- Disk Space report 110
- disk space requirements 19
- displaying configuration details 58
- Drive Statistics report 157
- Drive Throughput report
 - see Drive Statistics report
- dynamic report criteria selection 41

E

- Ejected Media Status 147
- Error Log Summary by Client report 115
- Error Log Summary report 113
- Error Logs 113
- Expired Media List 142

F

- Full Backup Data Volumes Report 98
- Full Backup Data Volumes report 98
- Full Backup File Volumes report 99
- Full Backup Job Durations report 100
- Full Backup reports 95
- Full Job Completion Summary report 96
- Full Tapes Utilization report 146

G

- GDM configuration
 - planning 22
- GDM database table definitions 220
- GDM domain
 - creating a GDM server 59
 - deleting a server 60
 - joining 60
- GDM reports
 - collection issues 5
 - glossary 170
 - overview 169
 - tolerance levels 170
- GDM server
 - modifying risk thresholds 59
 - modifying threshold options 60
- GDM table definitions 226
- Global Backup Growth report 179
- Global Error Details report 176
- Global Media Usage report 182
- Global Site Size report 172
- glossary. *See* NetBackup help. xxi

H

- help for arconfig 55
- Hosts under NetBackup Management
 - report 132
- hover labels 40

I

- Incremental Backup Data Volumes
 - report 103
- Incremental Backup File Volumes report 104
- Incremental Backup Job Durations
 - report 105
- Incremental Backup reports 101
- Incremental Job Completion Status
 - report 101
- installation 15
 - and data collection 20
 - in a UNIX cluster 25
 - in a Windows cluster 33
 - uninstalling on UNIX 29
 - uninstalling on Windows 36
 - UNIX procedure 26
 - UNIX requirements 23
 - Windows procedure 34
 - Windows requirements 31

J

- Job Details for Policy report 166
- job properties dialog 49
- joining a GDM domain 60

L

- license keys 21
- licensing issues 85
- location of logs 77
- log files
 - created by web GUI engine 79
- logging utilities
 - overview 77
- logs
 - ardumplog 78
 - location 77
 - purging 78
 - retention level 78

M

- management reports, overview 95
- Master Server System Performance
 - report 156
- master server, choosing 38
- Media Errors report 128



-
- miscellaneous reports, overview 162
 - modifying
 - configuration information 54
 - local configuration information 58
 - risk thresholds 59
 - threshold options 60
 - multistreamed job properties dialog 51
- N**
- NBAR overview 1
 - NBAR reports
 - determining timeframe 42
 - introduction 37
 - printing 75
 - report criteria 41
 - report links 40
 - nbar.conf
 - in a cluster 53
 - nbardex 81
 - NetBackup database schema 193
 - NetBackup database table definitions 194
 - NetBackup Troubleshooting Guide 52
 - Number of Catalog Files report 112
- O**
- Offsite Vaulting List 144
- P**
- policy properties dialog 48
 - printing reports 75
 - properties dialog
 - job 49
 - multistreamed jobs 51
 - policy 48
 - purging logs 78
- R**
- reference date, changing 43
 - report links 40
 - report timeframe
 - changing 44
 - determining 42
 - Restore Data Volumes report 109
 - Restore Details by Client report 130
 - Restore Job Summary report 107
 - Restore Jobs reports 107
 - retaining logs 78
- S**
- scheduling data collection 61
 - selecting report criteria 41
 - services, stopping 86
 - side notes 170
 - Site Details Job List 122
 - Site Summary report 117
 - Solaris upgrade failures 88
 - stopping daemons or services 86
 - Summary of Status Code for report 165
 - Summary of Status Code report 163
 - Summary of Status Codes for report 164
 - Supported clusters 17
 - supported platforms 15
 - browser versions 18
 - client 18
 - server 16
- T**
- timing of data loader 5
 - tolerance levels 170
 - troubleshooting
 - access to GDM data 24, 33
 - database issues 91
 - licensing issues 85
 - report issues 93
- U**
- uninstalling
 - on Windows 36
 - UNIX 29
 - upgrade failures
 - Solaris 88
- W**
- web console
 - hover labels 40
 - report display area 40
 - report tree 39
 - web GUI
 - exploring 37
 - log files 79
 - why use NBAR 2
 - Window Usage by Backup Policy report 154
 - Window Utilization report 153

