

BrightStor™ Resource Manager

Getting Started

62



Computer Associates™



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Glossary

Welcome

This book is designed to introduce BrightStor Resource Manager to you, in an efficient and visual manner. By the time you have finished reading this guide, you will have an overview of the wide scope of the product and its usability will be familiar to you. It is important to us that you feel comfortable with BrightStor Resource Manager before you begin to use it.

BrightStor Resource Manager

The growth of distributed data has increased so rapidly and dramatically, that most organizations now find themselves without the time or expertise necessary to effectively manage the enormous amount of data for which they are responsible.

Not having sufficient knowledge about the distributed storage environment places critical corporate data at risk. BrightStor Resource Manager provides you with the information you need to effectively manage distributed storage, enabling you to administer your storage through a central management facility. BrightStor Resource Manager significantly simplifies the otherwise complex task of gathering the information you require in order to manage your distributed storage environment, including:

- The data you have
- Where data is located
- How and when data is being used

With that information, you can measure the importance of the data to your organization and, through analysis, apply the principles of system-managed storage to manage your distributed storage environment.

BrightStor Resource Manager Benefits

BrightStor Resource Manager helps you fine-tune and optimize your storage infrastructure to:

- Ensure continuous data access
- Decrease hardware and labor costs
- Improve capacity planning
- Reduce consumption and help alleviate performance issues

With BrightStor Resource Manager you have a single comprehensive system to automatically monitor and manage critical and complex enterprise-wide storage environments. Use BrightStor Resource Manager to access a consolidated view of all networked storage resources across multiple platforms within your enterprise.

BrightStor Resource Manager provides the information and control you need to optimize storage resources across the enterprise. With BrightStor Resource Manager, you can manage resources like file systems, databases, RAID array devices, tapes, drives, and servers and manage storage across multiple platforms including Windows 2000, Windows NT, NetWare, Linux, UNIX, and OS/390. Use BrightStor Resource Manager to fill the holes that are apparent in other storage management offerings, thus providing greater efficiency throughout the storage operation.

BrightStor Resource Manager Advantages

Some of the strengths and advantages of BrightStor Resource Manager are:

- Yields tremendous productivity improvements because you can easily see exception conditions and take action quickly
- Delivers immediate savings in storage resource usage and provides the ability to make more cost-effective capacity planning and purchasing decisions in the future
- Facilitates rapid identification of problems making it possible to address those problems before servers crash or crucial data is lost
- Reduces Total Cost of Ownership (TCO) by significantly reducing storage management costs
- Makes it easy to identify and manage critical data
- Adjusts to business needs
- Provides power to control growing Windows 2000, Windows NT, NetWare and UNIX storage resources
- Provides reporting to proactively support problem solving before a crisis occurs and delivers the capability to run a constant, unattended, operation
- Provides information about the storage system so that storage administrators can effectively and efficiently make business-critical decisions before any detrimental effects occur
- Eliminates unnecessary CPU cycles and processing because tasks are executed only when necessary
- Provides flexible rules-based management that is user defined, not vendor imposed, enabling you to tailor the system to the needs of your enterprise

BrightStor Resource Manager New Features

The following features are new with BrightStor Resource Manager 6.2:

- **New Microsoft Exchange Support Option.** Provides powerful enterprise-wide browsing, reporting, and monitoring of Microsoft Exchange server and objects. The application support includes message alerts for detection of storage related errors, storage related information on emails and attachments accumulated on servers, public and private folders, and user mailboxes.
- **BrightStor Enterprise Backup Support.** Provides a centralized backup and recovery reporting, monitoring, and browsing function for BrightStor Enterprise Backup.
- **Enhanced support for Tivoli Storage Manager (formerly IBM ADSM).** Provides an enhanced enterprise-wide monitoring, reporting, and error recovery of data collection process for TSM backup and recovery application, as well as faster installation and configuration of TSM components.

Significantly faster and simplified installation and configuration of TSM components, which are now faster and easier to use. Through dramatically enhanced automatic error recovery, this release provides a significantly more robust and reliable support for TSM environment than ever before.

In addition, new instrumentation, which taps into the TSM Account Log, provides vital information about your TSM environment that was not previously available.

- **New Installation and Configuration Wizards.** New, easy to use wizards are provided to assist you in the areas of installation, configuration, and registering servers to be managed.

Through these wizards, the installation and configuration steps are dramatically simplified, thus facilitating rapid set up and deployment. For example, these new wizards provide mechanisms to automatically discover and install management agents on Windows NT, Windows 2000, and UNIX.

- **Enhanced Windows 2000 Support.** This latest release of BrightStor Resource Manager includes support for Windows 2000 and inherent NTFS 5 support including capabilities such as physical and logical volume mapping, data collection service for Domain Users and user groups, Microsoft Distributed File System (DFS) support, and reporting on quota limits.

The Enhanced Windows 2000 support includes:

- Information on Domain Users and User Groups
- Quota limits reports
- Support for Microsoft Distributed File System

- **Usability feature enhancements.** Improvements include:
 - **Automatic start up of service launchers.** Eliminates what would otherwise be a manual startup task, and makes it easier to quickly set up the process of data collection and other services.
 - **New Managed Object Properties Window.** Provides more information on managed objects with additional improvements to the information update mechanism.
 - **Drag-and-Drop capabilities in the GUI.** Improves user interface ease of use through additional drag and drop capabilities.
 - **Enhance AIX Information.** Provides information on AIX physical disks that are not associated to any volume groups, as well as improved data collection service for information on AIX volume management.

CA Services: Enabling Solutions Through Experience

When it comes to getting on the information fast track, CA Services can recommend and install a full suite of portal and knowledge management solutions to keep your business moving. And our associates offer the proprietary know-how on custom-fitting your enterprise for solutions ranging from life cycle management, data warehousing, and next-level business intelligence. Our experts will leave you with the technology and knowledge tools to fully collect, exploit, and leverage your data resources and applications.

CA Education Services

Computer Associates Global Education Services (CA Education) offerings include instructor-led and computer-based training, product certification programs, third-party education programs, distance learning, and software simulation. These services help to expand the knowledge base so companies can use Computer Associates products more efficiently, contributing to their greater success. CA Education has been developed to assist today's technologists in everything from understanding product capabilities, to implementation and quality performance. Because the vast community of education seekers is varied, so too are methods of instruction offered by Computer Associates. CA Education is committed to providing a variety of alternatives to traditional instructor-led training, including synchronous and asynchronous distance learning, as well as Unicenter simulation.

For training that needs to be extended to a wider audience – for a fraction of the cost and logistical hassle of sending everybody away to a class – CA Education offers excellent distance learning options.

Computer Associates: The Software That Manages eBusiness

The next generation of eBusiness promises unlimited opportunities by leveraging existing business infrastructures and adopting new technologies. At the same time, extremely complicated management presents challenges — from managing the computing devices, to integrating and managing the applications, data, and business processes within and across organizational boundaries — and looks to CA for the answers. CA has the solutions available to help eBusinesses address these important issues. Through industry-leading eBusiness Process Management, eBusiness Information Management, and eBusiness Infrastructure Management offerings, CA delivers the only comprehensive, state-of-the-art solutions, serving all stakeholders in this extended global economy.

For More Information

After walking through this *Getting Started* guide, you can refer to the numerous resources available to you for additional information. Your BrightStor Resource Manager contains useful instructional documents that showcase your software as well as detailed explanations about the product's comprehensive, feature-rich components. In addition, the online help system at esupport.ca.com offers procedural information and answers to any questions you may encounter.

Architecture and Installation

This chapter provides a high level description of the basic BrightStor Resource Manager architecture and components. This chapter also contains the instructions to prepare and install BrightStor Resource Manager, upgrade from a previous version, and register BrightStor Resource Manager and its options.

BrightStor Resource Manager Components

BrightStor Resource Manager comprises the following major components:

- **Application Server** – controls and schedules the activities of all other BrightStor Resource Manager Open Systems components, wherever they reside.
- **Windows Client** – the main user interface that provides access to BrightStor Resource Manager functions.
- **Monitor** – utility that monitors the execution of BrightStor Resource Management services on Open Systems.
- **BrightStor Resource Manager Database** – contains information about all network and managed objects monitored by BrightStor Resource Manager.
- **Launchers** – handle the execution of the storage management runtime operations requested by the Application Server.

- **Runtime Services** – services activated on a given computer by a Launcher.
- **Agent** – platform-specific BrightStor Resource Manager software executed on managed computers.
- **Utilities** – command line utilities (VDPXSRV.EXE and SVDPRR.EXE) and other programs used to perform storage management functions. For more information on Utilities, please refer to Utilities in the BrightStor Resource Manager online Help system.

For more information on all these software components, please refer to the *BrightStor Resource Manager User Guide*.

BrightStor Resource Manager Environment

BrightStor Resource Manager provides consolidated and centralized storage management capabilities for the enterprise.



BrightStor Resource Manager Options

This section describes various options you can choose when installing BrightStor Resource Manager.

Microsoft Exchange

Provides application support for Microsoft Exchange including message alerts issued upon detection of storage related errors.

Provides storage consumption related information organized by server, including visibility into consumption at the level of public and private folders and user mailboxes.

BrightStor Enterprise Backup

Provides centralized backup and recovery reporting and monitoring and browsing functions for BrightStor Enterprise Backup to:

- Analyze backup windows to facilitate optimization of those windows
- Centralize the management and administration of backup and restore activities
- Provide for unified viewing and reporting capabilities for all backup servers in the enterprise, as done for all other backup management objects (Alexandria and Tivoli Storage Manager, formerly IBM ADSM)

ARCserve 2000

Provides centralized backup and recovery reporting and monitoring and browsing functions for the ARCserve product to:

- Analyze backup windows to optimize those windows
- Centralize the management and administration of backup and restore activities

- Provide for unified viewing and reporting capabilities for all backup servers in the enterprise, as done for all other backup management objects (Alexandria and Tivoli Storage Manager, formerly IBM ADSM)

Alexandria

Provides centralized backup reporting, analysis, and planning functions for the Alexandria product to facilitate:

- Fine-tuning of performance
- Centralized monitoring of backup and restore operations
- Analysis and optimization of backup windows

Tivoli Storage Manager (formerly IBM ADSM)

Provides support that increases data protection and presents a comprehensive snapshot of TSM across multiple TSM servers and clients. These unique capabilities provide essential functionality to TSM environments that would otherwise be missing, including:

- Reporting
- Tape resource management
- Automation
- Capacity planning
- Performance monitoring
- Verification of backup to facilitate increased levels of data protection

Oracle

Provides support to increase performance, reduce costs, and enhance protection of critical Oracle databases.

Users can analyze and manage Oracle storage resources in isolation or as part of a larger picture that includes correlation of Oracle storage consumption with other enterprise applications to facilitate:

- Forecasting of projected resource usage
- Optimization of existing resources to help control costs
- Ensuring storage availability for critical data

Supported Platforms

BrightStor Resource Manager provides support for the following platforms:

- Windows 2000
- Windows NT 4.0
- NetWare 3.x, 4.x, 5.x
- UNIX Operating Systems:
 - AIX 4.1, 4.3
 - Solaris 2.7, 2.8/8.0
 - Linux Kernel 2.2 and 2.4
 - HP-UX 10.20, 11.0
- UNIX file systems:
 - AIX 4.x: jfs with the default Logical Volume Manager (LVM) supplied by the operating system
 - HP-UX: hfs (one file system per disk, utilizing the hfs primitive partitioning scheme); vxfs (with SAM as the default volume manager supplied by the operating system)

- Linux: traditional file system
- Solaris: traditional file system (without Volume Manager support)

BrightStor Resource Manager can also be used to manage the following applications/ databases:

- ADSM/TSM 3.1, 3.7, 4.1
- Oracle 8
- ARCserve 2000 on Windows
- BrightStor Enterprise Backup on Windows
- Alexandria 4.5
- Microsoft Exchange 5.5

Before You Begin

This release of BrightStor Resource Manager supports upgrades from:

- SAMS:Vantage 5.5 Network Edition
- SAMS:Vantage 5.5 ADSM Edition
- SAMS:Vantage 6.0
- CA-Vantage 6.1

Before you install BrightStor Resource Manager, please confirm that your hardware and software configurations meet the minimal requirements listed in the next section.

You should back up all data from the database tree before you begin to upgrade from a previous version.

Application Server

Hardware

- Pentium 466 MHz or higher that is running either:
 - Windows 2000
 - Windows NT 4.0

Note: You should confirm that Microsoft supports installation of Windows 2000 or Windows NT 4.0 on the machine that the Application Server is to be installed on. The list of Windows 2000 and Windows NT 4.0 compatible machines is available at the following Microsoft Web site:

<http://www.microsoft.com/hcl/default.asp>

- Minimum of 256 MB RAM, for better performance, 512 MB is recommended.
- Initial minimum of 300 MB of free disk space.

Note: If you are upgrading from an earlier version, you need temporary storage of up to two times the size of your current database files for the database conversion.

- Additional free disk space is required in order to provide for growth of the BrightStor Resource Manager database.

You should have at least an additional 100 MB of free disk space available for initial expansion of the database.

Software

- Windows 2000 Professional or Windows 2000 Server
or

Windows NT 4.0 Workstation or Server with Service Pack 4, 5, or 6a or better

Note: You must install the BrightStor Resource Manager Application Server on a machine that is part of a Windows NT or Windows 2000 domain.

The BrightStor Resource Manager Application Server can automatically distribute and manage agent components on NT and Windows 2000 systems that are members of the domain where the Application Server is running, or are members of a domain with a trust relationship to it.

- Internet Explorer 5.0 or later
- If you are installing the BrightStor Resource Manager Application Server component on Windows NT 4.0, you must also install the Microsoft Data Access Components (MDAC) version 2.1. You can download this software from the following Microsoft support site:

<http://www.microsoft.com/data/download.htm>

Note: Installation of the MDAC components is **not** required if you are installing the Application Server on a machine running Windows 2000.

Windows Client Only

Hardware

- Pentium 266 MHz or higher that supports the operating system you are running

Note: You are encouraged to confirm that Microsoft supports installation of Windows 2000 or Windows NT 4.0 on the machine that the Application Windows Client is to be installed on.

You can access the list of Windows 2000 and Windows NT 4.0 compatible machines at the following Microsoft web site:

<http://www.microsoft.com/hcl/default.asp>

- Minimum of 128 MB RAM

- Minimum of 200 MB free disk space

Software

- Microsoft Internet Explorer 5.0, or later
- If you are installing the BrightStor Resource Manager Windows Client component on any platform other than Windows 2000, you must also install the Microsoft Data Access Components (MDAC).

You can download this software from the following Microsoft support site:

<http://www.microsoft.com/data/download.htm>

Note: Installation of the MDAC components is **not** required if you are installing the Windows Client on a machine running Windows 2000.

- Windows 2000 Server or Windows 2000 Professional
or
Windows NT 4.0 Workstation or Server with Service Pack 4, 5, or 6a, or better
or
Windows Me (Millennium Edition)
or
Windows 98 with DCOM for Windows
or
Windows 95 with Windows Socket 2 Update and DCOM for Windows

Install Windows
Socket 2 Update

To install the Windows Socket 2 Update on Windows 95:

1. Mount the Installation CD in your CDROM.
2. Open a command prompt window.

3. Change to the drive letter representing the CDROM drive that the BrightStor Resource Manager installation media is mounted in.
4. Change to the directory VNE\Support\Winsock2.
5. Enter the command:
`w95ws2setup.exe`

Install DCOM for
Windows 95 and
Windows 98

To install DCOM for Windows on Windows 95 and
Windows 98:

1. Mount the Installation CD in your CDROM.
2. Open a command prompt window.
3. Change to the drive letter representing the CDROM drive that the BrightStor Resource Manager installation media is mounted in.
4. Change to the directory: VNE\Support\dcom.
5. Enter the command:
`dcom98.exe`

Installing BrightStor Resource Manager

Installing BrightStor Resource Manager is made simple through the use of an intuitive Setup Wizard. With the Wizard, you can install all software required to manage Open Systems and z/OS, as well as all six BrightStor Resource Manager options.

To install BrightStor Resource Manager, mount the installation media in the CD drive. The installation wizard launches and guides you through the installation process.

When the initial splash screen appears, select the Windows Client/Application Server installation option. Make sure that Open Systems option is checked in the z/OS - Open Systems dialog box. If you are installing BrightStor Resource Manager for the first time, you will need to install an Application Server.

Upgrading from Previous Versions

This version of BrightStor Resource Manager supports upgrades from the following products/releases:

- SAMS:Vantage 5.5 Network Edition
- SAMS:Vantage 5.5 ADSM Edition
- SAMS:Vantage 6.0
- CA-Vantage 6.1

After completion of the upgrade installation program, you will find that the product database has been automatically upgraded.

Some additional conversion tasks must be completed before you can use the new release of BrightStor Resource Manager including license registration.

To complete the upgrade, perform the following tasks:

1. Launch the BrightStor Resource Manager Application Server and Windows Client.
2. Open the Configuration/Modify menu for all managed objects. The objects are: Domains, Computers (non domain controlled), ADSM/TSM Servers, ARCserve Servers, Alexandria Servers, and Oracle Instances.
3. Enter security access information for Data Collection User Name and Data Collection Password fields.

4. Verify that the Data Collection Frequency field is set with a valid value.
5. You should update all agent software on Windows or UNIX managed computers.

To accomplish this update:

- a. Navigate to Open Systems menu on the Windows Client main menu.
- b. Select Update Agent Software.

Upgrading from Prior Releases – Considerations and Restrictions

The following consequences should be noted and considered whenever an upgrade is performed.

- All user-defined data collection services (Host Data Collection, ADSM Data Collection, Oracle Data Collection, and Alexandria Data Collection) as well as all rollup services (ADSM Rollup and Alexandria Rollup) are deleted by the automatic database upgrade, and replaced by automatic data collection services.
- You must manually modify procedures that used any of the services mentioned in the previous item with sequenced timing (AFTER END OF or BEFORE START OF) because the row numbers of the services that make up the procedures have been changed.
- Windows NT and Windows 2000 computers that are not registered as members of a Windows domain in the BrightStor Resource Manager database are removed from the database. If you want to continue to manage the computers, register them with the Computer Registration Wizard.
- All Storage Managers are deleted by the automatic database upgrade. A single Storage Manager (*admin*) is created by the database upgrade process. This user initially has no password.

Registering BrightStor Resource Manager

Use the Computer Associates RegisterIT utility to register and update your BrightStor Resource Manager licenses.

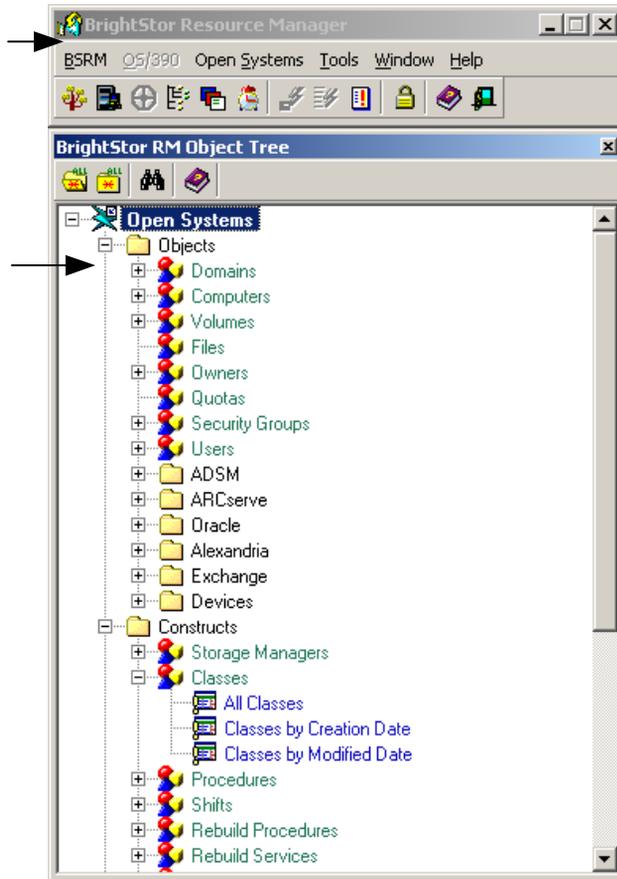
RegisterIT registers your BrightStor Resource Manager product and options, and installs the necessary license credentials that you received from Computer Associates.

Each of the BrightStor Resource Manager options has a 16-digit Registration ID Number that accompanies the product CD. Be sure to have these numbers available. Repeat the registration process for each option you purchased.

Note: This registration process is only required for the Application Server machine.

Navigating Through BrightStor Resource Manager Workplace

The BrightStor Windows Client provides an intuitive graphical user interface through which you can access the main functions of the Open Systems Manager.



BrightStor displays data in tables. When you select an object from the Object Tree, it displays a table listing all of the instances of the selected object that it finds in the database:

	Full Name	Label	Last Update	Size (MB)	Free Space (MB)	% Free Space	Occupied Space	% Occupied
1	TEFN-ARC/D\$	D\$	7/10/2001 00:04:49AM	13,225	10,544	79.70	2,681	
2	TEFEN12/I\$	I\$	7/16/2001 00:05:03AM	6,134	5,919	96.50	216	
3	ALL-BLACK/Z\$	Z\$	7/16/2001 00:04:15AM	5,026	4,005	79.70	1,022	
4	TEFN-ARC/C\$	C\$	7/10/2001 00:04:49AM	4,095	2,622	64.00	1,473	
5	TEFEN12/F\$	F\$	7/16/2001 00:05:03AM	2,047	2,023	98.80	25	
6	TEFN-EXCH/E\$	E\$	7/15/2001 00:04:57AM	2,055	1,996	97.10	59	
7	TEFN-EXCH/D\$	D\$	7/15/2001 00:04:57AM	2,047	1,993	97.40	54	
8	TEFEN12/G\$	G\$	7/16/2001 00:05:03AM	2,534	1,901	75.00	633	
9	ALL-BLACK/E\$	E\$	7/16/2001 00:04:15AM	1,890	1,620	85.70	270	
10	ALL-BLACK/D\$	D\$	7/16/2001 00:04:15AM	4,095	1,341	32.80	2,753	
11	TEFEN12/E\$	E\$	7/16/2001 00:05:03AM	2,047	1,102	53.80	945	
12	AD\98\^usr	^usr	7/15/2001 09:29:19AM	2,272	893	39.30	1,379	
13	ALL-BLACK/C\$	C\$	7/16/2001 00:04:15AM	2,047	826	40.30	1,221	
14	KEITH266-BASE/I\$	I\$	7/15/2001 05:40:37PM	2,008	823	41.00	1,185	
15	TEFEN01/C\$	C\$	7/16/2001 00:04:58AM	2,047	734	35.80	1,314	
16	TEFEN01/D\$	D\$	7/16/2001 00:04:58AM	2,149	729	33.90	1,420	
17	KEITH266-BASE/H\$	H\$	7/15/2001 05:40:37PM	1,035	599	57.90	436	
18	KEITH266-BASE/D\$	D\$	7/15/2001 05:40:37PM	1,035	599	57.90	436	
19	KEITH266-BASE/G\$	G\$	7/15/2001 05:40:37PM	1,035	575	55.50	460	
20	KEITH266-BASE/F\$	F\$	7/15/2001 05:40:37PM	1,035	569	55.00	466	
21	KEITH266-BASE/C\$	C\$	7/15/2001 05:40:37PM	2,047	530	25.90	1,517	
22	TEFEN12/K\$	K\$	7/16/2001 00:05:03AM	502	502	100.00	0	
23	AD\98\^home^oracle	^home^o	7/15/2001 09:29:19AM	1,088	483	44.40	605	
24	TEFEN12/C\$	C\$	7/16/2001 00:05:03AM	2,047	448	21.90	1,599	

You have the option to extensively customize the information displayed.

For example, you can perform general sorting and filtering operations on each table to narrow the list of objects and arrange them in the desired order. Other operations you can perform on the tables include:

- Presenting numeric data graphically
- Printing and exporting table data
- Selecting which object attributes are displayed

- Defining the fonts and number formats used to display information
- Setting color attributes based on a user-defined condition

Using the Samples Manager

Predefined sets of sample settings are included with your BrightStor Resource Manager product. These sample settings are ready to use.

The samples address the major categories of tasks that storage administrators have asked for, including:

- Capacity Planning
- Disk Grooming
- ADSM Reporting
- ARCserve Reporting
- and more...

Loading any or all of these sample settings is made easy through use of the Sample Manager utility that is provided with BrightStor Resource Manager.

To invoke this utility, select Utilities from the BrightStor Resource manager Start Menu.

Refer to the *BrightStor Resource Manager User Guide* for information on the use of the Samples Manager.

What's Next?

Now that you have learned more about BrightStor Resource Manager and completed the installation, BrightStor Resource Manager is ready to help you perform your storage management tasks.

The next chapter will guide you through the BrightStor Resource Manager basic functions and offer suggestions on how to use your new software.

We are confident that you will be impressed with the rich set of features provided by BrightStor Resource Manager. And soon come to consider it an indispensable key to managing your distributed storage environment.

Storage Classifications

The BrightStor Resource Manager versatile classification functionality enables you to easily manage data across the enterprise.

You can create groupings (classes) for your storage objects to address your specific needs.

This chapter guides you through the process of starting up the basic components of BrightStor Resource Manager, registering a computer in the BrightStor Resource Manager database, and creating a class that can be used to monitor the space occupied by all volumes on your system.

Starting BrightStor Resource Manager

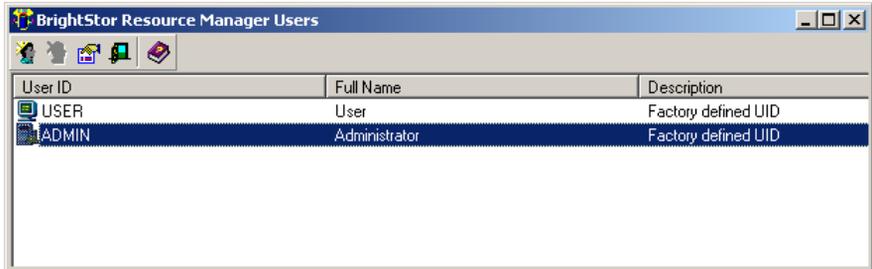
Follow these steps to start BrightStor Resource Manager:

1. Start the BrightStor Resource Manager Application Server by selecting Start, Programs, BrightStor Resource Manager, Application Server.

Note: When the Application Server starts, you must enter a userid and a password to continue. The default userid shipped with the product is admin, and initially no password is required for this default userid.

To change this password, use the BrightStor Resource Manager Administrator utility by selecting Start, Programs, BrightStor Resource Manager, Administrator.

After entering the current Administrator ID and password, the following screen displays.

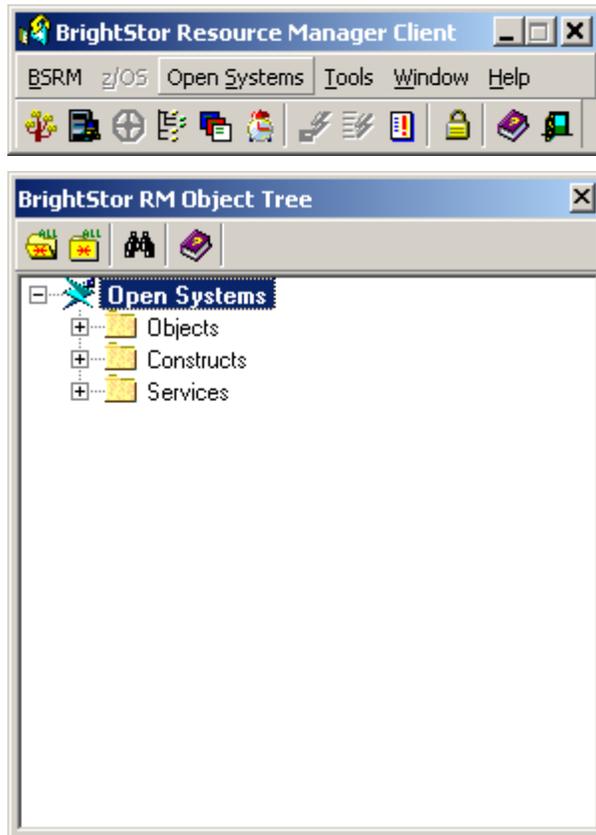


On this screen select a userid, and using a right mouse click, select Properties, or from the tool bar, select the icon for Edit.

A window displays that you can use to change the password.

2. To start the BrightStor Resource Manager Windows Client select Start, Programs, BrightStor Resource Manager, Windows Client. The following windows appear.

From the Client window you can access the BrightStor Resource Manager objects and services.



Note: When the Windows Client starts, you must enter a userid and a password to continue. The default userid shipped with the product is admin, and initially no password is required for this default userid.

To change this password, use the BrightStor Resource Manager Administrator utility by selecting Start, Programs, BrightStor Resource Manager, Administrator.

Registering a Computer

To register a computer with the BrightStor Resource Manager Application Server, complete the following steps:

1. From the Windows Client, select OpenSystems from the menu bar.
2. A drop-down menu displays. Select Register.
3. A cascade menu displays. Select Computers and Domains.

The BrightStor Resource Manager Registration Wizard displays.



Follow the instructions provided by the wizard to complete registration of this machine.

Using the Enterprise Definition Language (EDL) to Create Classes

You can create classes using the Enterprise Definition Language (EDL), which is a special-purpose language designed to facilitate the selection and manipulation of network objects for storage management purposes, and for the writing of timing and condition statements.

In addition to using EDL for class definition, you can use EDL for the following:

- Service source definition
- Object definition for Run services
- Definition of timing conditions
- Definition of table filters

EDL statements are constructed from a set of building blocks assembled according to the rules of EDL syntax. BrightStor Resource Manager provides an EDL Editor to assist you in writing EDL statements.

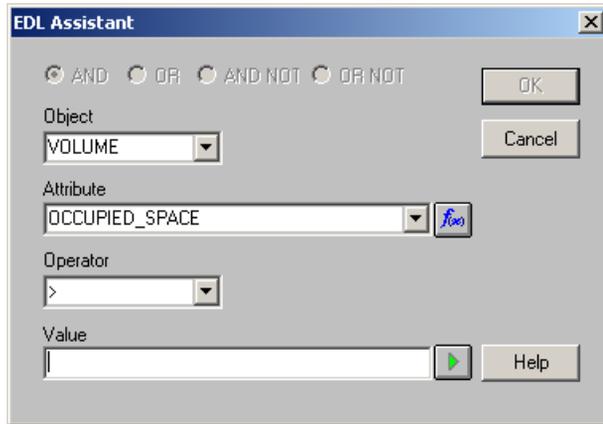
Tip: For more information on EDL building blocks and EDL syntax, please refer to BrightStor Resource Manager online Help system.

To use the EDL Assistant to create a Storage Class for Volumes:

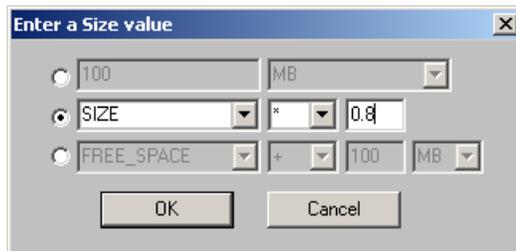
1. In the BrightStor Resource Manager Object Tree, expand the Constructs folder and click on Classes.
2. In the Classes window that appears, select New from the Configuration menu.
3. In the New Class window that appears, make sure VOLUME is selected in the Object drop-down menu and click the EDL Assistant button  on the menu bar to open the EDL Assistant dialog.

4. In the EDL Assistant dialog, select the following:
 - VOLUME from the Object drop-down menu
 - OCCUPIED_SPACE from the Attribute drop-down menu
 - > from the Operator drop-down menu

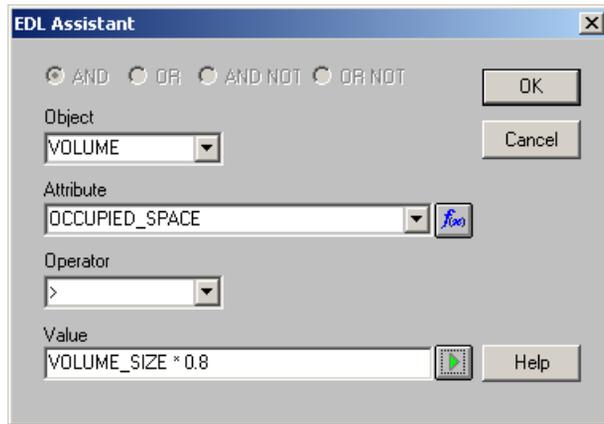
The EDL Assistant dialog should appear as follows:



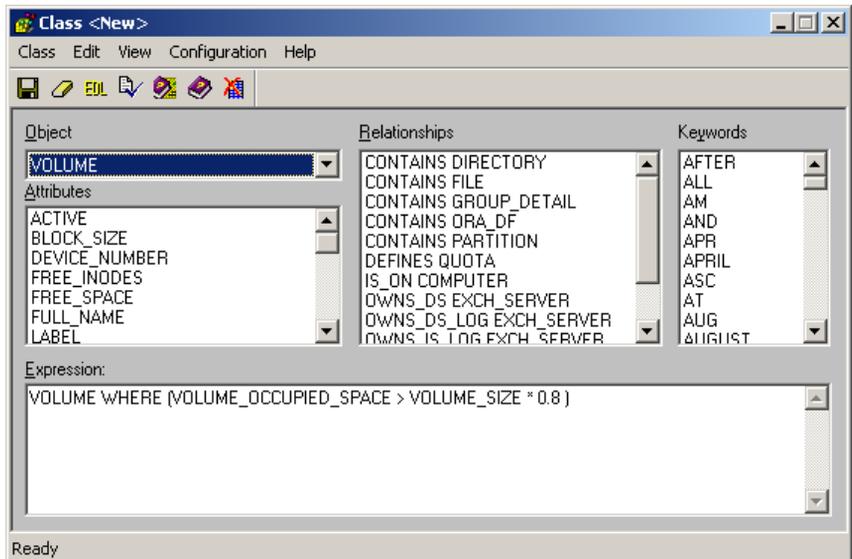
5. Click the green arrow button next to the Value field to open the Enter a Size value dialog. Click on the middle radio button and select SIZE from the first drop-down menu. Select the * (multiplication) operator from the center drop-down menu, and enter 0.8 in the text box. The dialog should appear as follows:



- Click OK. The expression `VOLUME_SIZE * 0.8` is transferred to the EDL Assistant dialog.



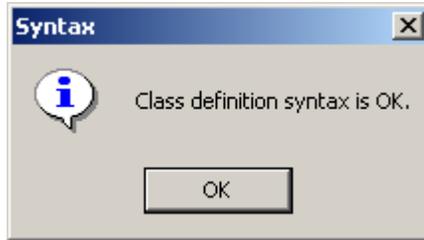
- Click OK in the EDL Assistant dialog. The resulting EDL expression is transferred to the New Class window.



- 8. Click the Save button to save your new class.

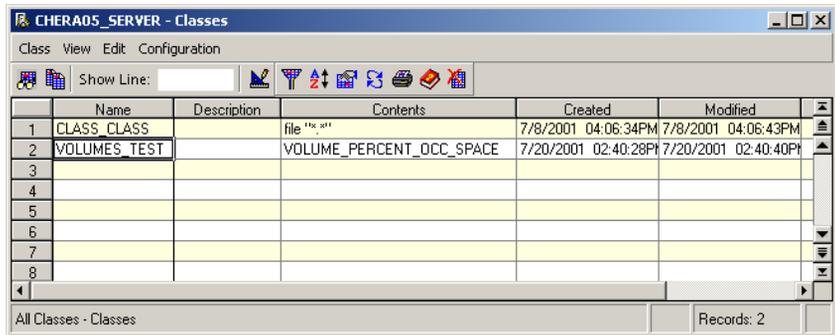
Name the Class you just created and enter a description (optional) in the appropriate field. Click OK to complete the process.

If the Class definition syntax is valid, the following message box appears:



Click OK.

- 9. In the BrightStor Resource Manager Object Tree, click All Classes under Classes in the Constructs folder to open the Classes window. Your new Class appears.



You can use this class definition in any of the BrightStor Resource Manager services, such as Queries, Reports, Thresholds, Trends, and so on.

Frequently Asked Questions

Frequently Asked Questions

Question: How does BrightStor Resource Manager help decrease hardware costs?

Answer: BrightStor Resource Manager helps to decrease hardware costs in two different ways.

First, BrightStor Resource Manager helps locate the files that are no longer necessary, such as old, unowned, duplicate, or obsolete files. BrightStor Resource Manager makes it easy to find mp3, .wav files, games, multiple workstation backups, files of former employees, files that have not been accessed in over a year, and large movie files across your entire network. These files take up valuable storage space and cost you money. By deleting or archiving these files, you can increase efficiency and decrease costs. Once you have deleted these non-business related files, your backup process is also more efficient because there is less to back up.

Second, with the trending and forecasting ability of BrightStor Resource Manager, you can defer the cost of adding storage. Accurately predicting when your servers will run out of space prevents premature storage purchases and helps justify storage-related budgets.

Question: What services can BrightStor Resource Manager automate?

Answer: With the Run service, BrightStor Resource Manager is capable of initiating any Windows, NetWare console, DOS, Windows NT/2000, or UNIX command line operation. You are limited only by your imagination and the command line parameters supplied with the application you execute. For example, you can use a COPY command to move files from one server to another during operations system migration or server consolidation.

Question: Can BrightStor Resource Manager help to prevent my servers/volumes from running out of space?

Answer: Yes. BrightStor Resource Manager can send SNMP alerts, email messages, remote printout, or pager alerts to notify you when a server or volume has passed a user-defined threshold or event.

Using the BrightStor Resource Manager unique storage classification feature, you can set thresholds for users, groups, departments, projects, applications, or any other logical grouping of data that fits your business. These thresholds can also be used to automate tasks to help reduce storage capacity usage, such as compressing, archiving, or deleting files.

Question: What is the difference between Queries and Reports?

Answer: The type of information gathered and how it is displayed are predefined in the BrightStor Resource Manager standard reports. Reports can be distributed via email, or they can be printed or published to the web.

Queries provide you with the ability to define the type of information and variables to be displayed and how it is to be totaled or manipulated. This information is stored in a BrightStor Resource Manager table, enabling storage managers to sort and filter the data. Queries are an invaluable tool for finding and correcting storage problems.

Question: What is Storage Classification and why is it important?

Answer: Storage Classification/Grouping allows you to easily group and manage logically related data that exists across multiple platforms according to the same rules, independent of other data on the same platform. Defining storage classes based on an application or type of data is a good place to start. You can define a unique class for your payroll, customer service files, accounts receivable, word processing files, spreadsheets, and so on. The definition for a storage class can span multiple operating systems, servers, volumes, and directories. You can also select objects using characteristics such as last access date, modified date, creation date, size, file owner, and many others. Data classes can be used for multiple services, including reporting, scheduling, trend analysis, forecasting, and threshold-based automation. Classes can provide a level of granularity that closely maps to the applications, workgroups, departments, and divisions within your organization.

Question: How does BrightStor Resource Manager reporting and viewing compare to those of my backup products?

Answer: With BrightStor Resource Manager, you get a clear picture of the overall storage utilization of your network resources across multiple operating systems from a single screen. On the other hand, backup products typically provide reports that simply show which files were included in the backup session. Since these products look at offline data information, and not online data, they provide limited information that is specific to the backup process.

Question: I need to identify when a server volume reaches a critical level and stays there. I do not want to be told every time the utilization jumps for a few minutes. Can BrightStor Resource Manager help me?

Answer: Yes. BrightStor Resource Manager has a feature called an Independent Agent that monitors utilization on server volumes and can be configured to notify you only if the limit is exceeded for a user-specified period of time. This Agent, as the name suggests, is independent and operates in a largely autonomous fashion, thus minimizing the use of network bandwidth by notifying administrators only when the “utilization persistency” reaches a critical level.

Question: Does BrightStor Resource Manager support domains?

Answer: Yes. BrightStor Resource Manager supports NT/2000 and NDS domains, as well as NIS for UNIX systems.

Question: On which operating environments can BrightStor Resource Manager provide information?

Answer: BrightStor Resource Manager supports more than 20 operating systems. Its graphical user interface runs on Windows 95/98/NT/2000/Me. BrightStor Resource Manager supports NetWare, Windows NT/2000 servers and workstations (Intel), popular commercial UNIX operating systems including IBM AIX, Sun Solaris, HP-UX, popular Linux flavors, and MVS (in conjunction with BrightStor CA-Vantage Storage Resource Manager for OS/390).

Question: What network protocols does BrightStor Resource Manager support?

Answer: BrightStor Resource Manager currently supports TCP/IP and NetWare’s native IPX/SPX.

Question: How many servers or nodes can be managed by a single BrightStor Resource Manager system?

Answer: Because of the BrightStor Resource Manager distributed architecture, there are no software limits to the number of servers that can be managed by a single system. There are, however, some things to consider when deciding which servers are to be managed by BrightStor Resource Manager, including the physical location of the server and, most crucially, the bandwidth of the network. In addition, the power of each managed server and how busy it is serving other application requests should be evaluated.

Question: What kind of security does BrightStor Resource Manager support?

Answer: BrightStor Resource Manager is fully compatible with Windows NT/2000, NetWare, and UNIX system security. WindowsNT/2000 domains, NetWare NDS, and UNIX NIS are also supported. In addition, BrightStor Resource Manager has a comprehensive internal security mechanism that allows you to define levels of access for users. It also supports Shadow security in UNIX environments.

Question: How does BrightStor Resource Manager integrate with centralized systems management products or framework tools?

Answer: BrightStor Resource Manager uses Simple Network Management Protocol (SNMP), the de facto industry standard method of communicating status information about enterprise network components such as modems, bridges, UPS, and servers. BrightStor Resource Manager extends this common use of SNMP to include the notification of storage utilization beyond the pure physical amounts of data on volumes and servers.

These notifications can be sent to and managed by Unicenter, the defacto standard Enterprise Management solution, or other network and systems management products such as HP OpenView or Tivoli.

BrightStor Resource Manager also provides a Management Information Base (MIB) that can be compiled into your existing SNMP management tool.

In addition, BrightStor Resource Manager provides a command line interface so that the Unicenter event management systems, and similar systems from framework product providers can initiate any BrightStor Resource Manager service.

Accordingly, when Unicenter (or some other system) is notified that a critical condition exists, the notified system can automatically launch the BrightStor Resource Manager Reports, Queries, or Remote Automation tasks you need to solve the problem.

Question: Can BrightStor Resource Manager launch third party backup/recovery and archival products that I have already installed?

Answer: Yes. In addition to its monitoring capabilities, BrightStor Resource Manager provides services that make it possible to manage your increasingly complex environment. The Run service enables you to execute any Windows NT/2000, NetWare, or UNIX command line operation.

Question: Can BrightStor Resource Manager integrate with email software or pagers?

Answer: Yes. BrightStor Resource Manager can send the output of reports to VIM and MAPI-compliant programs, such as cc:Mail, Lotus Notes, and Microsoft Exchange.

Some pagers can also be sent this information (those pagers which support the MAPI interface). Additionally, any command line-driven paging system can be utilized.

Question: Is BrightStor Resource Manager an NLM-based product?

Answer: No. The application server is NT-based, and access to Novell servers is achieved through NetWare client APIs.

Glossary

A

ADSM

ADSTAR Distributed Storage Management (ADSM) is a collective term for IBM's family of software that helps a customer manage the storage devices (such as mainframe storage, PC disk drives, and Zip drives) that are scattered around the company.

Alerting

Inform storage administrators when a certain predefined event has occurred or a threshold has been breached. Alerts can be in the form of a beeper page, email, remote printout, SNMP trap, an entry in Event log, and so forth.

Application Server

The Application Server is the main component of BrightStor Resource Manager and it interacts with all other components.

Processes running on the Application Server evaluate resource requirements for services and procedures, schedule the operations necessary to execute the services, store the scheduled operation descriptions, match the requests for services with currently available resources, and initiate service execution.

Application Support

Provides the ability to centrally monitor, report, and/or manage applications including backup and recovery, databases, messaging and collaboration and more.

Asset Management

Provides basic record-keeping and information on storage assets, logical or physical, or both.

B

Business Continuity Reporting

Critical data, applications and servers that are not being backed up are identified. Status of backup and recovery jobs are identified. Planning and administration of backups, remote copies, and mirroring.

C

Capacity Planning

Analyze current capacity matrices and trends and predict future capacity requirements.

Class

A Class is a user-defined and named collection of database objects. You can use a Class wherever you would use an existing BrightStor Resource Manager object, for example, in the source of a report service.

Classes are defined by using Enterprise Definition Language (EDL) selection statements, which combine objects and their attributes, relationships between objects, predefined keywords, and operators. A Class Definition can also reference another Class.

Configuration Management

Determine how existing storage assets should be best arranged to support business-critical data and the server or application that depends on the data.

E

Enterprise Definition Language (EDL)

The Enterprise Definition Language (EDL) is a special purpose language designed to facilitate the selection and manipulation of network objects for storage management purposes, and for writing time and filter statements.

End-to-End Management

The management capabilities extended across the complete geographic boundaries of an organization – from the laptop on the periphery, to the mainframe in the core of an organization’s workhorse.

Event Management

Monitor, report, diagnose, and repair storage assets as necessary.

F

File System

A file system is the way in which files are named and where they are placed logically for storage and retrieval.

H

HSM (Hierarchical Storage Management)

HSM (Hierarchical Storage Management) is policy-based management of file backup and archive in a way that uses storage devices economically and without the user needing to be aware of when files are being retrieved from backup storage media. Although HSM can be implemented on a standalone system, it is more frequently used in the distributed network of an enterprise. Using an HSM product, an administrator can establish and state guidelines for how often different kinds of files are to be copied to a backup storage device. Once the guideline has been set up, the HSM software manages everything automatically.

J

Journaling File System

A journaling file system is a fault-resilient file system in which data integrity is ensured because updates to directories and bitmaps are constantly written to a serial log on disk before the original disk log is updated. In the event of a system failure, a full journaling file system ensures that the data on the disk has been restored to its pre-crash configuration. It also recovers unsaved data and stores it in the location where it would have gone if the computer had not crashed, making it an important feature for mission-critical applications.

N

Network-Attached Storage (NAS)

Network-attached storage (NAS) is hard disk storage that is set up with its own network address rather than being attached to the department computer that is serving applications to a network's workstation users. By removing storage access and its management from the department server, both application programming and files can be served faster because they are not competing for the same processor resources. The network-attached storage device is attached to a local area network (typically, an Ethernet network) and assigned an IP address. File requests are mapped by the main server to the NAS file server.

P

Performance Management

Improve the performance matrices of storage resources to optimize the storage infrastructure to support essential business processes.

Q

Queries

Queries retrieve information about storage management objects from the network and the database. You can query the system about any object configured in the database, as well as about directories and files.

S

Storage Area Network (SAN)

A storage area network (SAN) is a high-speed special-purpose network (or subnetwork) that interconnects different kinds of data storage devices with associated data servers on behalf of a larger network of users. Typically, a storage area network is part of the overall network of computing resources for an enterprise.

Space Usage Management

Optimize storage space usage via space reclamation (for example, removing temp, mp3, image or aged/stale files), user quota management, HSM, and so on.

Storage Assets/Resources

Storage assets comprise data that is both tangible (physical assets, such as disk storage systems, tape libraries, and storage area network (SAN) communications gear) and intangible (logical volumes, files, and data constructed by specific applications, such as application databases, tables, and mailboxes).

Storage Resource Manager (SRM)

The software application that has responsibility for actually managing storage assets and resources. The Storage Resource Manager collects data from various physical and logical storage resources – servers, applications, users, and so on and stores it in a central data repository. The data is then “sliced-and-diced” by the storage administrator by leveraging the SRM application’s various inherent properties and capabilities such as monitoring, reporting, trend analysis, forecasting, alerting, and storage task automation.

T

Threshold

Thresholds are used to monitor system resources, provide an automatic alert when a critical level is reached, and take action when a certain condition is met.

Trend Reports

Based on data collected over time, trend reports show the history of storage management objects. The reports display the changes selected objects underwent during the collection period and analyze the trend.