

DS3000 Storage Manager Demo Guide

Storage Manager 2.17

Demo Guide Revision 1.0

January 17, 2007



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Disclaimer

The intent of the DS3000 Storage Managers Demo software and this Demo Guide document is to provide IBM field sales and support personnel, IBM Business Partners, and their resellers, distributors and integrators a tool for illustrating the features, functions and power of the DS3000 Storage Manager software.

At the time these tools are released and internally distributed, there were only minor errors that do not result in intentional misrepresentation of the DS3000 Storage Manager or DS3000 disk systems capability. However, the Demo is neither tested, nor updated, nor maintained to the extent of the actual products offered for sale or other customer use. As a result, certain features and functionality may not behave as they would in a production release of DS3000 Storage Manager.

Technical questions should be verified through official published documents, support resources, or directed to appropriate Systems Engineers, field support or customer service personnel.

Getting Started

Audience

Welcome to the DS3000 Storage Manager Demo Guide.

The audience for this demo guide is technically-oriented members of the sales community who hope to understand more about how the DS3000 Storage Manager works. This guide is also for members of Field Sales wishing to use this tool to demonstrate capabilities of the DS3000 disk systems.

Background Information

The DS3000 Storage Manager Software Demo is designed for use in testing environments as a stand-alone simulator of DS3000 Storage Manager's functions.

To prevent accidental access or corruption of critical data, the Storage Manager Demo does not have the ability to access actual storage disk systems.

Prerequisites

The Storage Manager Demo program runs on Windows 2003 or XP environments. Other environments have not been tested nor are they approved for use.

Terminology

Before we begin our journey through the DS3000 Storage Manager, there is some terminology you may not be familiar with. We will provide you with a short summary of these terms.

Array: A set of physical drives logically grouped together with an assigned RAID level. Arrays can vary in the number of drives to meet required data protection, capacity, or performance requirements (the more physical drives in an array, the higher the performance capability of the array).

FlashCopy: This feature provides the ability to create a point-in-time image of a logical drive. It is very useful for as a data source for backup applications.

Host-to-Logical-Drive-Mappings: When there are several hosts and many logical drives to associate to these hosts, Host-to-Logical-Drive-Mappings are utilized to configure a set of logical drives to each host server. We use the partitioning feature to assist in this process

Logical Drive: This is the basic storage unit that is created on the DS3000 and presented to a host server. It is synonymous with LUN and is a drive letter (H: for example) in Windows environments.

Partition: This premium feature logically divides a single disk system into multiple systems by defining which host or host group can access each logical drive. This enables a range of hosts with different capacity, performance, or data protection demands to effectively share a single storage system.

Storage subsystem: This term will be used interchangeably with disk system. Both refer to the DS3000 series disk systems which are managed by the DS3000 Storage Manager

VolumeCopy: This feature provides the ability to create an independent copy of another logical drive or FlashCopy. This term is also used interchangeably with logical drive copy.

Loading the Software

The Storage Manager Demo program is available from a variety of sources including

- CDs
- IBM Internal Sales Kit:
<http://w3-1.ibm.com/sales/systems/portal/s.155/254?navID=f220s240&geolD=All&prodID=Disk&docID=ds3000sk.skit&docType=SalesKit&skCat=DocumentType>
- External PartnerWorld Kit:
<http://www-1.ibm.com/partnerworld/sales/systems/myportal/s.155/307?navID=f220s240&geolD=All&prodID=Disk&docID=ds3000sk.skit&docType=SalesKit&skCat=DocumentType>

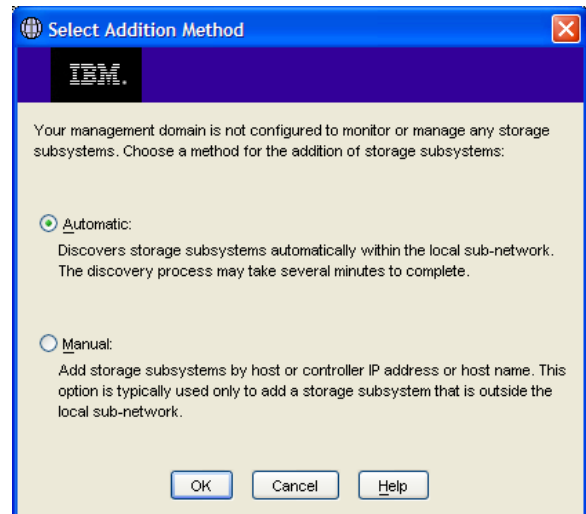
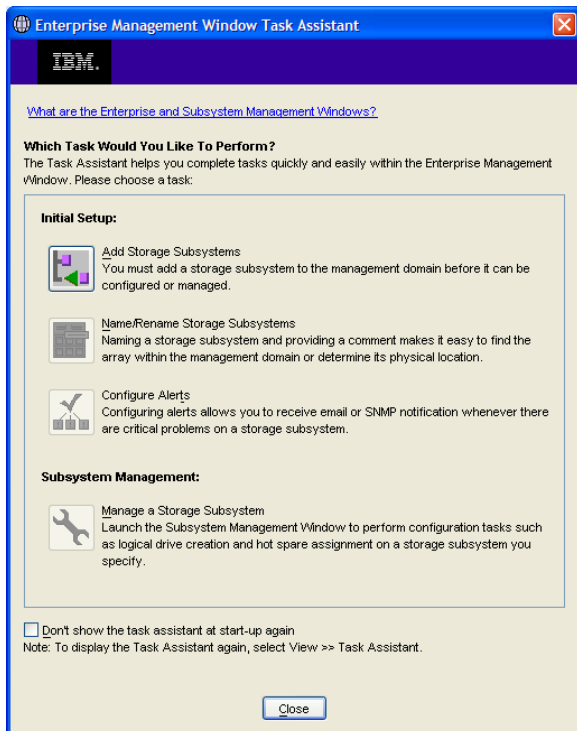
The Demo is zip file with the following name SMdemo_217_G506.zip. Unzip this file into a folder of your choice. Within this folder will be the **DEMO** folder. Simply navigate there and execute the batch file named *Start_Demo.bat*.

And you are ready to go!

Note: When the installation of the Storage Manager Demo is completed, go to the directory where the demo was installed and execute the *Start_Demo.bat* batch file.

Exploring the DS3000 Storage Manager Demo

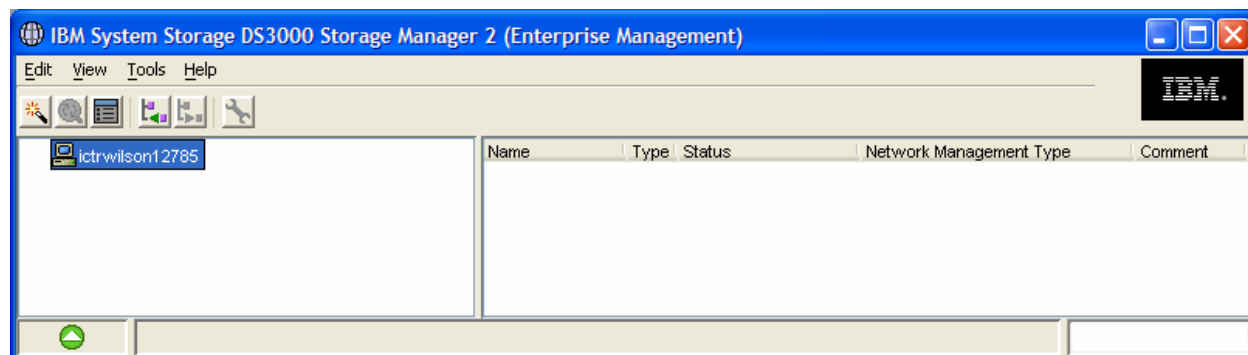
Executing the *Start_Demo.bat* initiates a Java session with the Storage Manager Demo program. You'll see the following screens – the DS3000 Storage Manager splash screen identifying the Storage Manager Demo followed by the Enterprise Management Window screens:



The **Enterprise Management Window Task Assistant** is a series of wizards that helps you install and manage your new DS3000 disk system. The **Task Assistant** helps with common tasks such as:

- Add Storage Subsystems
- Name/Rename Storage Subsystems
- Configure Alerts
- Manage a Storage Subsystem

Feel free to explore the **Task Assistant**. You can auto-discover the storage subsystems by selecting **Add Storage Subsystem** from the **Task Assistant**, or closing the **Task Assistant** window and clicking on the leftmost icon button in the **Enterprise Management Window**.



Note: In subsequent Demo sessions, the storage subsystems may not need to be rediscovered. However, if the subsystem status is “unresponsive,” simply delete the systems and rediscover them.

In the right panel of the **Enterprise Management** window, you will see two preconfigured storage systems: 1) the DS3400, and 2) the DS3200.

With two systems, you can select the appropriate subsystem as the basis to demonstrate features:

- 1) The **DS3400** is ideal for an in-depth exploration of the DS3000 Storage Manager feature set. Nothing is pre-defined for the subsystem, so it can serve as a basis for configuring all the arrays, logical drives and host-to-volume mappings,
- 2) The **DS3200** is suitable for a comprehensive tour of the DS3000 Storage Manager features. It includes a number of defined arrays and logical drives.

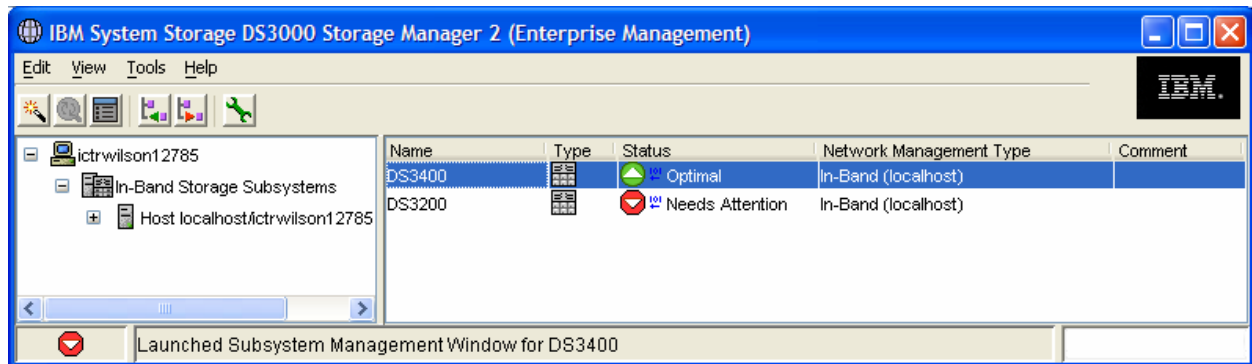
Both configurations include a total of 48 SAS drives and 3 EXP3000 drive trays. In addition, all premium features, FlashCopy, Volume Copy and partitioning, are enabled.

It is important to note that the DS3400 and DS3200 are identical in their functionality. The features and tasks presented in the Demo guide can be used interchangeably.

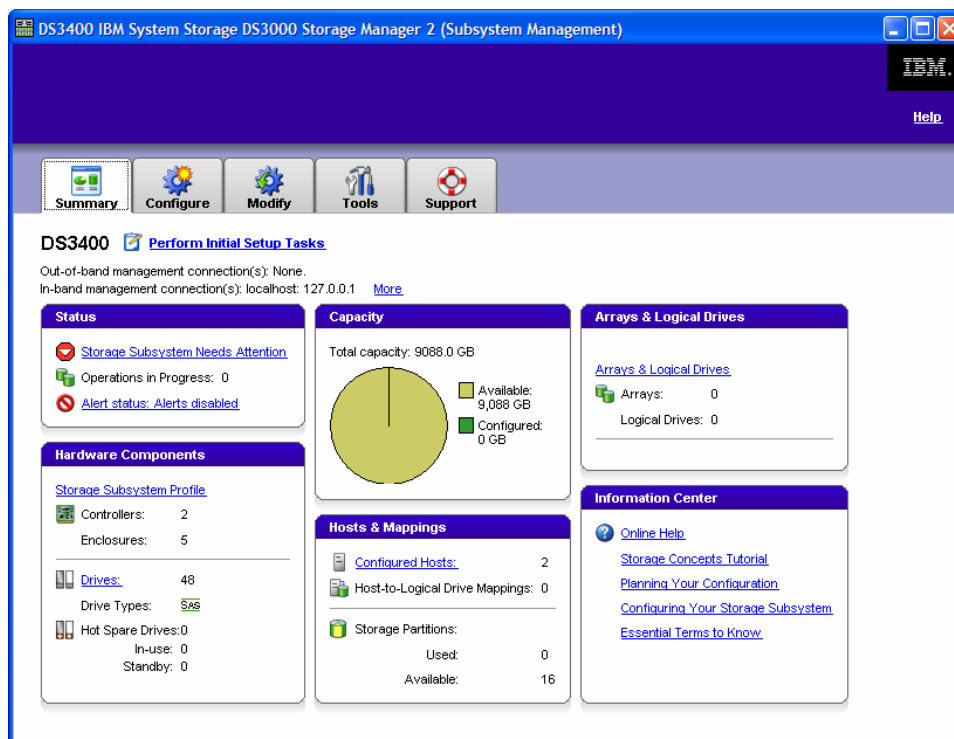
Tab Bar Screen Views

For this initial exploration of the Storage Manager Demo, we will use the DS3400 disk system configuration.

Select the *DS3400* system by double-clicking it in the right panel. This displays the DS3000 Subsystem Management window (SMW).



The SMW provides access to most components and functions of the DS3000 series disk systems.



There are five tabs in the SMW view



- The **Summary** tab provides access to:



- Initial Setup Tasks link
- Recovery Guru - This is the automatic discovery tool for systems problems
- Hardware components profile and drive location
- Locate arrays and logical drives - Drive group(ings) and disk system targets (LUNS)
- Host and mappings - The attachment of LUNs to servers
- Information center and online help

- The **Configure** tab provides access to:



- Configure host access – Automatic or manual
- Create host group – A group of servers or cluster
- Automatic storage configuration
- Configure Hot Spares
- Create logical drives (including FlashCopy logical drives)
- Create host-to-logical drive mappings – Server to LUN

- The **Modify** tab provides access to:



- Edit host topology - Servers using LUNs
- Rename or delete logical drives
- Add free capacity - Drive space available in the arrays and not yet assigned to a logical-drive)
- Change logical drive ownership (preferred path) - Route from/to server and disk system
- Modify FlashCopy logical drives - Drive used for FlashCopy
- Manage logical drive copies - Premium feature of VolumeCopy or logical drive copy
- Edit host-to-logical drive mappings

- The **Tools** tab provides access to:



- Rename storage subsystem
- Set or change password
- Change media scan settings - System data block check done in the background
- Turn on indicator lights for various components to identify them physically (e.g. locate a drive)
- View/enable premium features
- Change enclosure ID numbers - Identification number assigned to a expansion unit
- Synchronize controller clocks
- Change controller network configuration - Set IP address information
- Reset battery age - Days until battery replacement should be made
- Inherit system settings – Leverage already existing array configurations

- The **Support** tab provides troubleshooting and maintenance access to:



- Recover from failure
- View event log
- Gather support information
- View storage subsystem profile
- Download firmware
- Manage controllers
- View online help

Putting Together an Effective Demo

Selecting a disk system for their organization can be a difficult decision for customers. It is also not always clear what criteria or requirements are behind their selection process. The DS3000 Storage Manager Demo is one means for you to understand your customers buying criteria. This Demo leads to open discussion with your customer as you go through the simulator together. By reviewing with them what they are likely to experience with the DS3000 disk systems and DS3000 Storage Manager, you can work with them to define what features are most important to them and why.

An effective way to win over the prospect is to provide training to the eventual administrators and managers of the IBM DS3000 disk systems. This will show the ease of use of the DS3000 Storage Manager as well as address any of their concerns about learning a new software system. Stressing the task-oriented user interface and its simplicity, this training can be tailored to the specific needs of the group you are training:

- Initial set-up and configuration
- Basic operations for their particular environment
- Advanced premium features for when they need them
- Specific operations for growing their disk system
- Application specific tips and techniques

This course is best held as an interactive exchange of “*How do I...?*” topics and exercises that provide best practices for common tasks that DS3000 Storage Manager offers.

This strategy has been used successfully on numerous occasions in parallel with the pre and post sales process. It’s an excellent vehicle to train, practice, and sell.

Scenarios

The following sections will provide some scenarios for you to engage with your customers and how to address a specific business issue utilizing the DS3000 Storage Manager functions. As well, you may decide to highlight some of the features you have found in addition to the demo guide and develop your own scenarios.

Scenario 1 – “This is my first external storage system. What do I do?”

Initial Setup Tasks dialog box

The DS3000 Storage Manager's **Initial Setup Tasks** dialog box provides step-by-step instructions on setting up a DS3000 disk system. As a task-based user interface, it provides a more obvious starting point to setting-up and managing the disk system.

The **Initial Setup Tasks** window offers a step-by-step process of tasks directing users to complete an initial configuration. It pops up automatically when the SMW is first brought up, or can be launched by selecting **Perform Initial Setup Tasks** from the summary tab of the SMW.

The steps listed as initial setup tasks include:

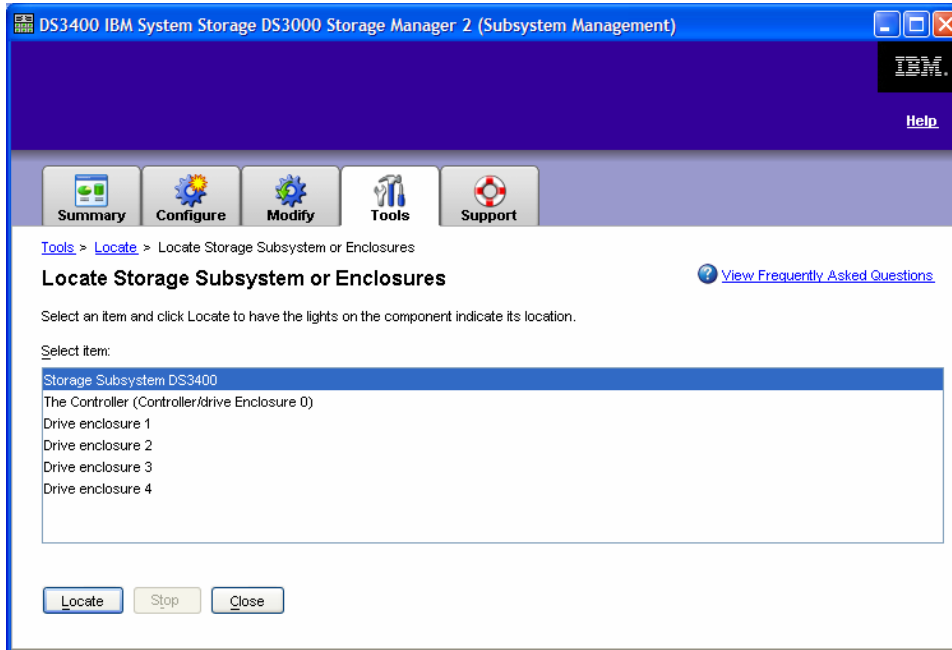
1. Locate the storage subsystem
2. Rename the storage subsystem
3. Set a storage subsystem password
4. Configure host access
5. Configure storage subsystem

In this scenario we will cover each step in the initial setup tasks list.



Step 1. Locate the Disk System

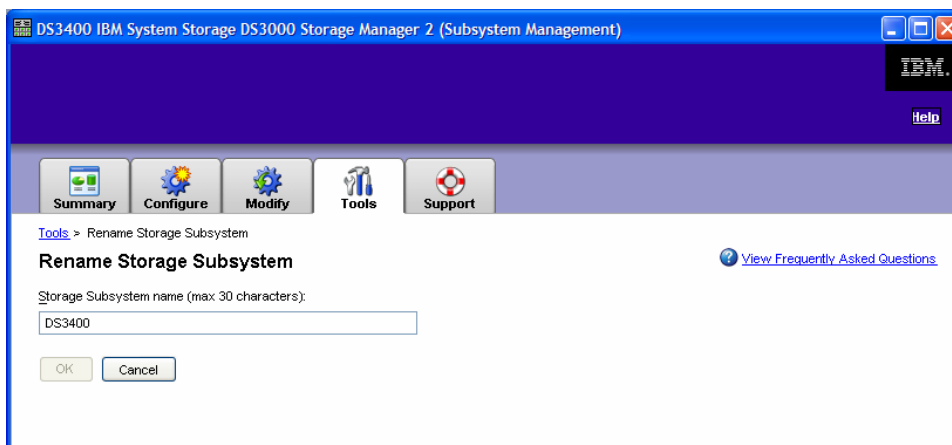
This optional step helps locate the subsystem if it's in a data center or room with other systems. Click on **Locate the Storage Subsystem**, which will take you to the following screen:



From this screen, select an item and click on **Locate** to have the lights on the DS3000 disk system indicate its location. This allows you to locate the physical location of the disk system in your network. The disk system can then be identified with a label.

Step 2. Rename the Storage Subsystem

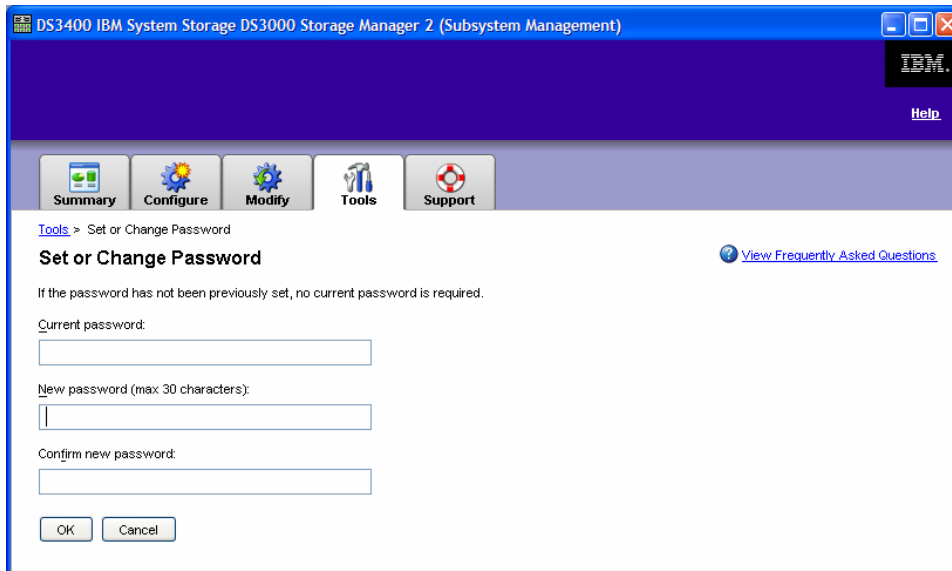
This optional step allows you to rename the subsystem. Click on **Rename the Storage Subsystem**, which will take you to the following screen.



Enter the new subsystem name and click OK.

Step 3: Set a Storage Subsystem password

This optional step allows you to set a password for the subsystem, so that unauthorized users can not make changes. Click on **Set a Storage Subsystem Password**, which will take you to the following screen.

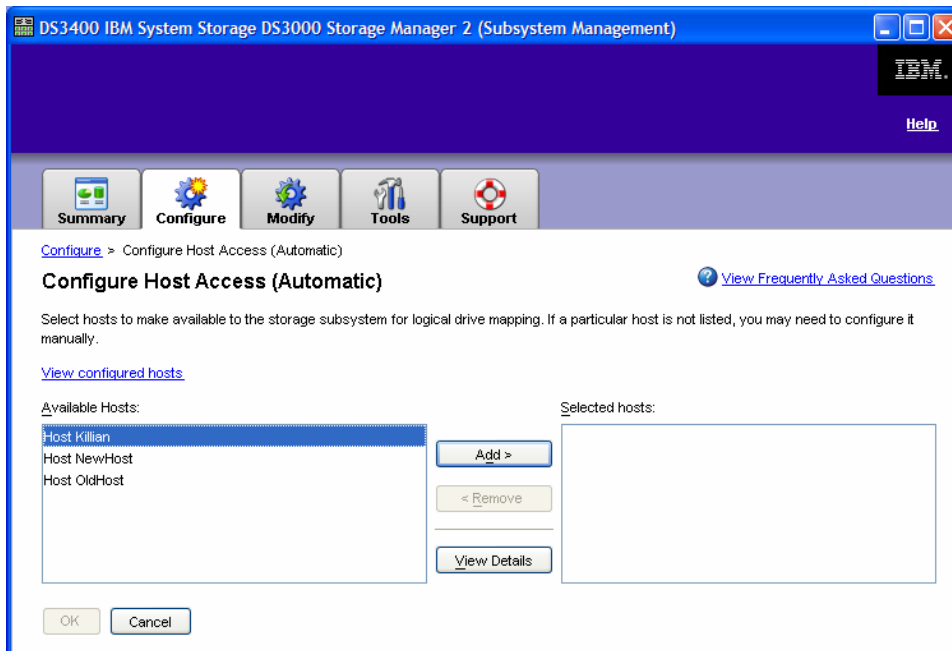


The screenshot shows the 'Set or Change Password' window within the 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)' application. The window has a blue header bar with the IBM logo and a 'Help' link. Below the header is a navigation bar with icons for 'Summary', 'Configure', 'Modify', 'Tools', and 'Support'. The main content area has a breadcrumb trail 'Tools > Set or Change Password' and a title 'Set or Change Password' with a 'View Frequently Asked Questions' link. A note states: 'If the password has not been previously set, no current password is required.' There are three input fields: 'Current password:', 'New password (max 30 characters):', and 'Confirm new password:'. At the bottom are 'OK' and 'Cancel' buttons.

Enter and confirm the new password, then click OK.

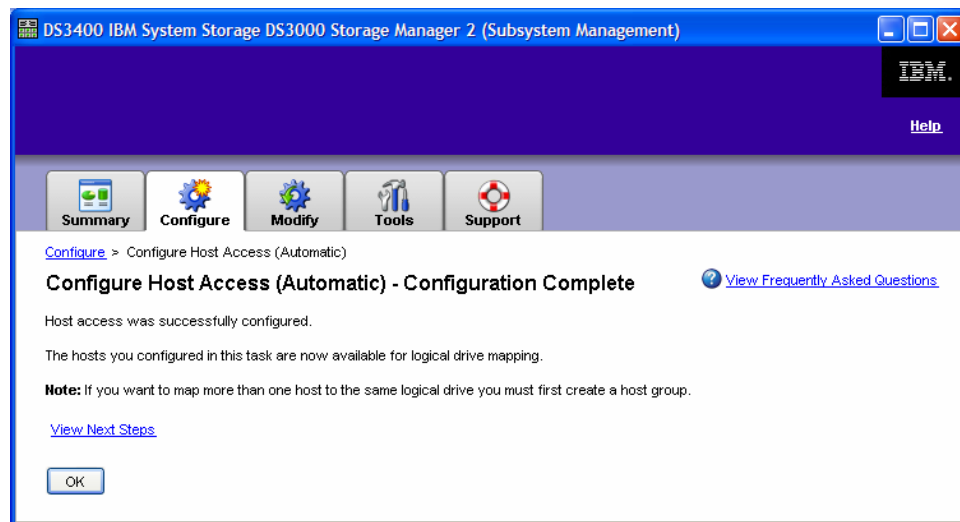
Step 4. Configure Host Access

This step allows you to provide one or more hosts access the subsystem. Select **Configure Host Access**, which will direct you to the following window.



The screenshot shows the 'Configure Host Access (Automatic)' window within the 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)' application. The window has a blue header bar with the IBM logo and a 'Help' link. Below the header is a navigation bar with icons for 'Summary', 'Configure', 'Modify', 'Tools', and 'Support'. The main content area has a breadcrumb trail 'Configure > Configure Host Access (Automatic)' and a title 'Configure Host Access (Automatic)' with a 'View Frequently Asked Questions' link. A note states: 'Select hosts to make available to the storage subsystem for logical drive mapping. If a particular host is not listed, you may need to configure it manually.' There is a link 'View configured hosts'. Below this are two lists: 'Available Hosts:' containing 'Host Killian', 'Host NewHost', and 'Host OldHost'; and 'Selected hosts:'. Between the lists are buttons 'Add >', '< Remove', and 'View Details'. At the bottom are 'OK' and 'Cancel' buttons.

After selecting the appropriate host, click **Add** and then **OK**. You will then receive confirmation of host access.



Note: In the Demo, several hosts have been pre-configured for access.

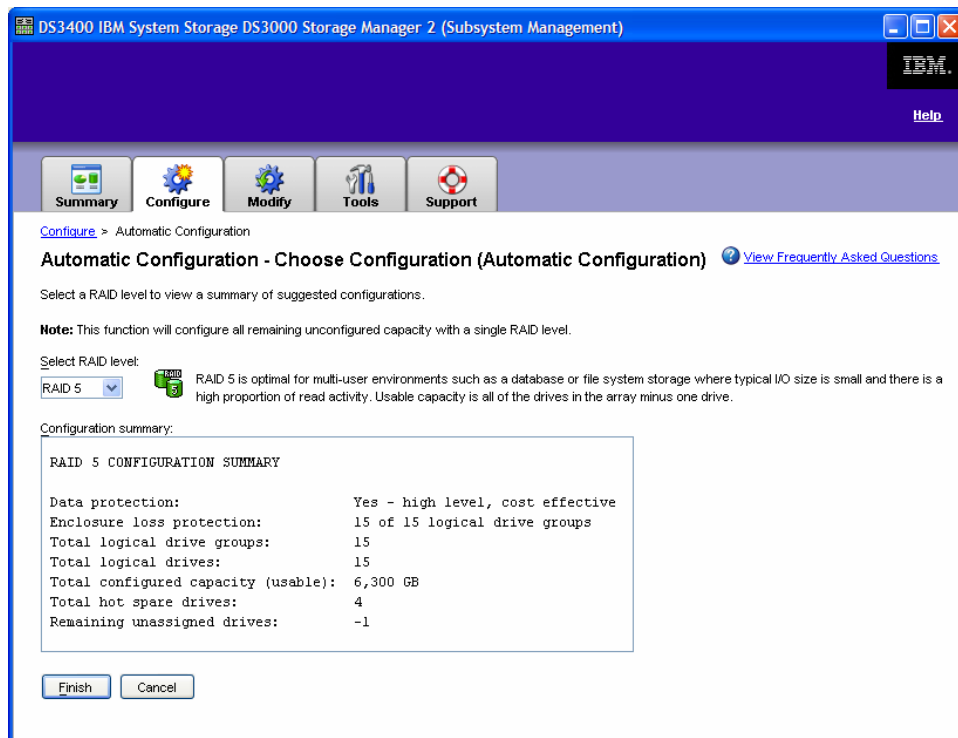
Step 5. Configuration Storage Subsystem

This step has multiple options. The **Automatic (Simple)** option is the quickest and easiest, but provides the least amount of control over the configuration. The **Manual (Advanced)** option, which still provides some automated assistance, provides more control over the configuration and will be preferred in nearly every situation. This scenario will cover the automatic option. The **Manual (Advanced)** option, **Create Logical Drives**, will be covered in Scenario 2.

Automatic (Simple)

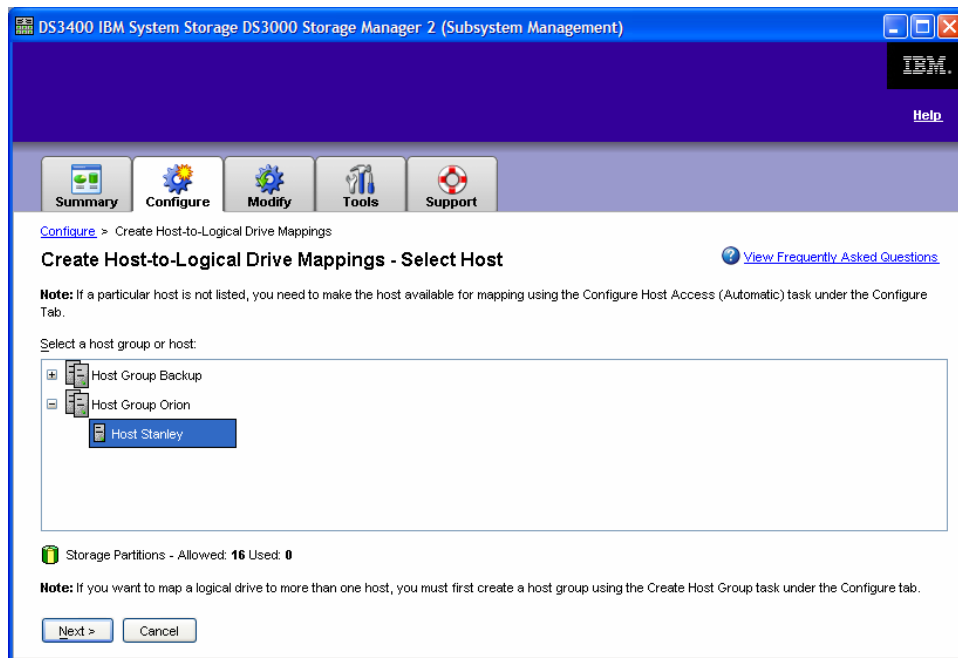
Expand the **Automatic (Simple)** option under **Configure the Storage Subsystem** and select **Step 1: Automatic Configuration**. This will bring you to the **Automatic Configuration** window where you will simply choose a RAID level and click **Finish**. Storage Manager will then configure the entire subsystem into multiple arrays based on the selected RAID level and create a single logical drive within each array.

Note: Users that wish to define the number of drives in each array, and the number and size of the logical drives in each array, should use the "**Create Logical Drives**" option.

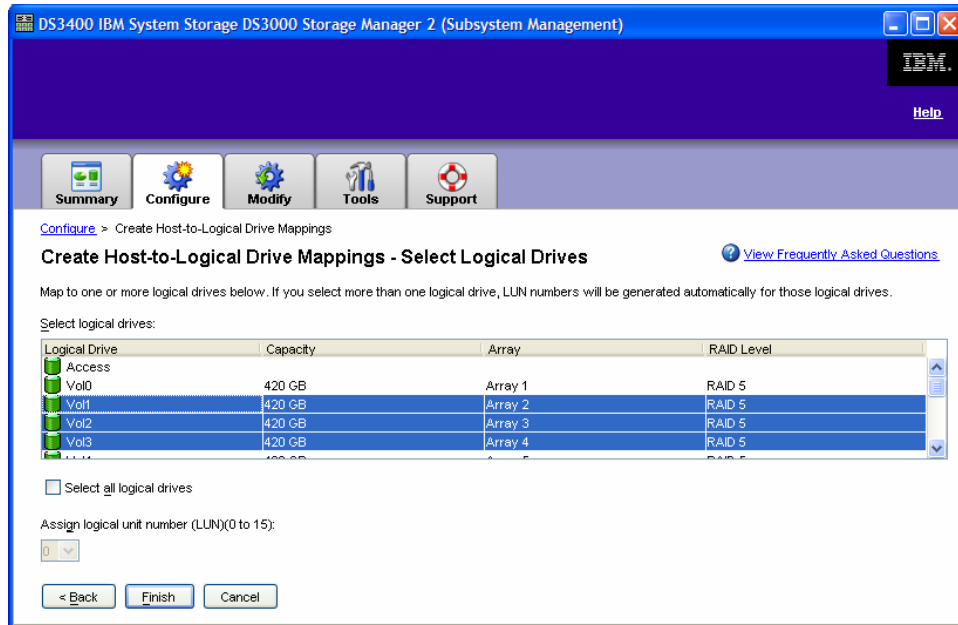


After reviewing your configuration options with RAID 5, return to the task window and select the second step in the Automatic option - **Create Host-to-Logical Drive Mappings**. This will open the **Create Host-to-Logical Drive Mappings** window.

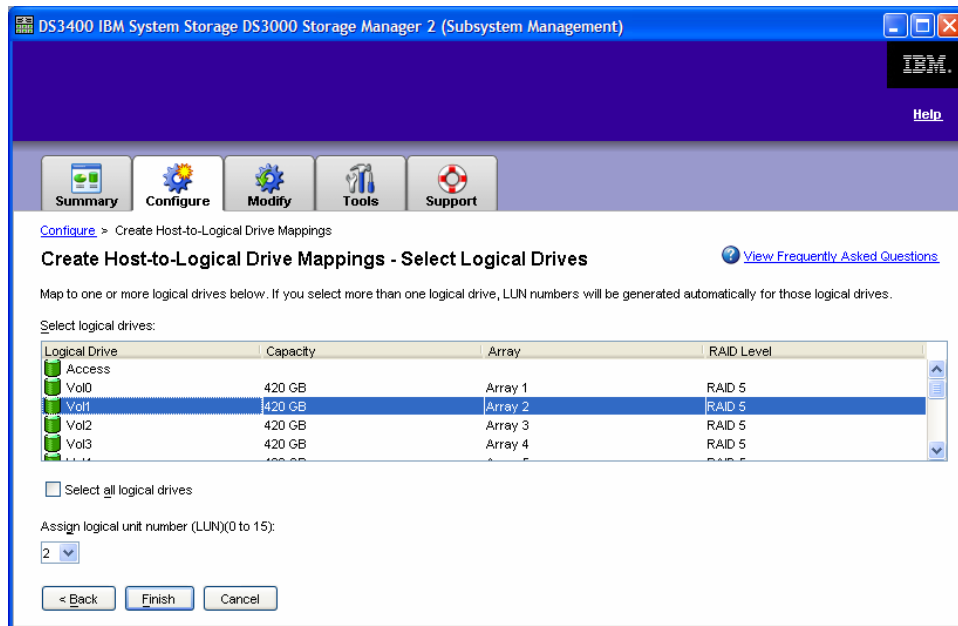
Select the host you would like to map and click **Next**.



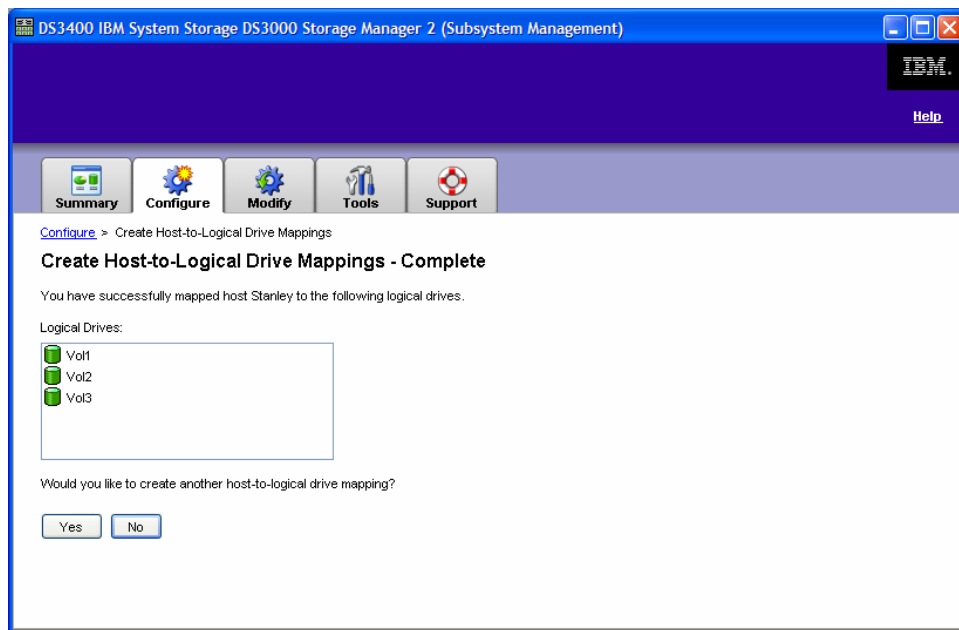
Select the logical drives you wish to be mapped to the host and click **Finish**.



If more than one logical drive is selected, the logical unit number will be assigned automatically. If only one logical drive is selected, you will also be prompted to assign it a logical unit number (see below).



After this process has been completed, click **OK** and you will be informed if the host-to-logical drive mapping was a success and you would be able to map another host-to-logical drive. For this example, select **NO**.



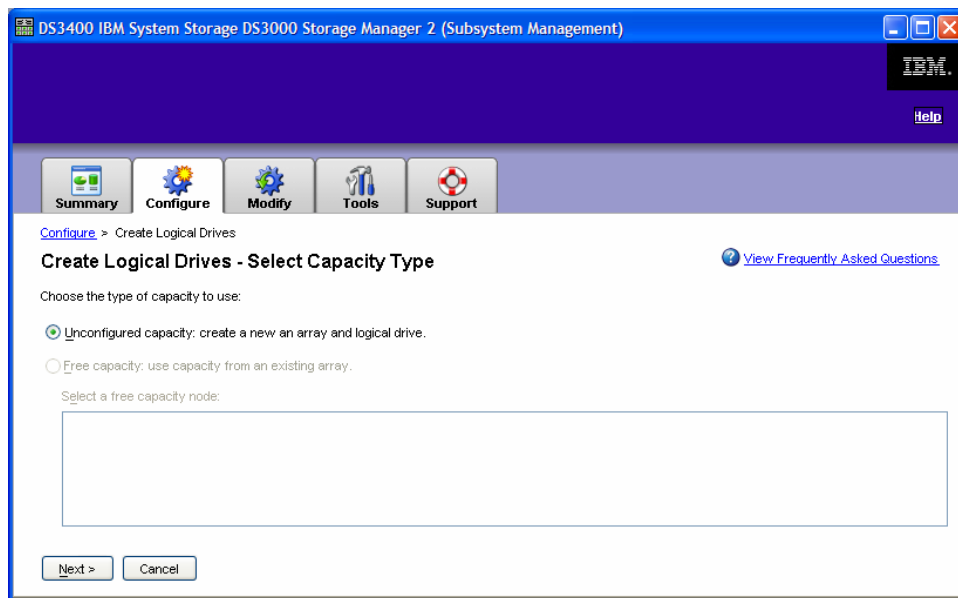
You have successfully created arrays, logical drives and mapped logical drives to a host with the simple Automatic option.

Scenario 2 – “I have newly added drives that I would like configure”

Logical Drive Creation

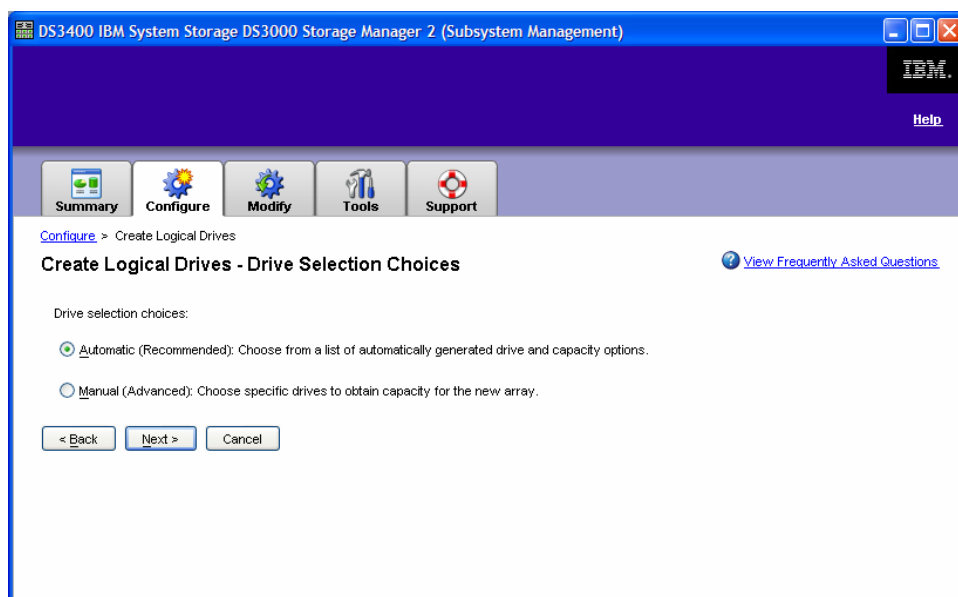
Like many configuration tasks within Storage Manager, logical drive creation can be an **Automatic** or **Manual** task. We will review the **Automatic (recommended)** selection to demonstrate the simplicity and ease of this task. The **Manual** option is covered in the Advanced Scenarios section on page 39.

From the **Configure** tab, or from the **Initial Setup Tasks** window under the **Manual (Advanced)** option, select **Create Logical Drives**. This will take you to the **Create Logical Drives – Select Capacity Type** window to decide on the type of capacity you wish to use.

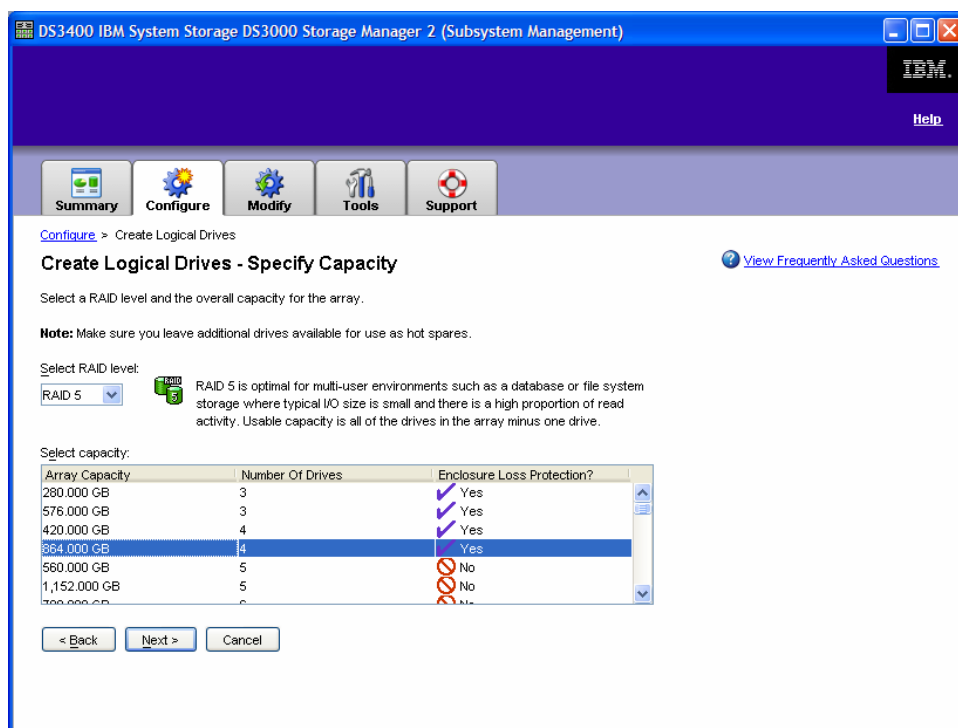


Select **Unconfigured Capacity** and click **Next**.

You will then be offered the option of **Automatic** or **Manual** configuration. Select **Manual** and **Next**.



At the **Create Logical Drives – Specify Capacity** window, first select the RAID level desired. You will then see a list of array options based on the number and type of drives in the configuration. From this list, select the array that has the attributes desired and click **Next**.



The next window, **Create Logical Drives – Specify Logical Drive**, requires you to select the logical drive capacity from the free capacity that is available, name the logical drive and identify its I/O characteristics. We will select 200GB capacity, name the logical drive **Marketing** and select the I/O characteristics based on a file system application.

DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)

Summary Configure Modify Tools Support

Configure > Create Logical Drives

Create Logical Drives - Specify Logical Drive

[View Frequently Asked Questions](#)

Set the new logical drive's capacity, name and logical drive I/O characteristics.

Note: Make sure to leave some free capacity if you want to create more logical drives on the same array.

Capacity and name

Array RAID level: RAID 5
Free capacity: 864.000 GB

New logical drive capacity: Units: GB

Name (30 characters maximum):

Logical Drive I/O characteristics

☒ File system (typical)
☐ Database
☐ Multimedia

Cache pre-fetch: on
Segment size: 128 KB

< Back Next > Cancel

The **Create Logical Drives – Map Logical Drive to Host** window will allow you to map your logical drive to a host group or individual host. We will map it to Host Stanley and assign it LUN one. Click **Finish**.

The screenshot shows the 'Create Logical Drives - Map Logical Drive To Host' window. The title bar reads 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)'. The interface includes a top navigation bar with 'Summary', 'Configure', 'Modify', 'Tools', and 'Support' tabs. The 'Configure' tab is active, showing the 'Create Logical Drives' path. The main content area is titled 'Create Logical Drives - Map Logical Drive To Host' and includes a 'View Frequently Asked Questions' link. It prompts the user to 'Select a mapping option:' with a radio button selected for 'Map now:'. Below this, it instructs the user to 'Map to one of the host groups or hosts below' and provides a list of available hosts: 'Host Group Backup', 'Host Group Orion', and 'Host Stanley' (which is highlighted). A status bar indicates 'Storage Partitions - Allowed: 16 Used: 0'. A note states: 'Note: If you want to map the new logical drive to more than one host, you must first create a host group using the Create Host Group task under the Configure tab.' Below the note, it asks the user to 'Assign logical unit number (LUN)(0 to 15):' with a dropdown menu showing '1'. There is also a radio button for 'Map later:'. At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'.

You will receive confirmation that the creation of your logical drive has been completed!

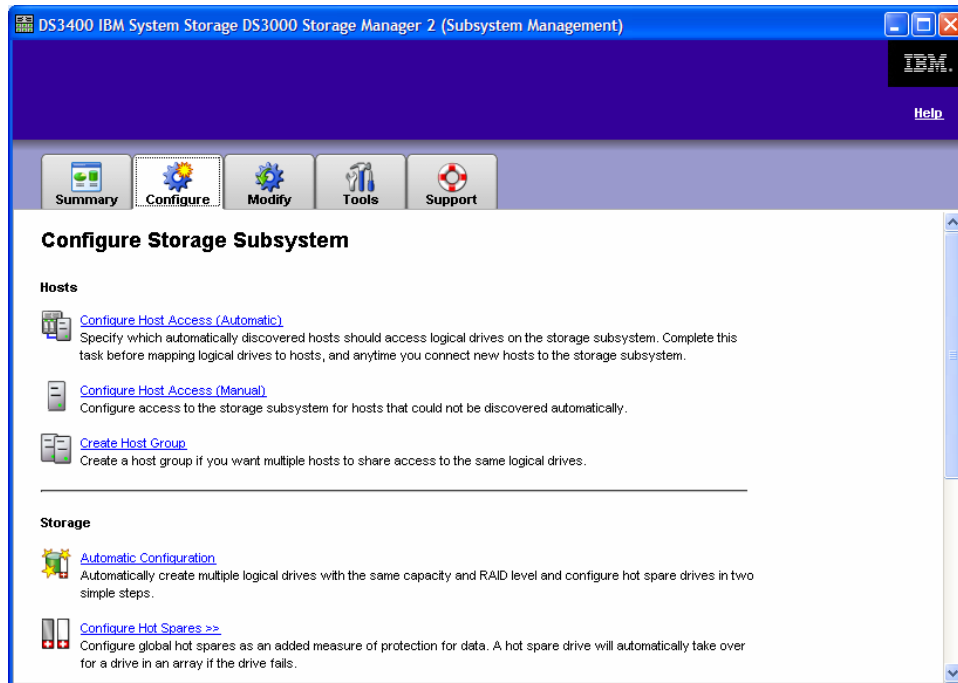
The screenshot shows the 'Create Logical Drives - Complete' window. The title bar reads 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)'. The interface is similar to the previous window, with the 'Configure' tab active. The main content area is titled 'Create Logical Drives - Complete' and includes a 'View Frequently Asked Questions' link. It displays a confirmation message: 'Logical Drive MArketing was successfully created on array 1. Logical Drive MArketing was mapped to host Stanley.' Below this, it lists 'Next steps:' and provides instructions: 'After you create and map a logical drive, use the appropriate procedures (such as the hot_add utility or other method, and the SMdevices utility) to register the logical drive on your host.' A note states: 'Note: If you plan to create multiple logical drives it is advisable to create and map all of the logical drives prior to registering them with hosts, so you can register all logical drives at once.' It then asks the user 'Do you want to create another logical drive?' with 'Yes' and 'No' buttons.

Scenario 3 – “I want to protect against a failed drive”

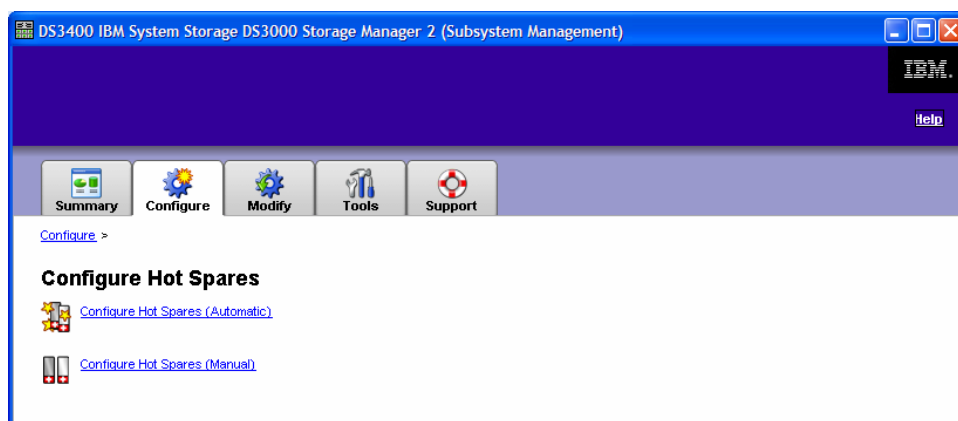
Automatic Hot Spare Drive Configuration

A Hot Spare Drive is an unassigned drive which automatically replaces a member of an array if a drive fails. The Hot Spare Drive adds another level of data protection by acting as a “reserve” drive in the instance of a drive failure.

From the **Configure** tab, select **Configure Hot Spares**.

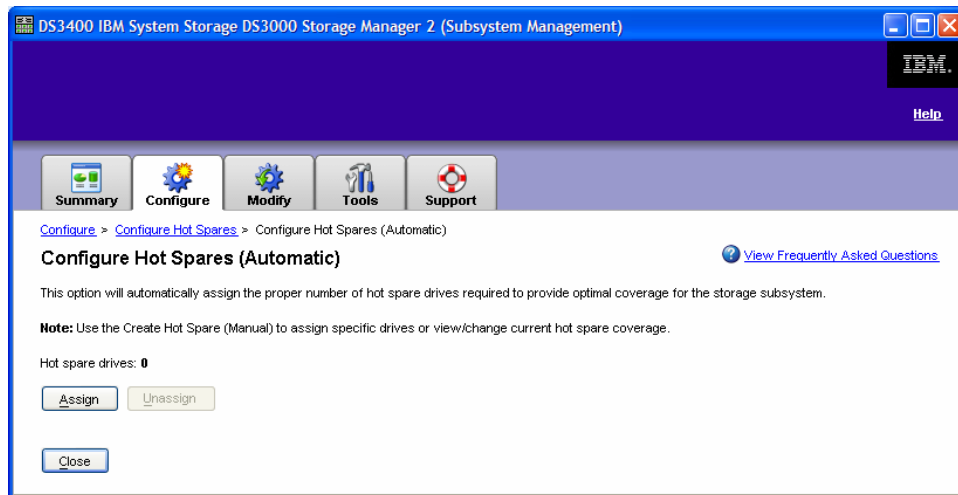


As it is important to emphasize the ease of use of the DS3000 Storage Manager, we will demonstrate the **Automatic** option. Therefore, at the next window, **Configure Hot Spares**, we will select **Configure Hot Spares (Automatic)**.



Note: Use the **Create Hot Spare (Manual)** when assigning specific drives or viewing/making changes to the current hot spare coverage. The manual process is covered in the Advanced Scenarios section on page 37.

This will bring you to the **Configure Hot Spares (Automatic)** window. This option will automatically assign the proper number of hot spare drives required to provide optimal coverage for the storage array.



Select **Assign** and you will be informed if this task was completed.



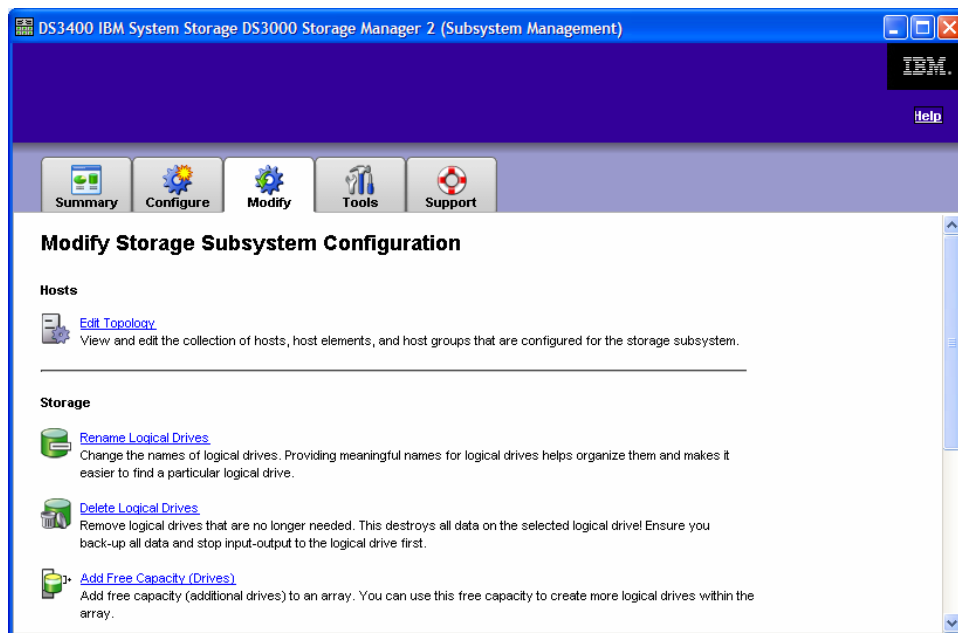
The above screen shot will provide confirmation of the number of hot spares that have been configured.

Scenario 4 – “How do I add capacity to an array?”

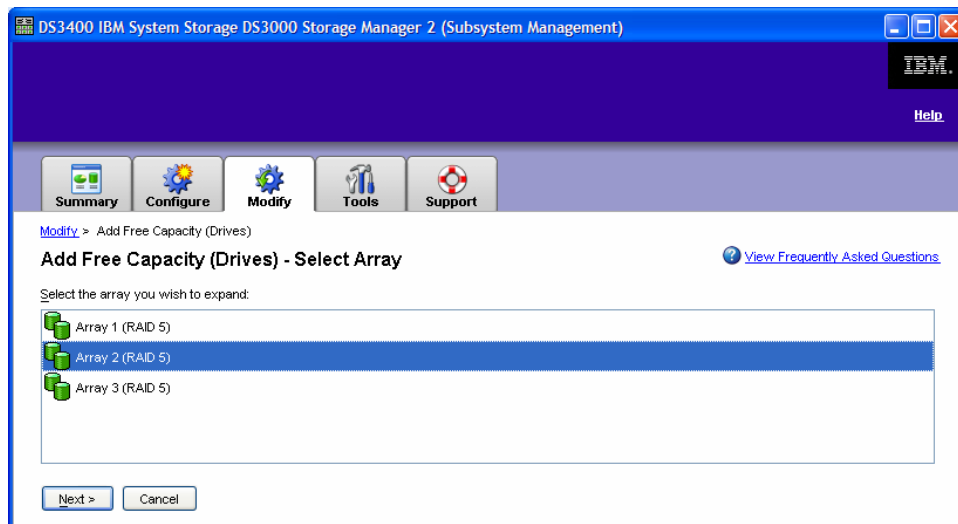
Expanding Drive Capacity (Dynamic Array Expansion)

The DS3000 Storage Manager provides an easy method to expand the capacity of an array by simply adding more drives to it. This provides additional performance and capacity to the array. You can demonstrate the ease of adding additional capacity with the DS3000 Storage Manager by demonstrating the following steps.

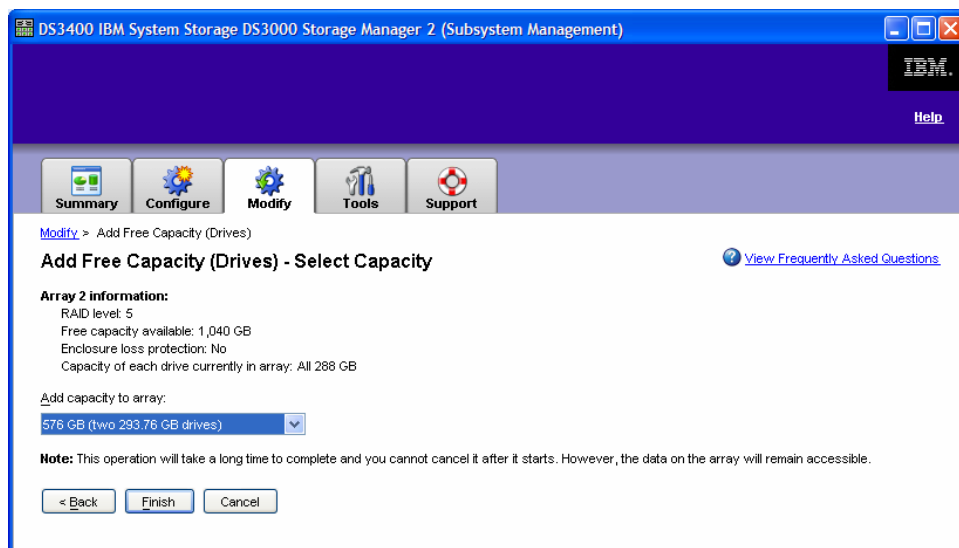
First, select the **Modify** tab. Click on **Add Free Capacity (Drives)**.



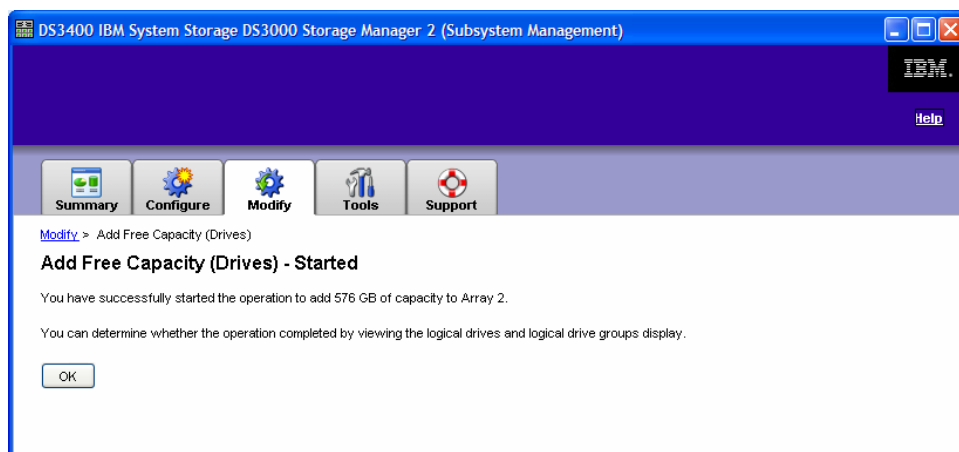
The window, **Add Free Capacity (Drives) – Selected Array**, will then prompt you to select the array that you wish to expand. Click **Next**.



And you are almost there! At the **Add Free Capacity (Drives) – Select Capacity** screen, the DS3000 Storage Manager will provide some status information about the array you selected. From here you can add one or two drives to the existing array (note: this process can be repeated if desired). Click **Finish**.



And the process of adding free capacity starts.



Note: This operation will take an extended period of time to complete and you cannot cancel it once it starts, however, the data on the volume group will remain accessible.

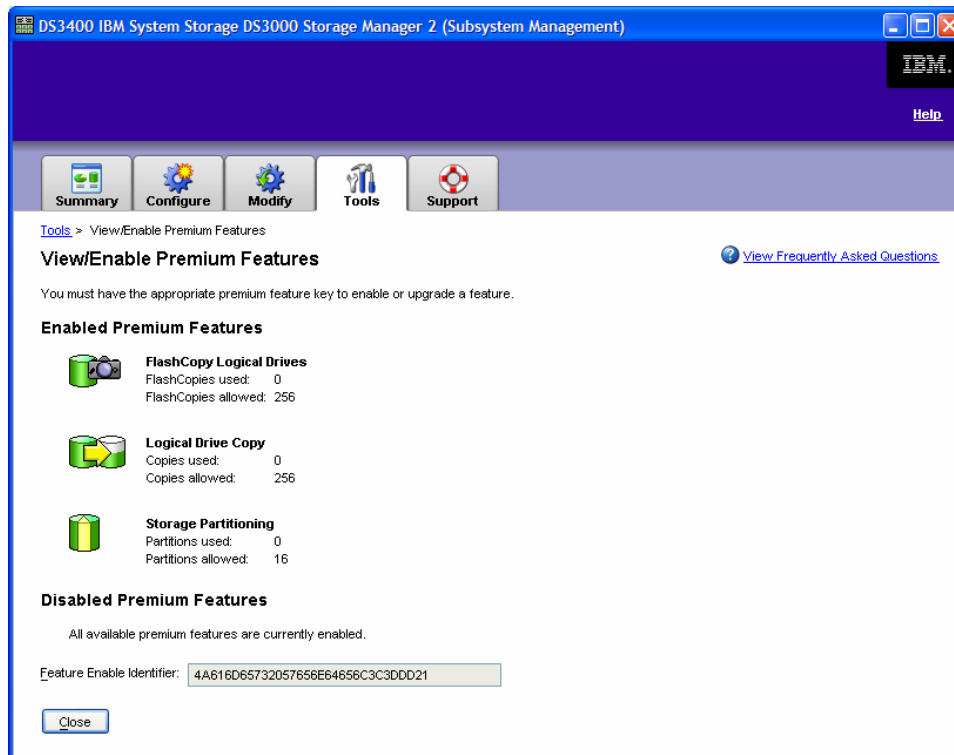
You can monitor the process of this operation by viewing the volume and array displays.

DS3000 Storage Manager Premium License Features

The Premium Feature Licenses offered with the DS3000 Storage Manager includes Partitioning, FlashCopy and Volume Copy.

These features can be viewed and enabled by accessing the **Tools** tab on the main tool bar.

As you can see in the following window, all Premium Features have been enabled. For these Premium Features to be enabled, a Feature Enable Identifier was entered. This Feature Enable Identifier is provided when the Premium Feature Storage Pack or Premium Features license was purchased.



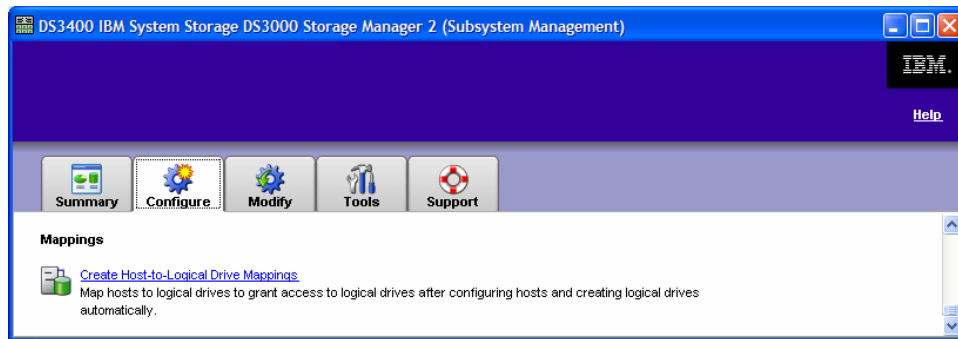
The following scenarios will help guide you when to recommend a specific feature as well as the process of how to utilize the feature with the DS3000 Storage Manager.

Premium Feature Scenario 1 – “How can I share capacity across my hosts?”

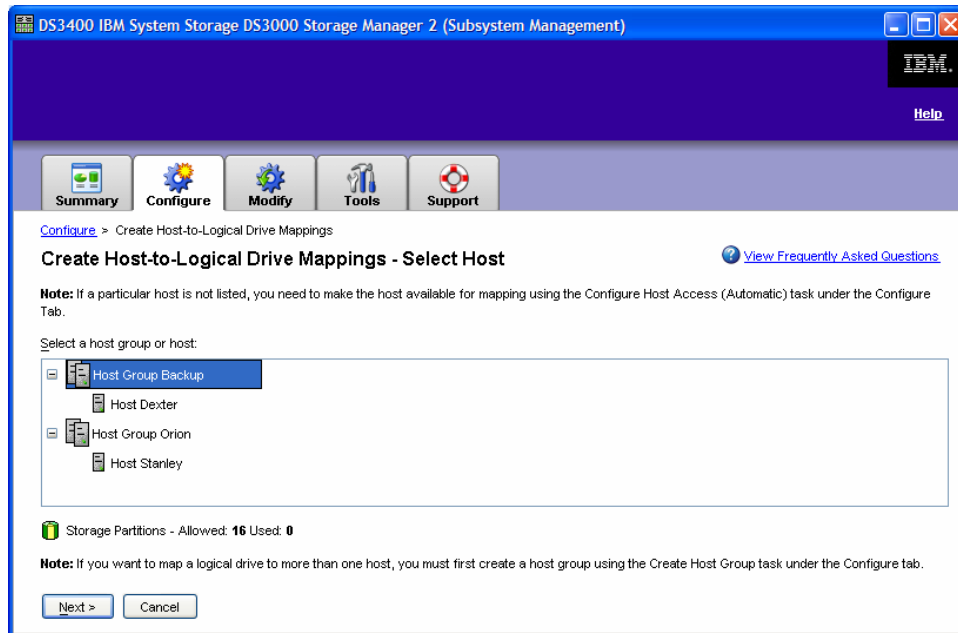
Storage Partitioning

Storage partitions are created when you define **Host-to-logical Drive Mappings**. Partitioning allows administrators to create multiple virtual systems from a single DS3000 series disk system. Each partition represents a virtual disk system and consists of one or more logical drives assigned to an individual server or group of servers.

Create Host-to-Logical Drive Mapping can be administered by going to the **Configure** tab. At the **Configure** window, select **Create Host-to-Logical Drive Mappings**.

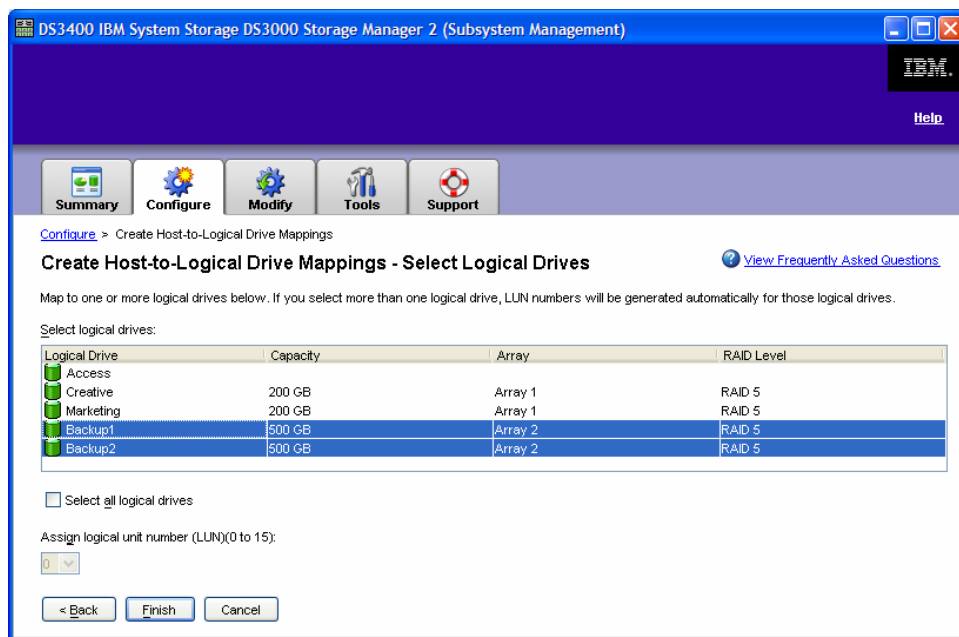


This will open the **Create Host-to-Logical Drive Mappings - Select Host** window.



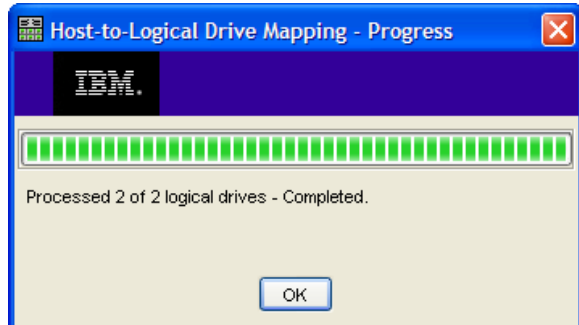
Select the host you would like to map and click **Next**. This will take you to **Create Host-to-Logical Drive Mappings – Select Logical Drives** screen in which you select the logical drive(s) you wish to be mapped to the host.

Note: Unmapped logical drives will need to be created to demonstrate this feature.



If more than one logical drive is selected, the logical unit numbers will be assigned automatically. If only one logical drive is selected, you will also be prompted to assign it a logical unit number.

Select **Finish** following your logical drive selection.



After this process has been completed, click **OK**. You will then be informed if the host-to-logical drive mapping was a success and if you would like to map another host-to-logical drive. For this example, select **NO**.

You have successfully mapped a host to a logical drive!

Premium Feature Scenario 2 – “How do I improve my application service levels with hot backups?”

FlashCopy

One significant business problem that the IBM DS3000 Storage Manager solves is the ever-increasing time to complete a backup of today's applications. As data grows, the time to back it up also grows. The difficulty of provisioning time for backups in a 24x7 environment is challenging for administrators.

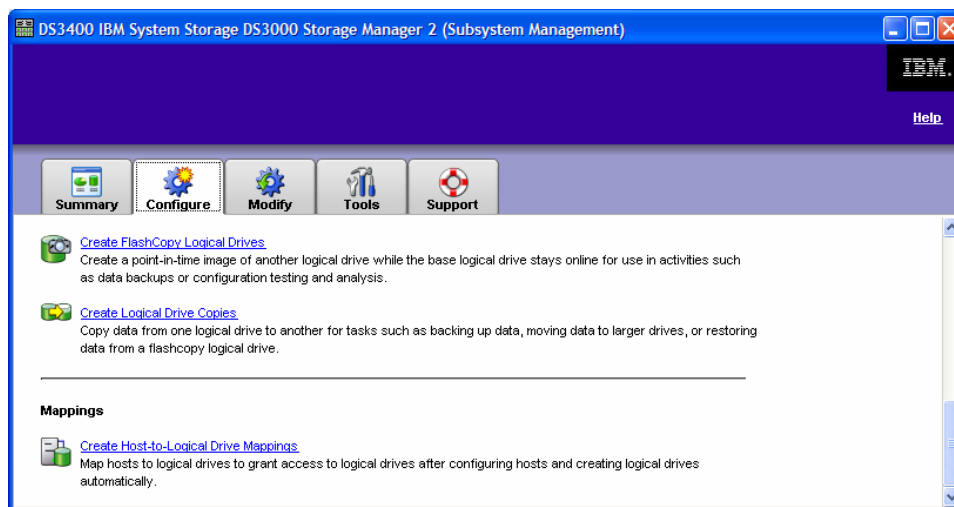
The DS3000 Storage Manager's **FlashCopy** feature solves this problem by minimizing the amount of time application I/O must be suspended, or the amount of time the application is in hot backup mode.

Instead of impacting the application for the length of the backup process, FlashCopy is used to create a nearly instantaneous image of the source data. Then, the application can come out of hot backup mode and resume normal processing while the backup application begins copying the point-in-time FlashCopy to the desired target.

FlashCopy can be used to create a point-in-time image of any standard logical drive at any time, as long as there are no tasks (such as rebuilds or expansions) in process on that logical drive.

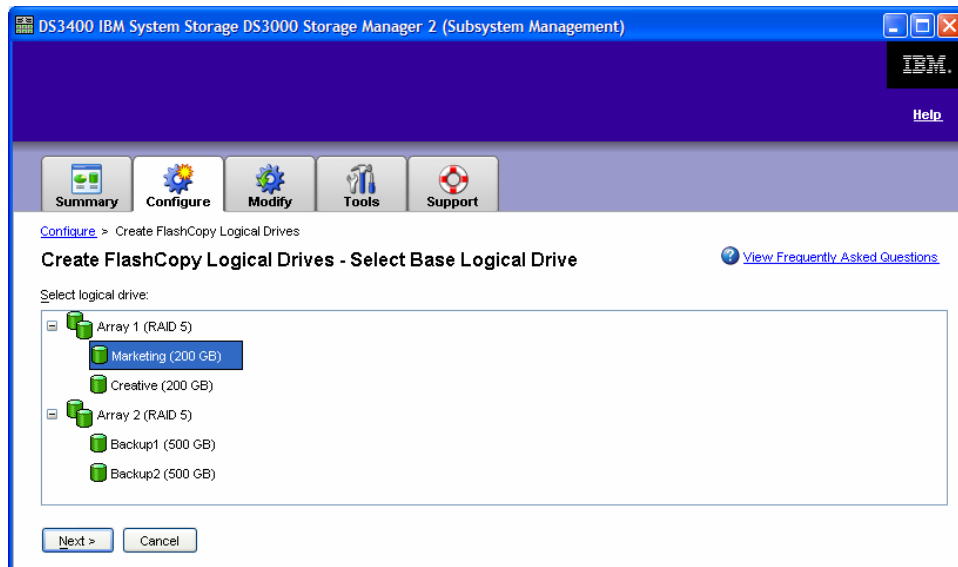
A simple demonstration of the DS3000 Storage Manager's FlashCopy function will show the benefits of reducing the impact of lengthy backups.

Once the FlashCopy feature is enabled (see page 26), go to the **Configure** tab and select **Create FlashCopy Logical Drives**.



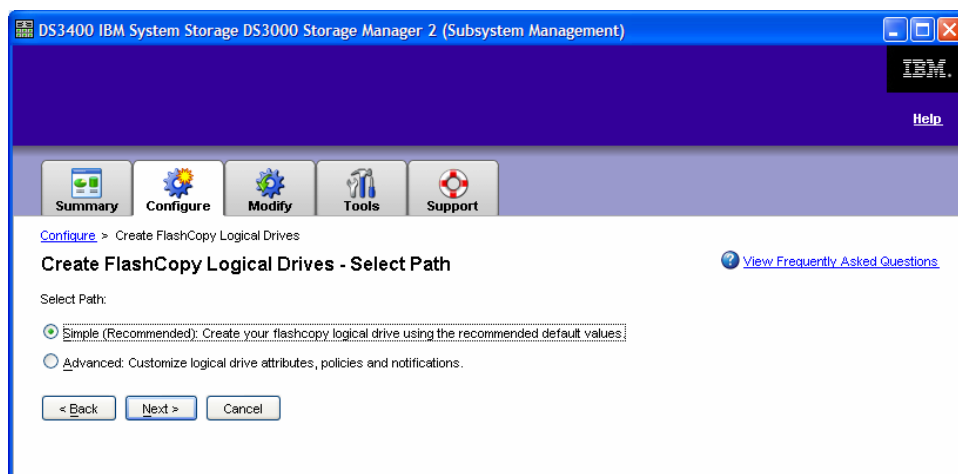
Note: You must refer to the specific instructions in online help for your host OS before creating a FlashCopy. Failure to complete the steps listed for your host OS may result in loss of FlashCopy data consistency. You will also receive a dialog box reminding you of this before you proceed.

At this selection, you will be directed to the **Create FlashCopy Logical Drives - Select Base Logical Drive** window. Select the logical drive which you would like you would like a FlashCopy image of.



Also note that when you create a FlashCopy logical drive, you automatically create FlashCopy Repository logical drive. A FlashCopy Repository logical drive stores information about the data that has changed since the FlashCopy logical drive was created. Repository logical drives are reserved for DS3000 Storage Manager use. For example, you cannot select a FlashCopy Repository logical drive for use as a base logical drive or as a target logical drive in a FlashCopy or VolumeCopy operation.

After your logical drive selection, you will be asked to select a path. You have the choice of taking the **Simple** setup, or the **Advanced** setup for more control over the FlashCopy parameters. For this example and to demonstrate the intuitive and simple nature of the DS3000 Storage Manager, we will select the **Simple** option.



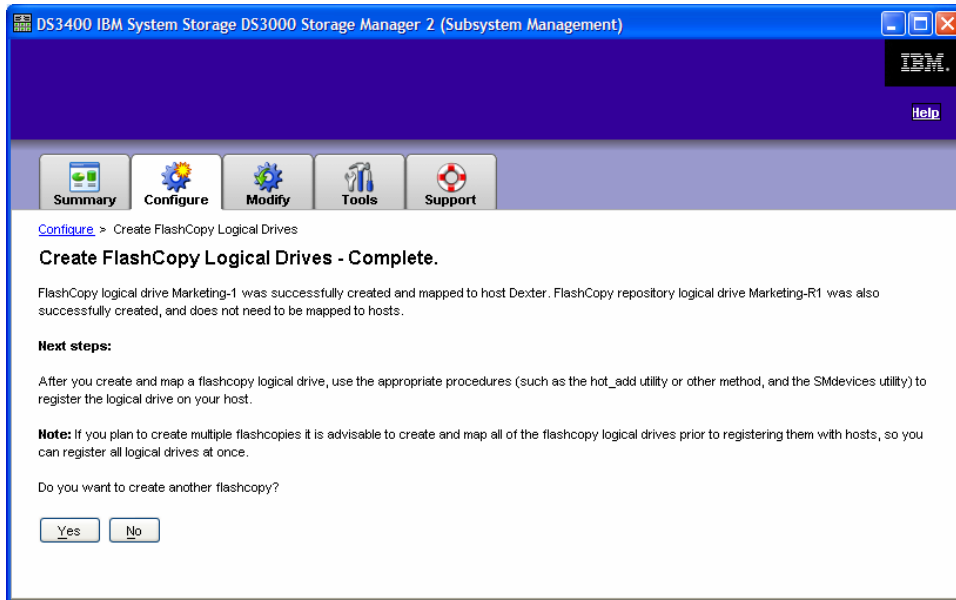
You will then be able to change the default logical drive names if desired.

The screenshot shows the 'Create FlashCopy Logical Drives - Specify Logical Drive Names' screen in the IBM DS3400 Storage Manager 2. The window title is 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)'. The top navigation bar includes 'Summary', 'Configure', 'Modify', 'Tools', and 'Support'. The 'Configure' tab is active, showing a breadcrumb 'Configure > Create FlashCopy Logical Drives'. The main title is 'Create FlashCopy Logical Drives - Specify Logical Drive Names'. A 'View Frequently Asked Questions' link is present. The instructions state: 'You should choose names for your flashcopy and flashcopy repository logical drives that help you associate them with their base logical drive.' The 'Base logical drive name' is 'Marketing'. The 'FlashCopy logical drive name (30 characters maximum)' is 'Marketing-1'. The 'FlashCopy repository logical drive name (30 characters maximum)' is 'Marketing-R1'. At the bottom are buttons for '< Back', 'Next >', and 'Cancel'.

Once you specify the appropriate names and click **Next**, you will select which host or host groups you would like the FlashCopy mapped to.

The screenshot shows the 'Create FlashCopy Logical Drives - Map FlashCopy Logical Drive to Hosts' screen in the IBM DS3400 Storage Manager 2. The window title is 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)'. The top navigation bar includes 'Summary', 'Configure', 'Modify', 'Tools', and 'Support'. The 'Configure' tab is active, showing a breadcrumb 'Configure > Create FlashCopy Logical Drives'. The main title is 'Create FlashCopy Logical Drives - Map FlashCopy Logical Drive to Hosts'. A 'View Frequently Asked Questions' link is present. The instructions state: 'Select a mapping option:'. The 'Map now:' option is selected. The instructions state: 'Map to one of the host groups or hosts below. If a particular host is not listed, you need to make the host available for mapping using the Configure Host Access (Automatic) task under the Configure tab.' The 'Select a host group or host:' section shows a list of host groups: 'Host Group Backup', 'Host Dexter', and 'Host Group Orion'. Below this, it says 'Storage Partitions - Allowed: 16 Used: 1'. A 'Note' states: 'If you want to map the flashcopy logical drive to more than one host, you must first create a host group.' The 'Assign logical unit number (LUN)(0 to 15):' is set to '2'. The 'Map later:' option is also shown with instructions: 'Map later using the Create Host-to-Logical Drives Mappings task under the Configure tab.' At the bottom are buttons for '< Back', 'Finish', and 'Cancel'.

After selecting the host or host group mapping, assign a LUN and **Finish**.



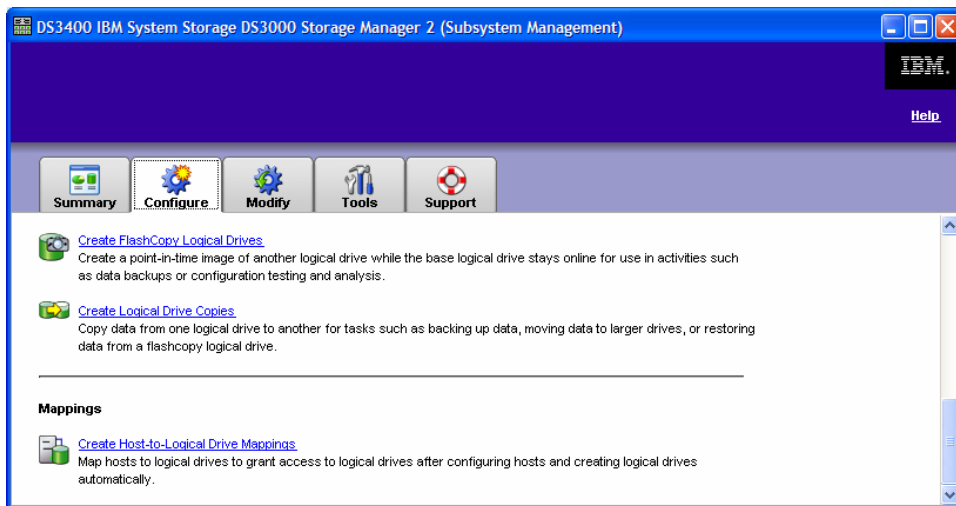
This will complete your FlashCopy logical drive creation. A **Summary** screen will open which shows summary information regarding the logical drive and the FlashCopy point-in-time image.

Premium Feature Scenario 3 – “How can I create an independent copy of my data?”

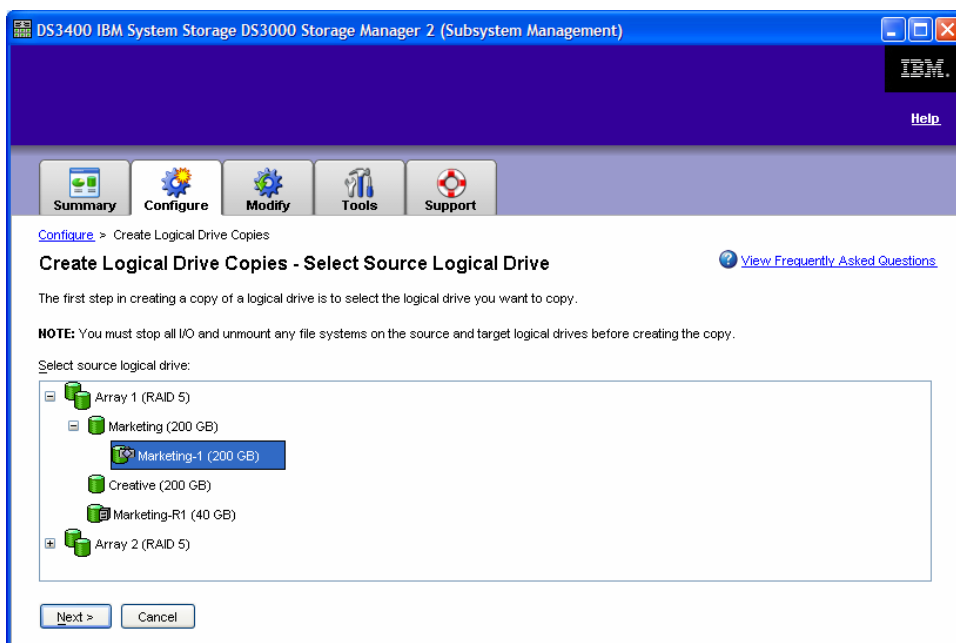
VolumeCopy

Another premium feature of the DS3000 Storage Manager is VolumeCopy. VolumeCopy creates a complete physical copy, or a clone, of a logical drive within a disk system. The clone is a unique entity that can be assigned to any host and used by applications requiring a point-in-time (PiT) copy of production data – without affecting the performance of that production data. This feature is typically used in conjunction with FlashCopy to provide an independent copy of a point-in-time FlashCopy logical drive.

Once the VolumeCopy feature is enabled (see page 26), go to the **Configure** tab and select **Create Logical Drive Copies**.



You will then be directed to the **Create Logical Drive Copies – Select Source Logical Drive** window. Select the logical drive you wish to copy.



You will then be directed to the **Create Logical Drive Copies – Select Target Logical Drive**. Select the logical drive that will be the target copy and click **Next**.

DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)

Summary Configure Modify Tools Support

Configure > Create Logical Drive Copies [View Frequently Asked Questions](#)

Create Logical Drive Copies - Select Target Logical Drive

You must select the logical drive that will be the target of the copy. The target logical drive can be either an existing logical drive or a new logical drive you create.

Note: Starting the copy process will overwrite ALL existing data on the target logical drive and make the target logical drive READ-ONLY to hosts during and after the copy.

Select target logical drive:

☒ Use an existing logical drive:

Select logical drive:

Logical Drive	Capacity	Array	RAID Level
Create	200.000 GB	Array 1	RAID 5
Marketing_Data	200.000 GB	Array 2	RAID 5
Backup1	500.000 GB	Array 2	RAID 5
Backup2	500.000 GB	Array 2	RAID 5

☐ Create a new logical drive (on array 1):

Enter a new logical drive name (max 30 characters):

Copy_of_Marketing-1

< Back Next > Cancel

Note: Starting the copy process will overwrite all existing data on the target logical drive as well as place the source logical drive READ-ONLY mode during the copy. Therefore, best practice is to copy a FlashCopy image, which will maintain access to the production data.

The **Create Logical Drive Copies – Set Copy Priority** window will then appear which gives you the ability to change the copy priority to designate how the disk system resources should be used when creating the copy. This enables your customers to minimize either copy time or the overall I/O impact to their disk system

DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)

Summary Configure Modify Tools Support

Configure > Create Logical Drive Copies [View Frequently Asked Questions](#)

Create Logical Drive Copies - Set Copy Priority

Set the copy priority to specify how storage subsystem system resources should be used when creating the copy. Higher priorities will allocate more resources to the copy operation at the expense of performance.

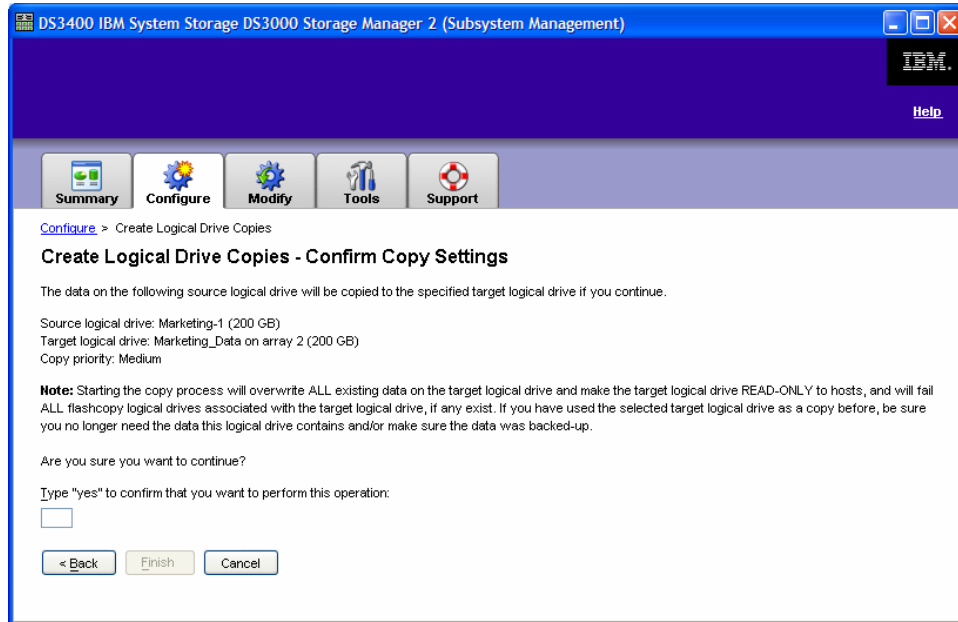
Select copy priority:

Lowest Highest

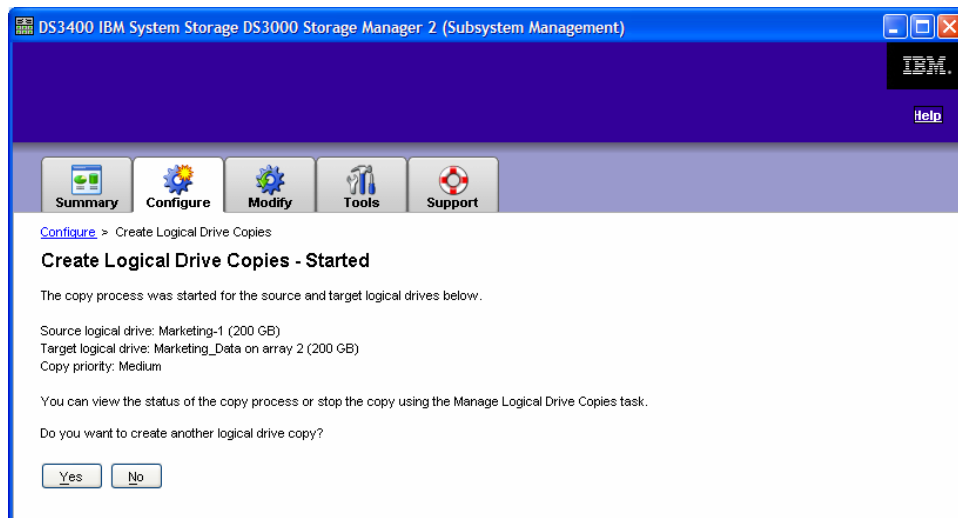
< Back Next > Cancel

Move the priority bar between **Lowest** and **Highest** and click **Next**.

The final window, **Create Logical Drive Copies – Confirm Copy Settings**, reviews the source logical drive, target logical drive and priority settings you have selected. Again, as this will overwrite all existing data on the target logical drive and make the target logical drive read-only, it is important to ensure that these settings are correct.



At the available prompt, type **yes** and select **Finish**. The VolumeCopy finishes in a short period of time.



And your VolumeCopy has been created!

Advanced Features and Manual Functions

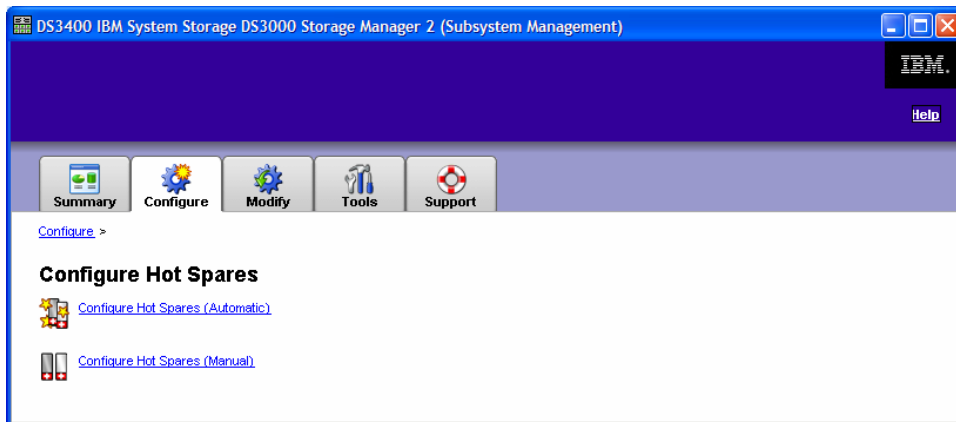
The remainder of the DS3000 Storage Manager Demo guide is intended to highlight some of the more advanced and manual features that this Storage Manager offers. As the key selling point of the DS3000 Storage Manager is its ease of use and intuitive interface, many of your customers will not see a need for these advanced features for their organization.

However, the DS3000 disk systems may be sold to an organization with experienced IT staff that may want to take advantage of these features or “take the wheel” in creating the specific configurations they have in mind versus an pre-set configuration that is offered through the automatic options. As well, as your organizations become more savvy and comfortable with the Storage Manager, they may request this additional functionality that is available to them.

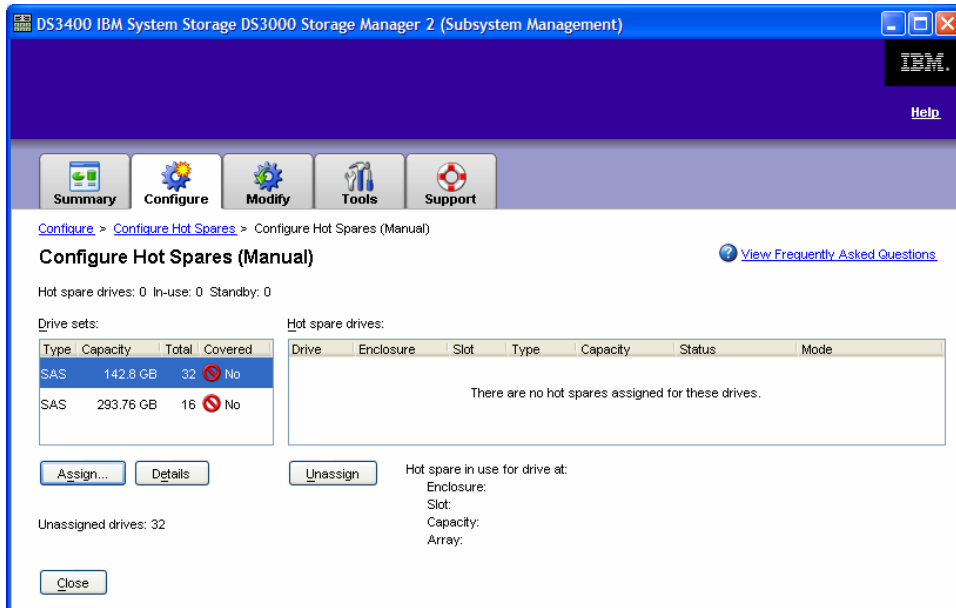
Manual Hot Spare Configuration

The manual Hot Spare configuration option is especially useful for assigning specific drives or viewing/making changes to the current hot spare coverage.

From the **Configure** tab, select **Configure Hot Spares**. You will then be directed to the **Configure Hot Spares** window. Select **Configure Hot Spares (Manual)**.

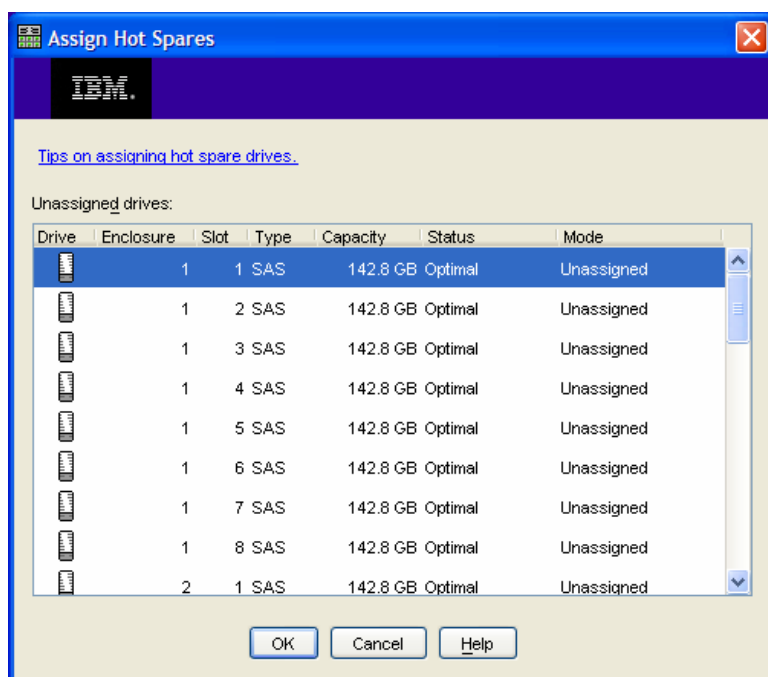


The **Configure Hot Spares (Manual)** screen provides the current hot spare drives in use and prompts you to select the drive type you wish to assign as the new hot spare drive.

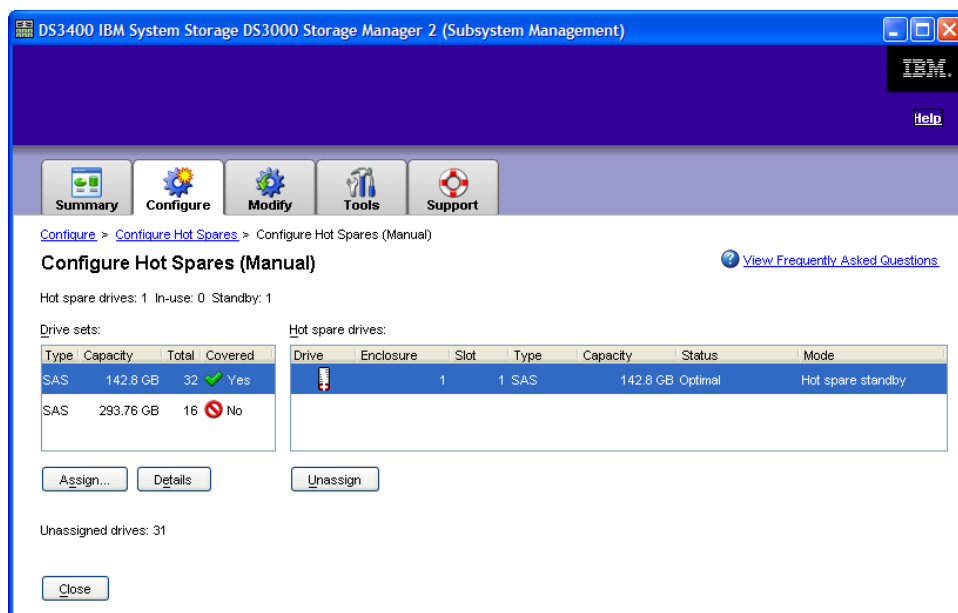


For this example, select the 142.8GB SAS disk drive, and click **Assign**.

A dialog box, **Assign Hot Spares**, will open up and provide the available disk drives that are available and fit the type of drive and capacity you specified. Select the desired drive and click **OK**.



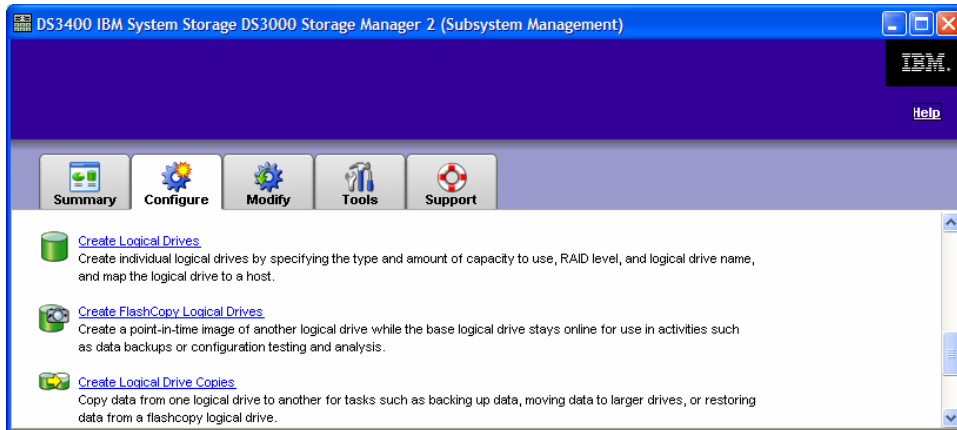
And you have completed the manual configuration of a Hot Spare drive.



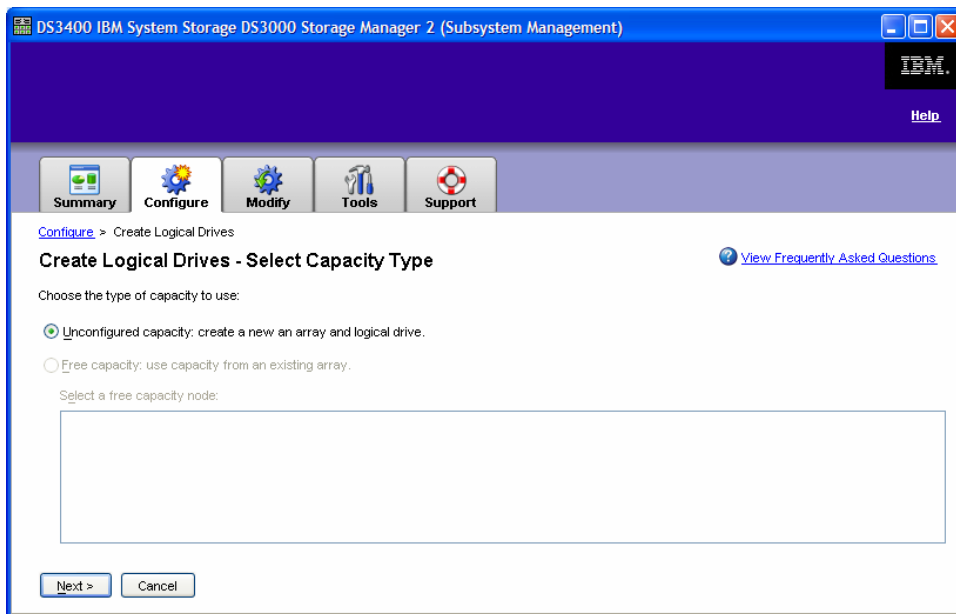
Manual Logical Drive Configuration

As we have previously created logical drives via the **Automatic** option on page 18, let's review the **Manual (Advanced)** option.

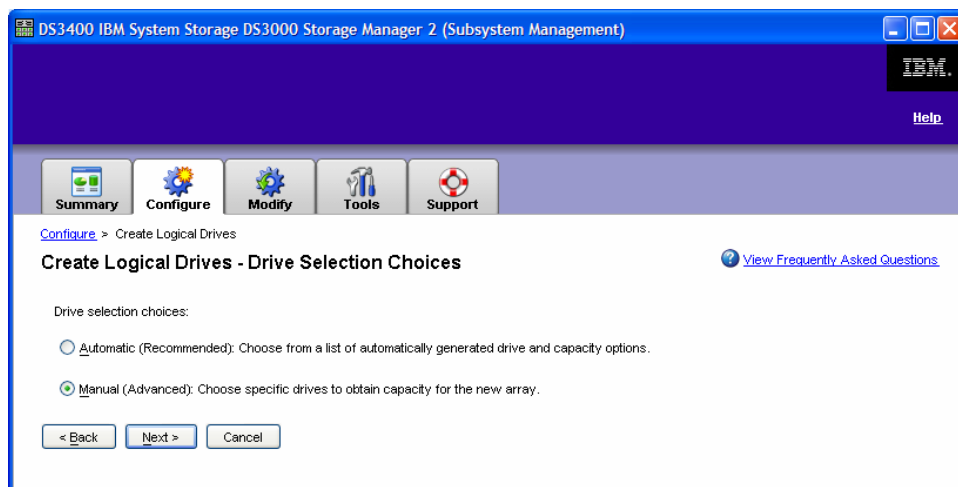
From the **Configure** tab, select **Create Logical Drives**.



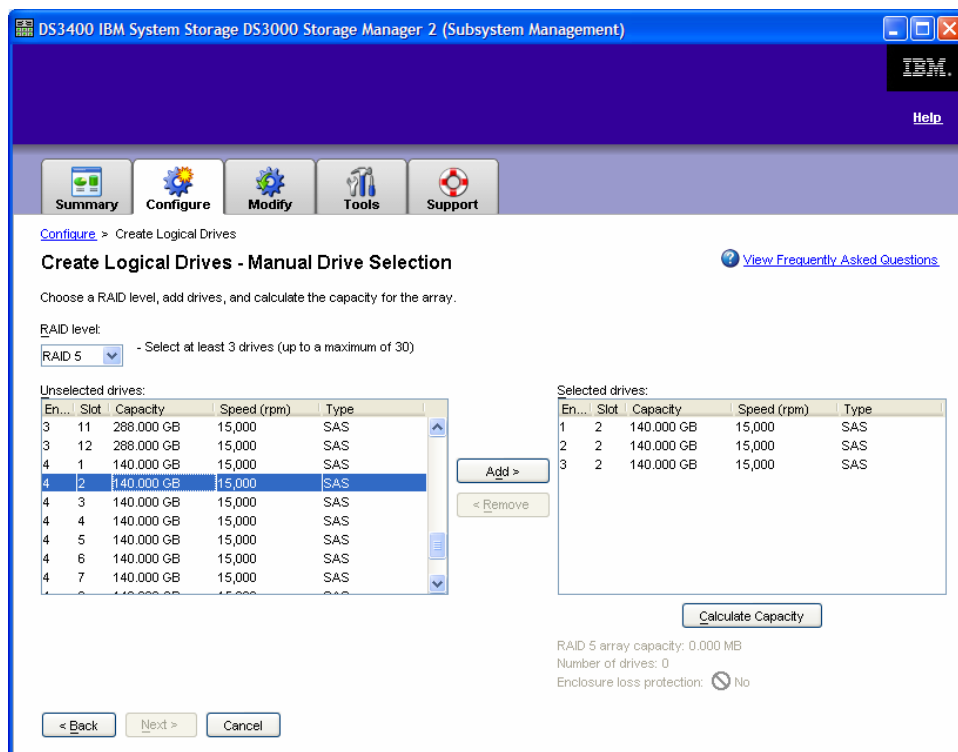
This will then prompt you to the **Create Logical Drives – Select Capacity Type** screen which allows you to choose capacity from either unconfigured capacity or free capacity from an existing array. Select **Unconfigured Capacity** and click **Next**.



From the **Create Logical Drives - Drive Selection Choices** window, select **Manual (Advanced)** and click **Next**.



You're then taken to the **Create Logical Drives - Manual Drive Selection** window. Select the desired drives and **Add** them to the array.



Once all the drives are selected, select **Calculate Capacity** to ensure the proposed array will be your capacity and channel protection requirements. Then click **Next**.

DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)

IBM

Help

Summary Configure Modify Tools Support

Configure > Create Logical Drives

Create Logical Drives - Manual Drive Selection

[View Frequently Asked Questions](#)

Choose a RAID level, add drives, and calculate the capacity for the array.

RAID level:
RAID 5 - Select at least 3 drives (up to a maximum of 30)

Unselected drives:

En...	Slot	Capacity	Speed (rpm)	Type
3	11	288,000 GB	15,000	SAS
3	12	288,000 GB	15,000	SAS
4	1	140,000 GB	15,000	SAS
4	3	140,000 GB	15,000	SAS
4	4	140,000 GB	15,000	SAS
4	5	140,000 GB	15,000	SAS
4	6	140,000 GB	15,000	SAS
4	7	140,000 GB	15,000	SAS
4	8	140,000 GB	15,000	SAS

Add >

< Remove

Selected drives:

En...	Slot	Capacity	Speed (rpm)	Type
1	2	140,000 GB	15,000	SAS
2	2	140,000 GB	15,000	SAS
3	2	140,000 GB	15,000	SAS
4	2	140,000 GB	15,000	SAS

Calculate Capacity

RAID 5 array capacity: 420,000 GB
Number of drives: 4
Enclosure loss protection: ☒ Yes

< Back Next > Cancel

Once the array is created, the **Create Logical Drives – Specify Logical Drive** window comes up and the logical drive capacity, name and I/O characteristics are defined.

DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)

IBM

Help

Summary Configure Modify Tools Support

Configure > Create Logical Drives

Create Logical Drives - Specify Logical Drive

[View Frequently Asked Questions](#)

Set the new logical drive's capacity, name and logical drive I/O characteristics.

Note: Make sure to leave some free capacity if you want to create more logical drives on the same array.

Capacity and name

Array RAID level: RAID 5
Free capacity: 420,000 GB

New logical drive capacity: Units: GB

Name (30 characters maximum):

Logical Drive I/O characteristics

☒ File system (typical)
☐ Database
☐ Multimedia

Cache pre-fetch: on
Segment size: 128 KB

< Back Next > Cancel

The **Create Logical Drives – Map Logical Drive to Host** window will allow you to map your logical drive to a host group or individual hosts. As this is the first logical drive to be mapped, we will assign it to LUN number one, **Finish**.

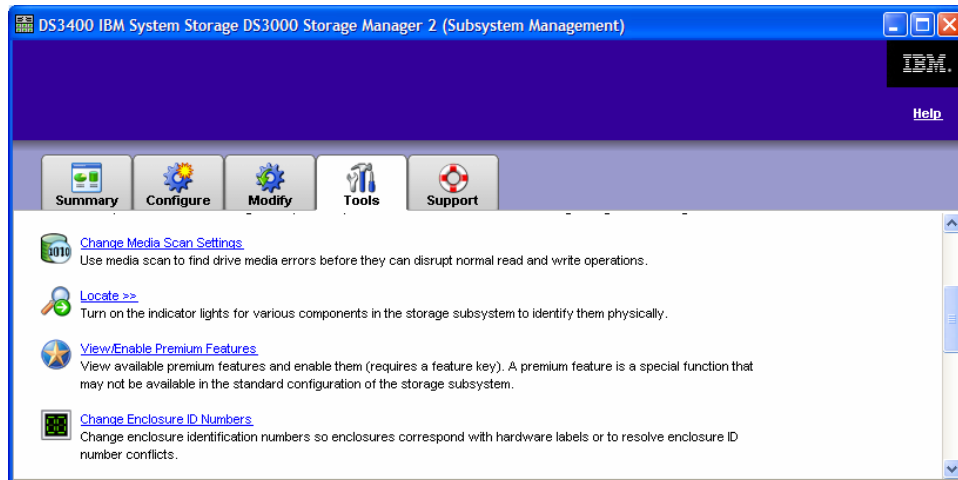
The screenshot shows the 'Create Logical Drives - Map Logical Drive To Host' window. The title bar reads 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)'. The interface includes a top navigation bar with 'Summary', 'Configure', 'Modify', 'Tools', and 'Support' tabs. The 'Configure' tab is active, and the breadcrumb path is 'Configure > Create Logical Drives'. The main heading is 'Create Logical Drives - Map Logical Drive To Host', with a link to 'View Frequently Asked Questions' on the right. Below the heading, it says 'Select a mapping option:'. There are two radio buttons: 'Map now:' (selected) and 'Map later:'. Under 'Map now:', there is a text box for 'Map to one of the host groups or hosts below. If a particular host is not listed, you need to make the host available for mapping using the Configure Host Access (Automatic) task under the Configure tab.' Below this is a list box titled 'Select a host group or host:' containing 'Host Group Backup', 'Host Group Orion', and 'Host Stanley' (which is highlighted). Below the list box, it says 'Storage Partitions - Allowed: 16 Used: 0'. A note states: 'Note: If you want to map the new logical drive to more than one host, you must first create a host group using the Create Host Group task under the Configure tab.' Below the note is a label 'Assign logical unit number (LUN)(0 to 15):' with a dropdown menu showing '1'. At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'.

And you will receive confirmation that the creation of your logical drive has been completed!

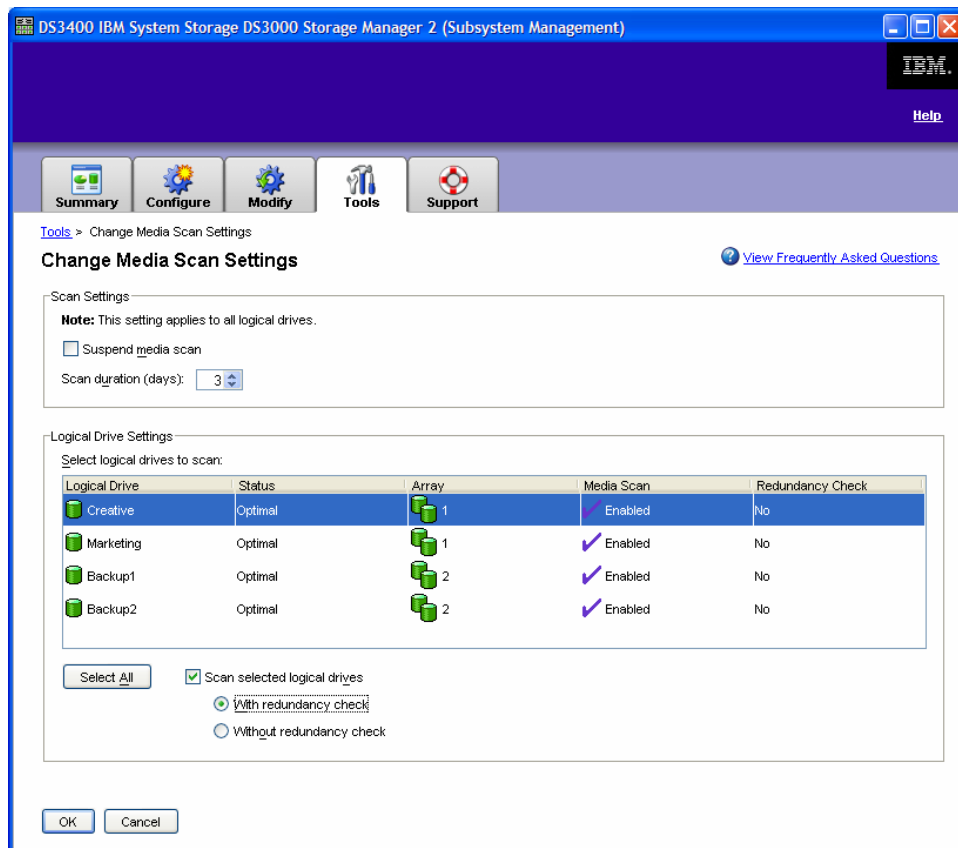
The screenshot shows the 'Create Logical Drives - Complete' window. The title bar reads 'DS3400 IBM System Storage DS3000 Storage Manager 2 (Subsystem Management)'. The interface is similar to the previous window, with the 'Configure' tab active and the breadcrumb path 'Configure > Create Logical Drives'. The main heading is 'Create Logical Drives - Complete', with a link to 'View Frequently Asked Questions' on the right. Below the heading, it says 'Logical Drive Marketing was successfully created on array 1. Logical Drive Marketing was mapped to host Stanley.' Below this is a section titled 'Next steps:' with the text 'After you create and map a logical drive, use the appropriate procedures (such as the hot_add utility or other method, and the SMdevices utility) to register the logical drive on your host.' Below this is a note: 'Note: If you plan to create multiple logical drives it is advisable to create and map all of the logical drives prior to registering them with hosts, so you can register all logical drives at once.' Below the note is a question 'Do you want to create another logical drive?' with two buttons: 'Yes' and 'No'.

Media Scan Settings

The DS3000 Storage Manager provides the ability to perform a background scan of media to ensure data integrity. On the **Tools** tab select **Change Media Scans Settings**.

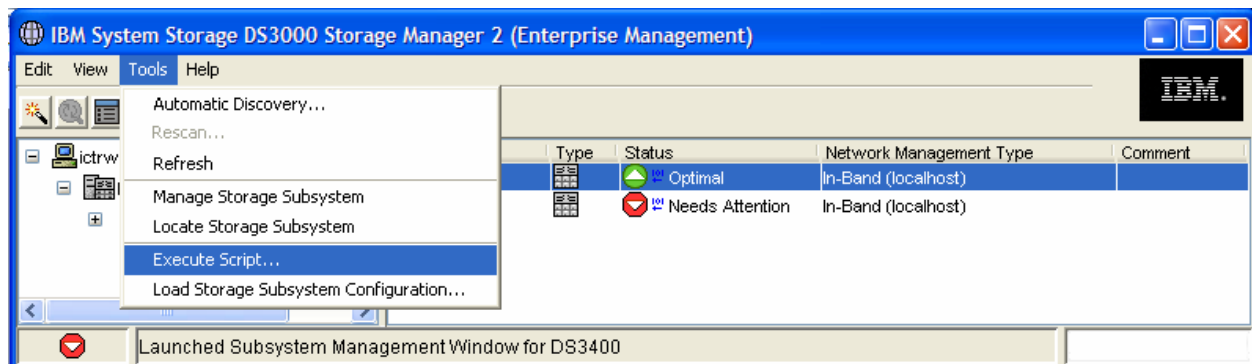


At the **Change Media Scans Settings** dialog box select the logical drives (one or more) to scan and their settings (scan duration and with or without redundancy check). Media scans can also be suspended from this window. Click **OK** and the operation begins.

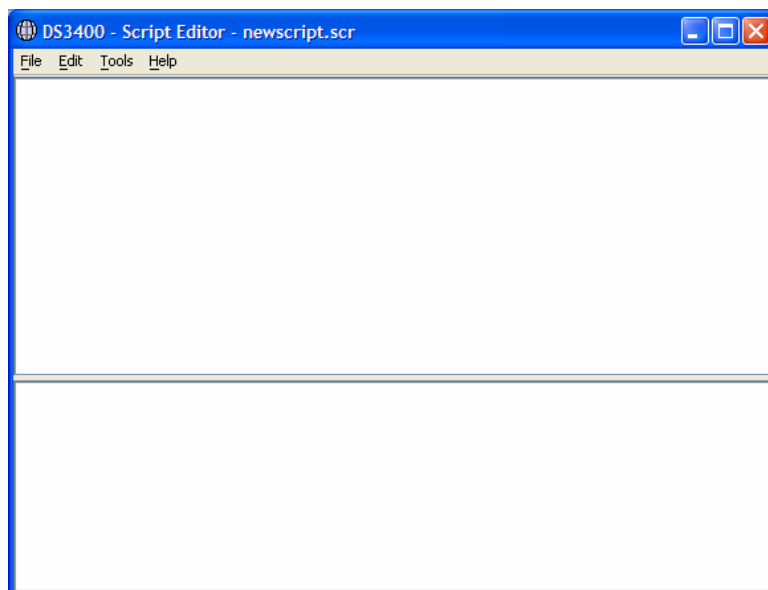


Command Line Interface

While not well suited for the part-time administrator, there is a command line interface (CLI) for the DS3000 disk systems. It is accessed from the **Enterprise Management Window** under **Tools**.



This will open up the script editor.



Direction on how to create a script is beyond the scope of this demo guide.