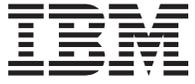




IBM Systems Solution with SAP Discovery™ system  
Quick Start Guide







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Quick Start Guide

**Note**

Before using this information and the product it supports, read the general information in "Notices" on page 35, the *Warranty Information* document, and the *IBM Safety Information* and the *Environmental Notices and User Guide* documents on the IBM Documentation CD.

**The most recent version of this document is available at <http://www.ibm.com/supportportal>.**

**First Edition (September 2012)**

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## Chapter 1. Introduction

This document describes the IBM® Systems solution *with SAP® Discovery system* setup and recovery process for IBM Systems hardware. The SAP Discovery system has been preinstalled by IBM and delivered to you for immediate use with your hardware. If a hard disk drive fails or the operating system becomes corrupted, you must replace the drive or reinstall the software image.

### **Important:**

1. If you are in the United States or Canada, see “DISCOVERY SYSTEM - SAP 180 DAYS EVALUATION LICENSE AGREEMENT for USA and Canada” on page 25 for the specific terms and conditions of SAP’s End User License Agreement.
2. If you are not in the United States or Canada, see “DISCOVERY SYSTEM - SAP 180 DAYS EVALUATION LICENSE (LOAN-) AGREEMENT for all countries except USA and Canada” on page 28 for the specific terms and conditions of SAP’s End User License Agreement.

**Note:** Throughout this document, the term “SAP discovery system hardware” is used to refer to the IBM Systems solution with *SAP Discovery system*.

---

## Documentation and related information

In addition to this *Quick Start Guide*, the following resources are available on the web:

- **IBM ServerProven program for compatibility information of IBM Servers and selected products**

You can obtain compatibility information about IBM System x® and IBM BladeCenter® products from <http://www.ibm.com/systems/info/x86servers/serverproven/compat/us/>.

- **IBM Systems and servers documentation and technical support**

Go to <http://www.ibm.com/supportportal> to locate the most recent versions of all IBM System x and IBM BladeCenter documentation, and also obtain support for Windows hardware and systems-management software.

- **SAP Discovery system support and information**

General information about SAP Discovery system is available on the SAP Discovery System in Service-Oriented Architecture (SOA) and SAP website at <http://scn.sap.com/community/soa/discovery-system>. For additional SAP support, log your OSS messages on component **CA-SOA-DS**. You can also post questions and collaborate with peers in the SAP Discovery system forum on SDN: <https://forums.sdn.sap.com/forum.jspa?forumID=226>.

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## Notices and statements in this document

The following notices and statements are used in this document:

- **Note:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage might occur.

- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These statements indicate situations that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

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## Chapter 2. Setup overview

The setup of the IBM Systems solution *with SAP Discovery system* involves the following procedures. You must complete these procedures in the order listed:

- “Installing VMware vSphere Client”
- “Configuring and starting the virtual machines” on page 4
- “Setting up the SAP Discovery system” on page 10

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### Installing VMware vSphere Client

VMware vSphere Client is required to perform many of the tasks described in this document. Complete the following steps to install VMware vSphere Client on a suitable system in your network.

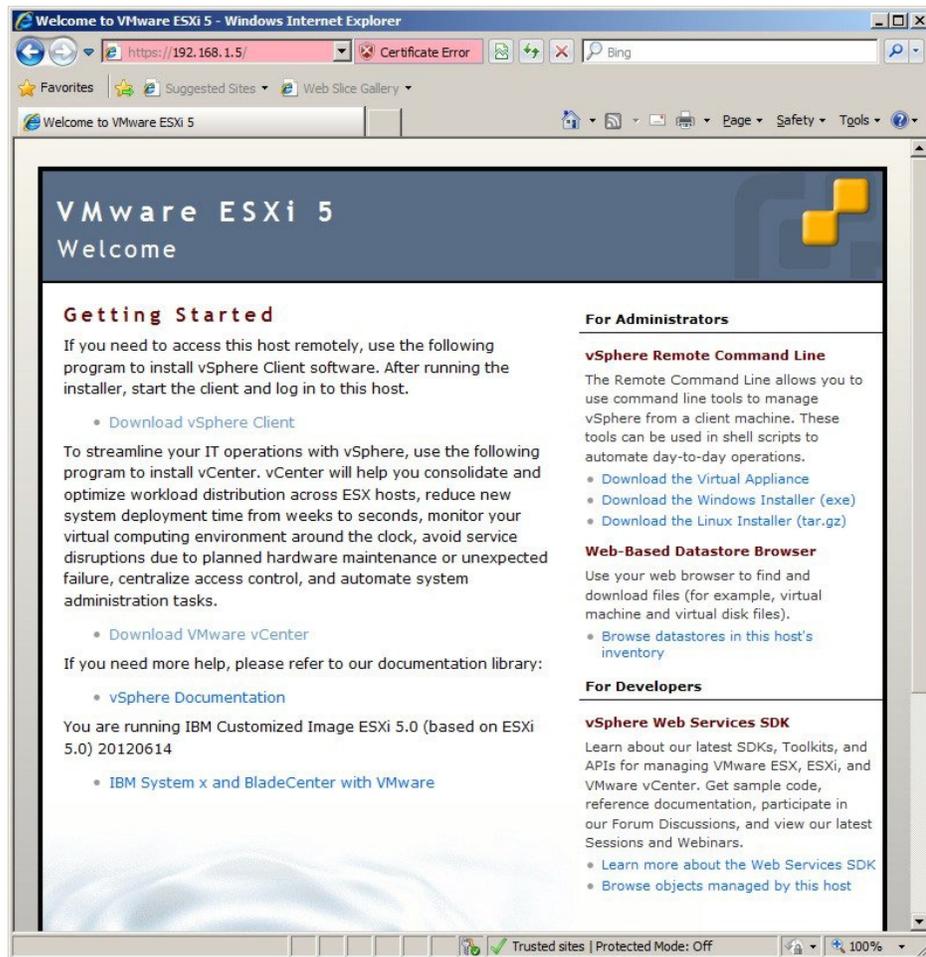
**Note:** To avoid any unexpected behavior, it is strongly recommended that you use the VMware vSphere Client that matches the version of the SAP Discovery system hardware's VMware ESXi 5 Hypervisor (see step 3 for the **Download vSphere Client** link). If you already have an appropriate version of the VMware vSphere Client installed, skip to the next section “Configuring and starting the virtual machines” on page 4.

1. Boot the SAP Discovery system hardware to the VMware ESXi 5 Hypervisor. The IP address of the VMware ESXi 5 Hypervisor is displayed on the console.

**Note:** If you have already added a host name to your domain name system (DNS), you can use the host name instead of the IP address.

2. On the Microsoft Windows system where VMware vSphere Client will be installed, open a secure web connection (HTTPS) and enter the IP address of VMware ESXi 5 Hypervisor in the browser address bar. The VMware ESXi 5 Welcome screen is displayed.
3. Click the **Download vSphere Client** link and follow the on-screen instructions to install the client.

**Note:** If a security warning window opens, click the **Ignore** button.



## Configuring and starting the virtual machines

To configure and start the virtual machines, complete the following steps.

**Note:** The illustrations in this document might differ slightly from what you see on your screen.

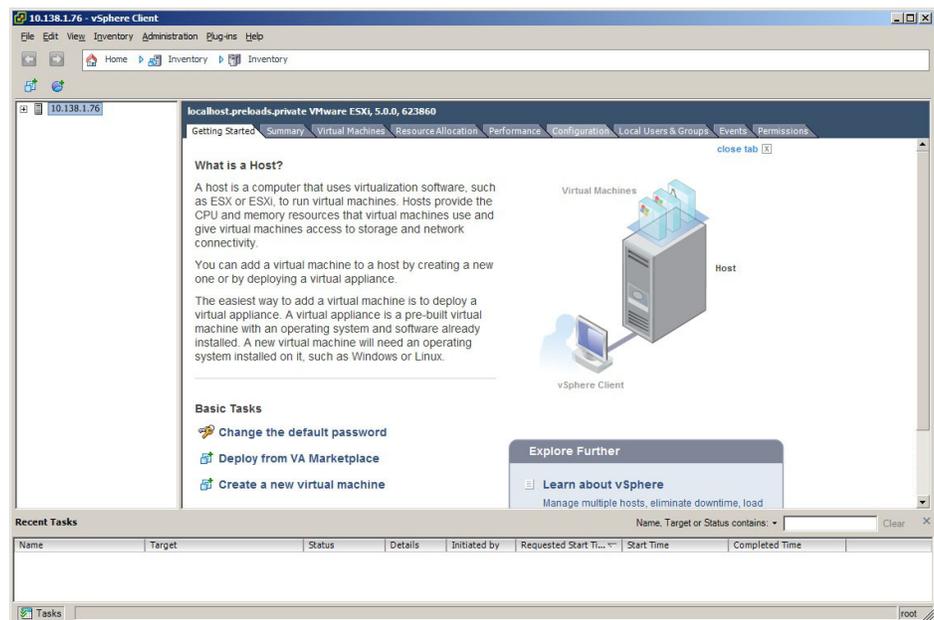
1. Go to <https://scn.sap.com/docs/DOC-29634> and click **View this Article** to download the *SAP Discovery System V5 Users and Passwords* document (PDF). The *SAP Discovery System V5 Users and Passwords* document contains all of the user names and passwords for the SAP Discovery system software.
2. Log in to the VMware vSphere Client. Type the IP address of the host system, and your user name and password (from the *SAP Discovery System V5 Users and Passwords* document), and click the **Login** button.



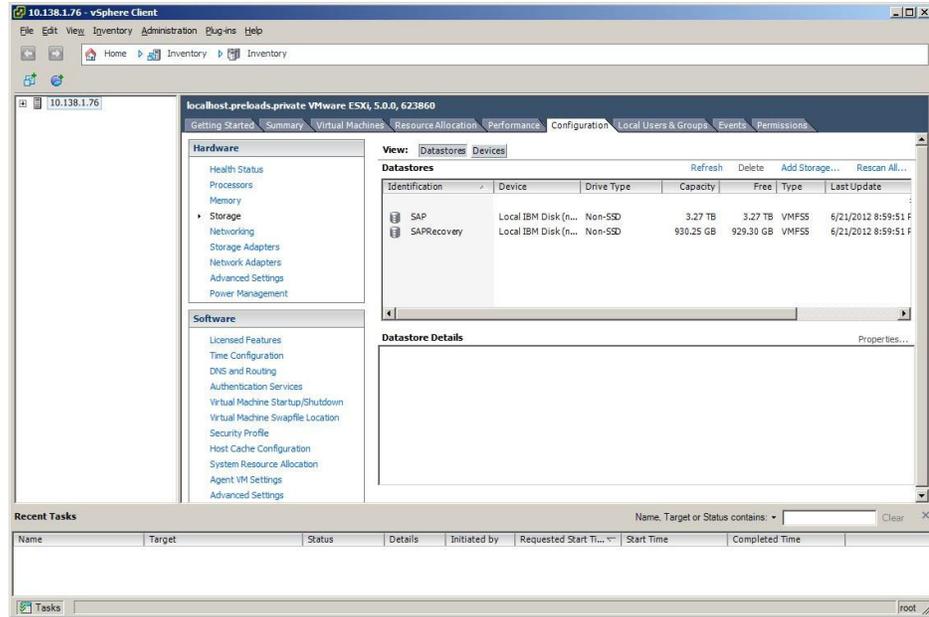
**Notes:**

- a. The default value maybe different from what SAP has provided, if it does not work, use an empty field instead. Change the value immediately after starting the Hypervisor.
- b. If a security warning window opens, ignore the warning and install the certificate. On a new server, you might also see a warning that there is not a datastore; ignore this warning too.

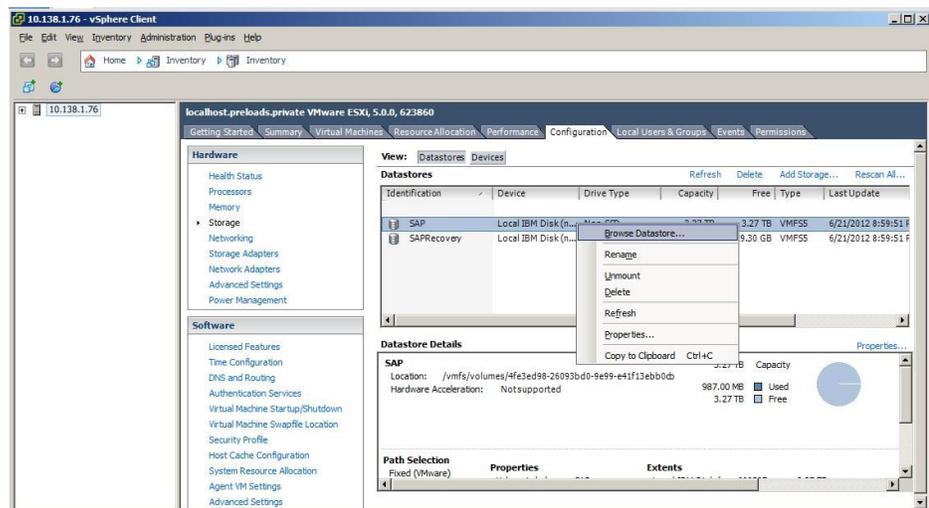
The **Getting Started** tab, similar to the following illustration, is displayed.



- 3. Click the **Configuration** tab, and then click on the **Storage** link located in the **Hardware** box on the left side of the screen. The SAP and SAPRecovery datastores are displayed.



4. Right-click the SAP datastore and select **Browse Datastore...**

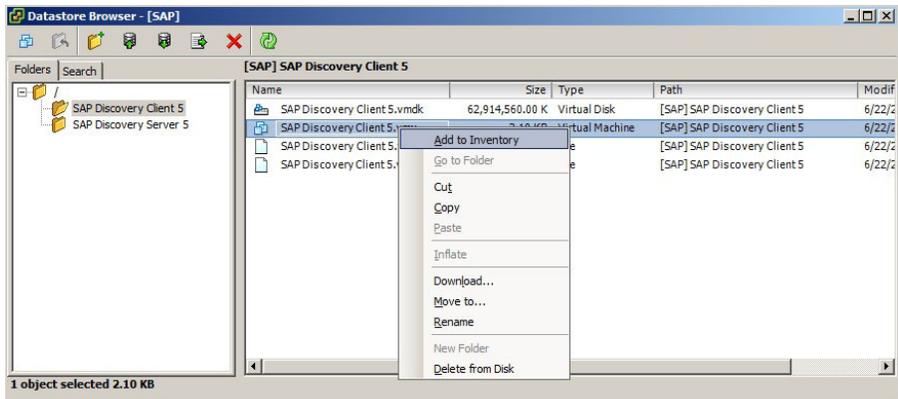


Two subfolders appear in the Datastore browser: *SAP Discovery Client 5* and *SAP Discovery Server 5*. *SAP Discovery Client 5* is the SAP Discovery system Windows client. *SAP Discovery Server 5* is the SAP Discovery system Linux server. Both are required for the SAP Discovery system appliance installation.

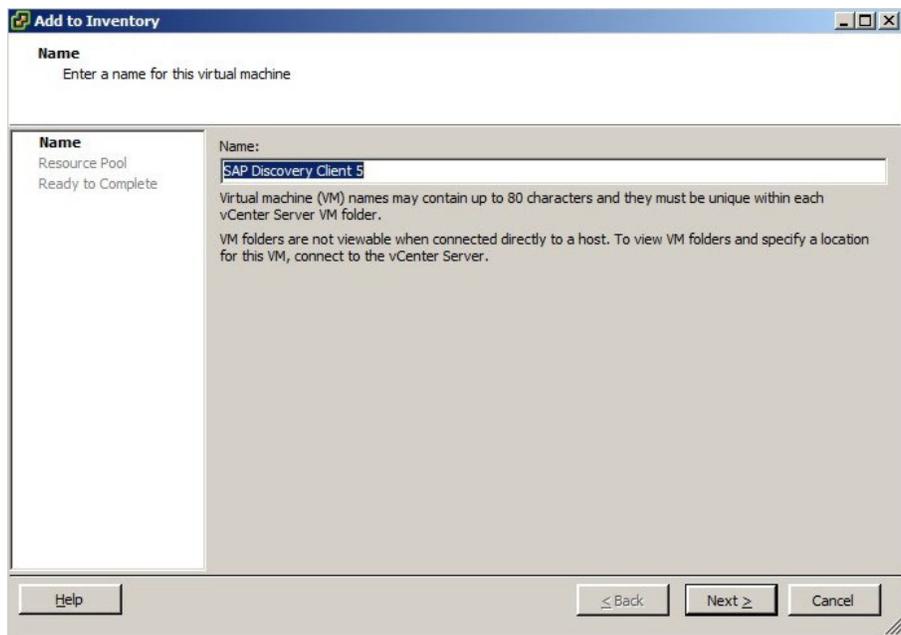
5. Add the SAP Discovery Client 5 virtual machine (the Windows client) and/or the SAP Discovery Server 5 virtual machine (the Linux server) to the Inventory as follows:

**Note:** The example in the following illustrations show the SAP Discovery Client 5 virtual machine.

a. Double-click the title **SAP Discovery Client 5**. Right-click **SAP Discovery Client 5.vmx** and select **Add to inventory**.



- b. The Add to Inventory window, similar to the following illustration, is displayed. Click **Next**.

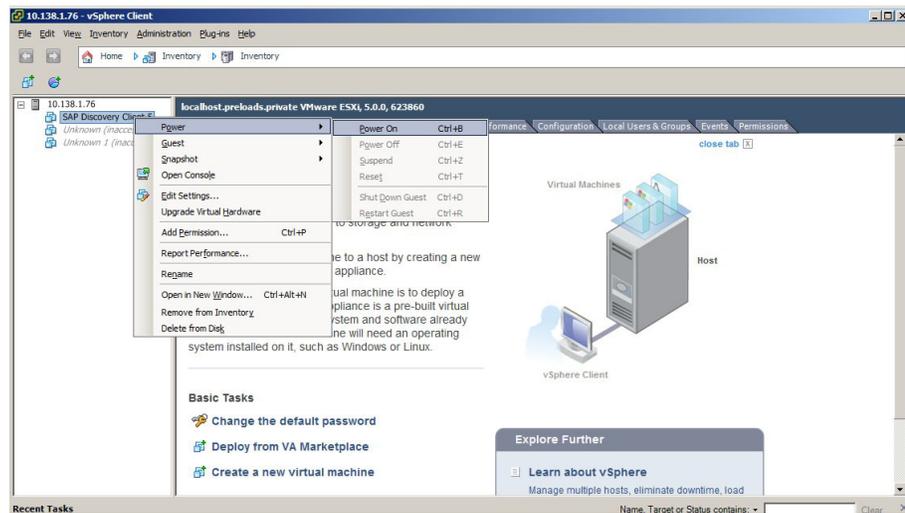


6. Highlight the ESX server IP address and click **Next**.
7. Click **Finish** to register the virtual machine and then close the Datastore browser window.

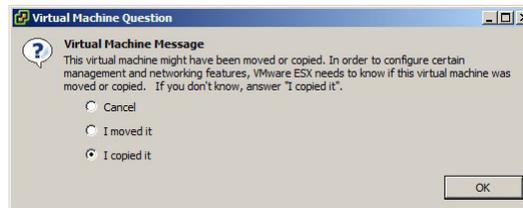
**Note:** After you complete the steps for either *SAP Discovery Client 5* or *SAP Discovery Server 5*, repeat steps 5 on page 6 through 7 for the virtual machine that you did not choose the first time (choose the corresponding subfolder and vmx).

8. Powering on the virtual machines.  
To turn on the power to the virtual machine, complete the following steps:
  - a. Click the **Getting Started** tab.
  - b. Expand the host IP address on the left side of the screen.
  - c. Right-click the name of the virtual machine (either **SAP Discovery Client 5** or **SAP Discover Server 5**), select **Power**, and then click **Power On** as shown in the following illustration.

**Note:** The example in the following illustration shows the SAP Discovery Client 5 virtual machine.

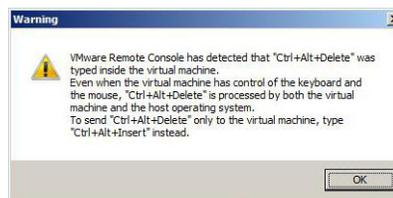


9. To view the progress, click **SAP Discovery Client 5** under the IP address on the left side, then click the **Console** tab. If the following Virtual Machine Question window opens, click the **I copied it** option button, then click **OK**.

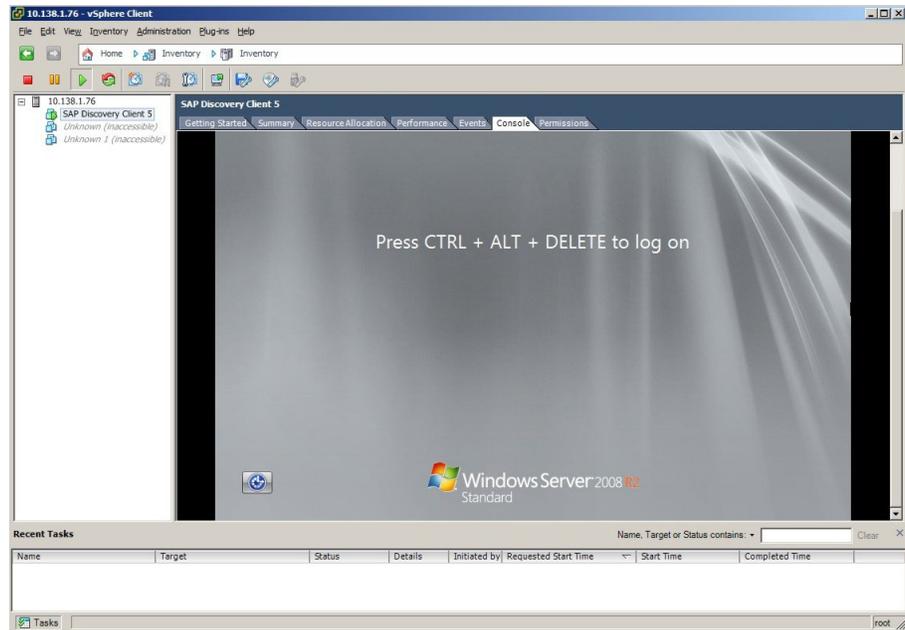


**Note:** Let the virtual machine to start completely.

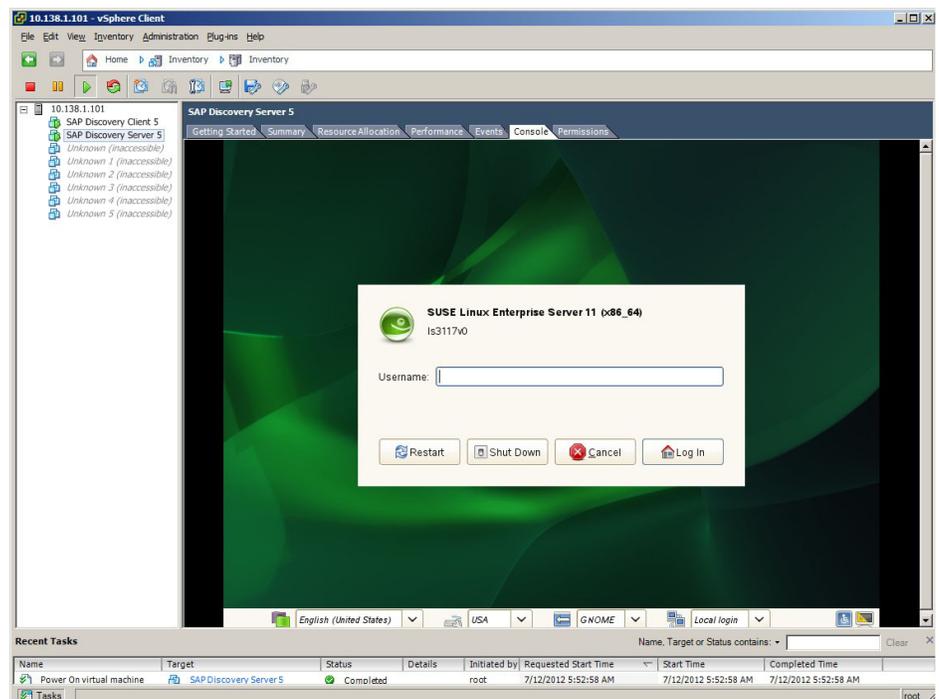
10. Respond to the first boot questions as appropriate. To establish keyboard and mouse control over the virtual machine, complete the following steps:
  - a. Press Ctrl+Alt to establish control of the keyboard and mouse inside the virtual machine.
  - b. Press Ctrl+Alt+Delete to open the login window for the client. If the following warning message opens, click **OK**.



- c. In a web browser, go to <https://scn.sap.com/docs/DOC-29634> and click **View this Article** to download the *SAP Discovery System V5 Users and Passwords* document (PDF). The *SAP Discovery System V5 Users and Passwords* document contains all of the user names and passwords for the SAP Discovery system.



- d. Log in to the client, using the applicable password from the *SAP Discovery System V5 Users and Passwords* document.
11. Repeat steps 8 on page 7 through 10 on page 8, and make sure that you select the other virtual machine that you did not select the first time you completed these steps.
12. The successfully powered on and booted SAP Discovery Server virtual machine is similar to the following illustration.



---

## Setting up the SAP Discovery system

To complete the SAP Discovery system setup and to find information about licensing and registration of the SAP Discovery system for enterprise SOA, complete the following steps.

**Important:** Make sure that you complete the following process before you attempt to use SAP Discovery system.

1. Log in to the SAP Discovery system website on SCN: <http://scn.sap.com/community/soa/discovery-system>.
2. Download the *Quick Guide* from: <https://scn.sap.com/docs/DOC-29635>.
3. Turn on the server and complete the setup process described in the *Quick Guide*.
4. Review the licensing and registration information in the *Quick Guide*.

**Important:** The SAP Discovery system is for demonstration and evaluation usage only. A separate license must be obtained from SAP in order to activate the SAP software. Contact your local SAP sales representative for additional license information.

---

## Chapter 3. Recovery and drive replacement procedures

In the event of a critical hardware problem and the recovery of the SAP Discovery system to its factory default state is required, use the following procedures to recover virtual machines and to replace a drive or multiple drives.

- “Recovering virtual machines”
- “Single drive failure” on page 14
- “Multiple drive failure” on page 16

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### Recovering virtual machines

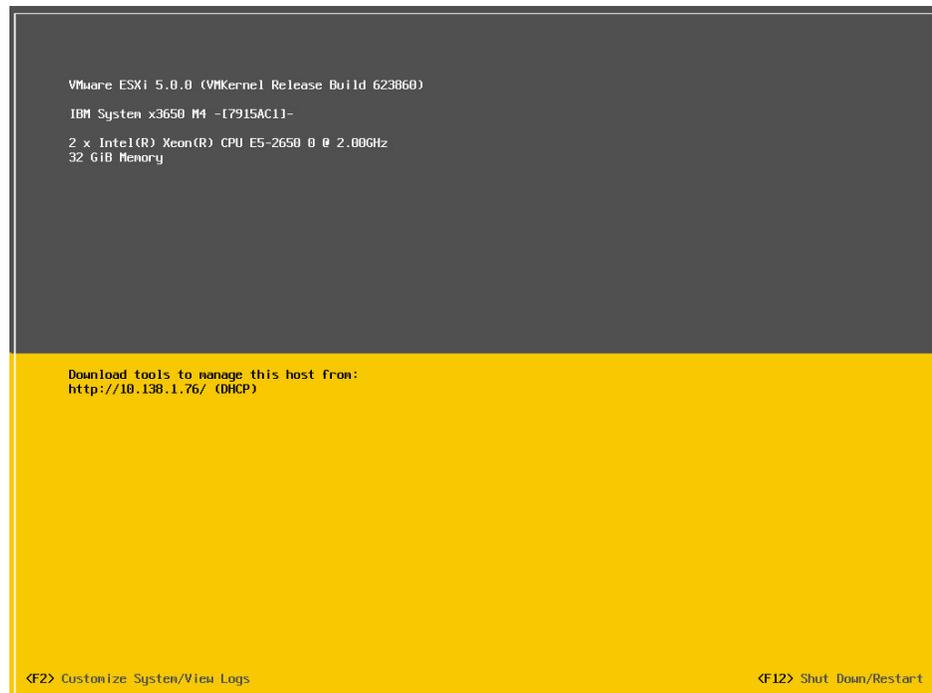
**Attention:** Before continuing, save any information related to the virtual machines that you wish to keep.

One or both the virtual machines can be restored to their initial factory installation state.

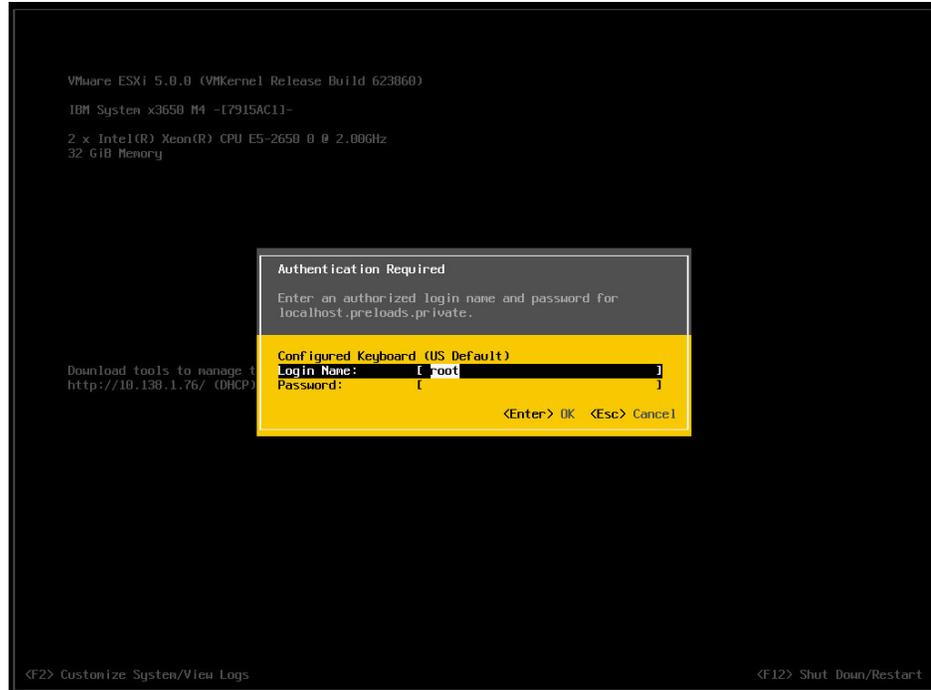
- *SAP Discovery Client 5* (SAP Discovery system Windows client)
- *SAP Discovery Server 5* (SAP Discovery system Linux server)

To recover the virtual machines, complete the following steps:

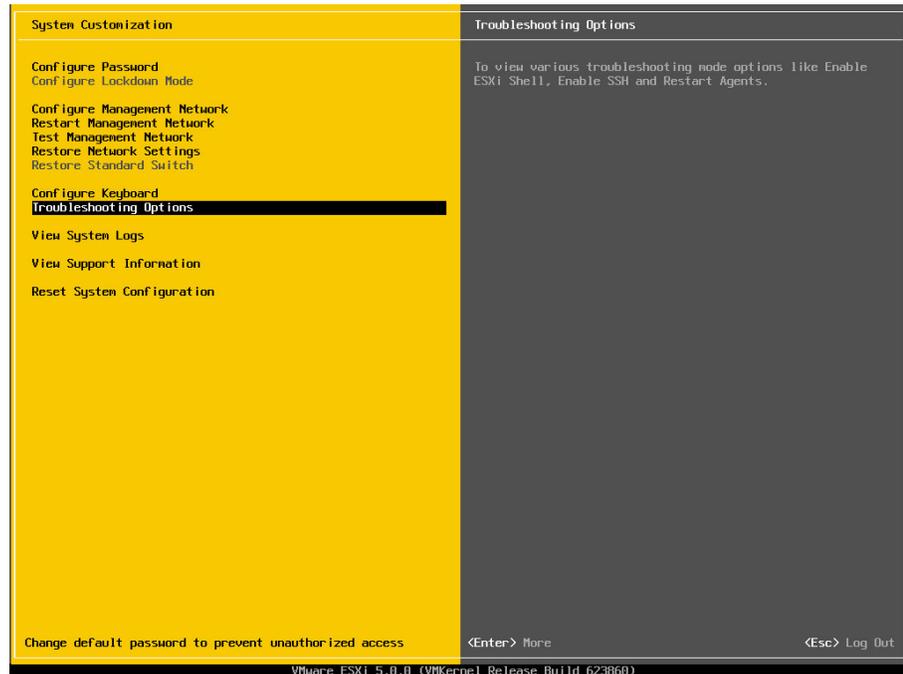
1. Boot the SAP Discovery system hardware to the VMware ESXi 5 Hypervisor. Wait until the main screen is displayed as the following illustration.



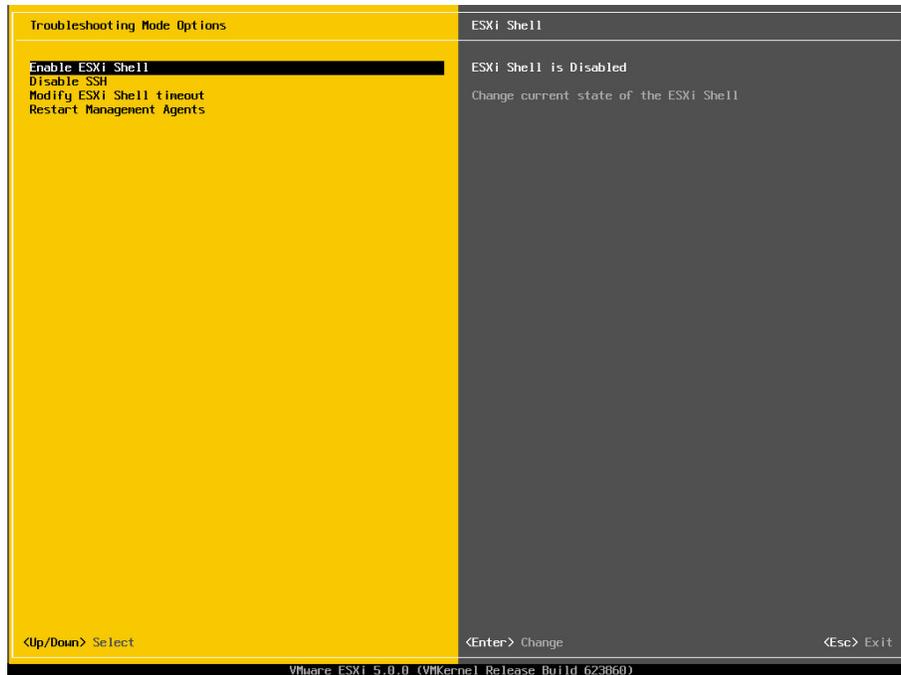
2. When the prompt Customize System/View Logs, press F2 is displayed, press F2.
3. On the Login page, type the user name and password.



4. To enable ESXi shell by completing the following steps:
  - a. Select **Troubleshooting Options**.



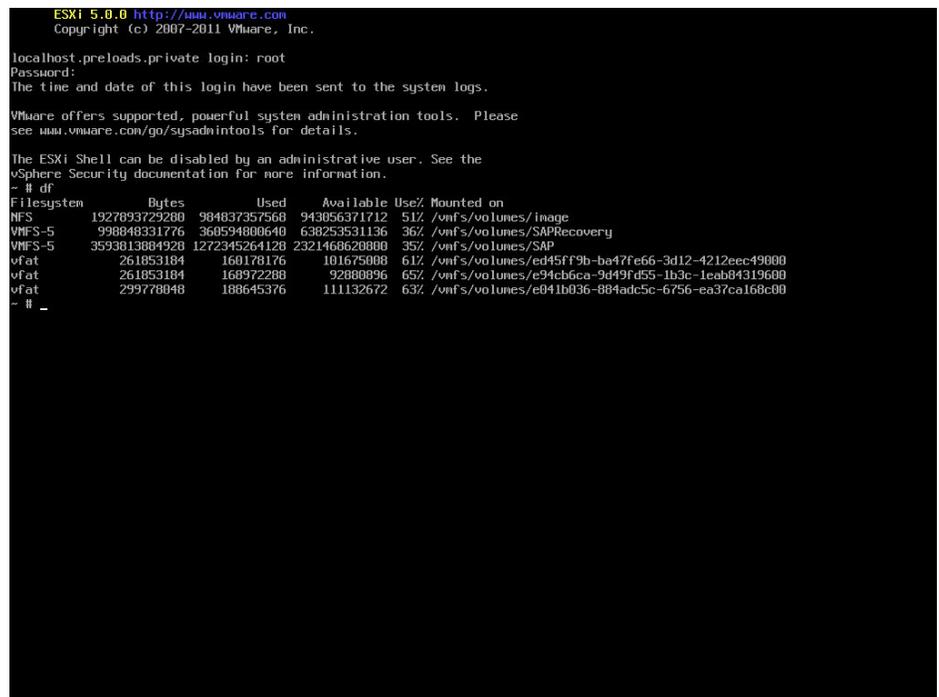
- b. Select **Enable ESXi Shell**. Make sure ESXi Shell is Enabled is displayed on the right-side pane.



- c. Press Enter to change, and then press Esc to exit.
- 5. Press Alt+F1 to enter the ESXi shell and login in.

**Note:** Press Alt+F2 will log you out of ESXi shell.

- 6. Type df. The output is similar to the following illustration.



- 7. Type cd /vmfs/volumes/SAPRecovery.
- 8. Type ls -lR. The output is similar to the following illustration.

```

- # df
Filesystem      Bytes      Used    Available Use% Mounted on
nfs              192789729280  984837357568  943056371712   51% /volumes/volumes/image
nfs-5            998848331776  366594800640  63825331136    36% /volumes/volumes/SAPRecovery
nfs-5            3533013894928  1272345264128  2321468520880    35% /volumes/volumes/SAP
vfat             261853184    168178176    181675088    64% /volumes/volumes/ed45ff9b-ba47fe66-3d12-4212ecc49000
vfat             261853184    168972288    92880896    65% /volumes/volumes/e94cb6ca-9d49fd55-1b3c-1eab84319600
vfat             299778048    188645376    111132672    63% /volumes/volumes/e041b036-884adc5c-6756-ea37ca168e00
- #
- # cd /volumes/volumes/SAPRecovery/
/volumes/volumes/4fec83db-fabae07-7866-e41f13ebb0ca #
/volumes/volumes/4fec83db-fabae07-7866-e41f13ebb0ca # ls -lR
.:
-rw-r--r-- 1 root root          277 Jun 29 14:37 CreateSAPDatastore.sh
drwxr-xr-x 1 root root          980 Jun 29 05:10 DSV5CLIENTVM
drwxr-xr-x 1 root root         1260 Jun 29 03:56 DSV5FINALEXPORT
-rw-r--r-- 1 root root          277 Jun 29 14:37 ReadMeFirst
-rw-r--r-- 1 root root          277 Jun 29 14:33 RestoreSAPDS5ClientVM.sh
-rw-r--r-- 1 root root          277 Jun 29 14:35 RestoreSAPDS5ServerVM.sh

./DSV5CLIENTVM:
-rw-r--r-- 1 root root 33691039914 Jun 29 05:10 SAP Discovery Client 5-flat.vndk.gz
-rw----- 1 root root          510 May 29 19:26 SAP Discovery Client 5.vndk
-rw-r--r-- 1 root root           0 May 29 19:26 SAP Discovery Client 5.unxd
-rwxr-xr-x 1 root root         2151 May 29 19:26 SAP Discovery Client 5.unx
-rw-r--r-- 1 root root          277 May 29 19:26 SAP Discovery Client 5.unxf

./DSV5FINALEXPORT:
-rw-r--r-- 1 root root 34152513934 Jun 29 03:56 SAP Discovery Server 5-flat.vndk.gz
-rw----- 1 root root          511 May 30 21:50 SAP Discovery Server 5.vndk
-rw-r--r-- 1 root root           0 May 30 21:50 SAP Discovery Server 5.unxd
-rwxr-xr-x 1 root root         1827 May 30 21:50 SAP Discovery Server 5.unx
-rw-r--r-- 1 root root          277 May 30 21:50 SAP Discovery Server 5.unxf
-rw-r--r-- 1 root root 291720215636 Jun 28 21:26 SAP Discovery Server 5_1-flat.vndk.gz
-rw----- 1 root root          515 May 30 21:50 SAP Discovery Server 5_1.vndk
/volumes/volumes/4fec83db-fabae07-7866-e41f13ebb0ca # _

```

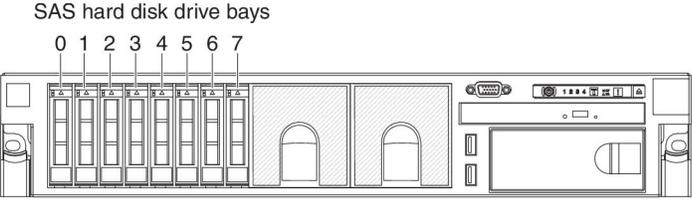
9. Take one of the following actions:
  - To recover the SAP Discovery Client 5 (SAP Discovery system Windows client), type `sh RestoreDSV5ClientVM.sh` and follow the prompts.
 

**Note:** This takes approximately 20 minutes.
  - To recover the SAP Discovery Server 5 (SAP Discovery system Linux server), type `sh RestoreDSV5ServerVM.sh` and follow the prompts.
 

**Note:** This takes approximately 4 hours due to the large size of the image.
10. After the command has completed execution, see “Configuring and starting the virtual machines” on page 4 to configure and start each of the virtual machines that was recovered.

## Single drive failure

The following diagram shows the numbered arrangement of hard drive bays for the System x3650 M4 server. Use the numbered positions as needed during the recovery processes.

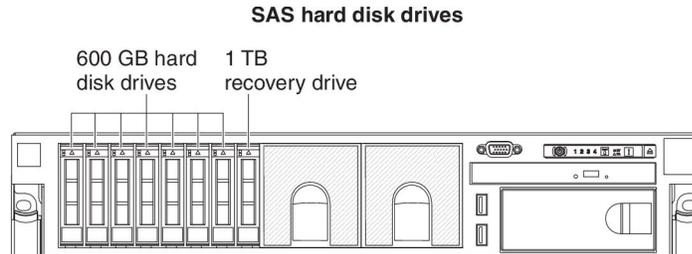


### Drive failure in drive bays 0 - 6

If you are replacing a drive in drive bay 0, 1, 2, 3, 4, 5, or 6, you must remove the defective drive and replace it with the drive you received from IBM. The RAID controller handles the removal and installation of drives. It copies all of your data to the new drive after you install it in the drive bay. Your server will remain available and operational during the drive-replacement process.

## Drive failure in drive bay 7

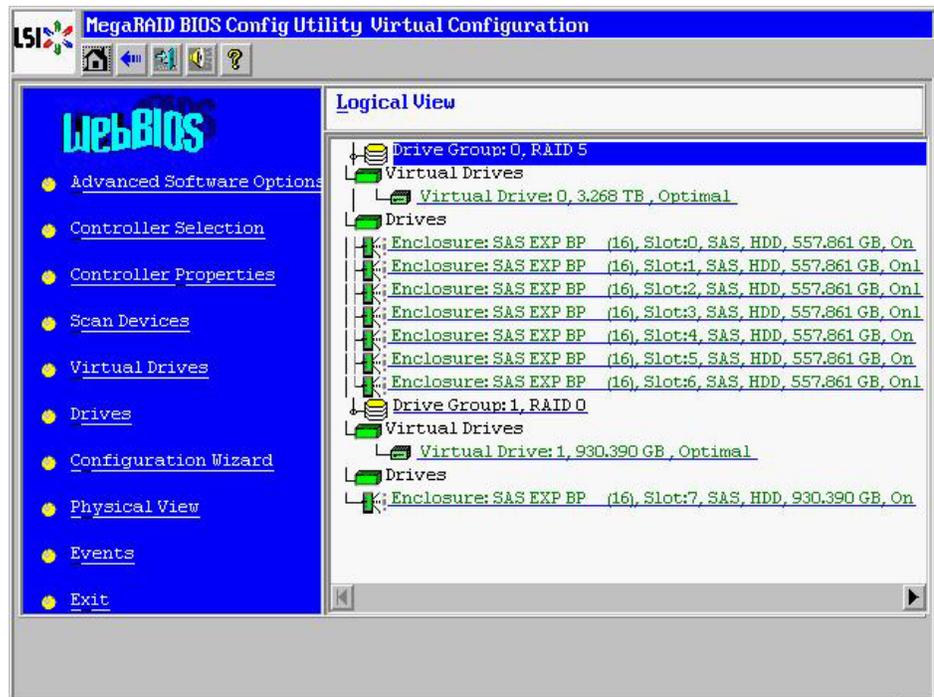
The SAP Discovery system recovery hard disk drive is located in drive bay 7, and must be replaced with a new SAP Discovery system 1 TB recovery hard disk drive. The new SAP Discovery system recovery drive must be obtained from IBM Service and Support. The recovery hard disk drive FRU part number is 90Y8866. The following diagram shows the location of the 1 TB recovery drive.



To replace the SAP Discovery system 1 TB recovery drive in drive bay 7, complete the following steps:

1. Turn off the power to the SAP Discovery system hardware.
2. Remove the failed 1 TB recovery hard disk drive from drive bay 7.
3. Install the new 1 TB recovery hard disk drive that you received from IBM in drive bay 7.
4. Turn on the power to the SAP Discovery system hardware.

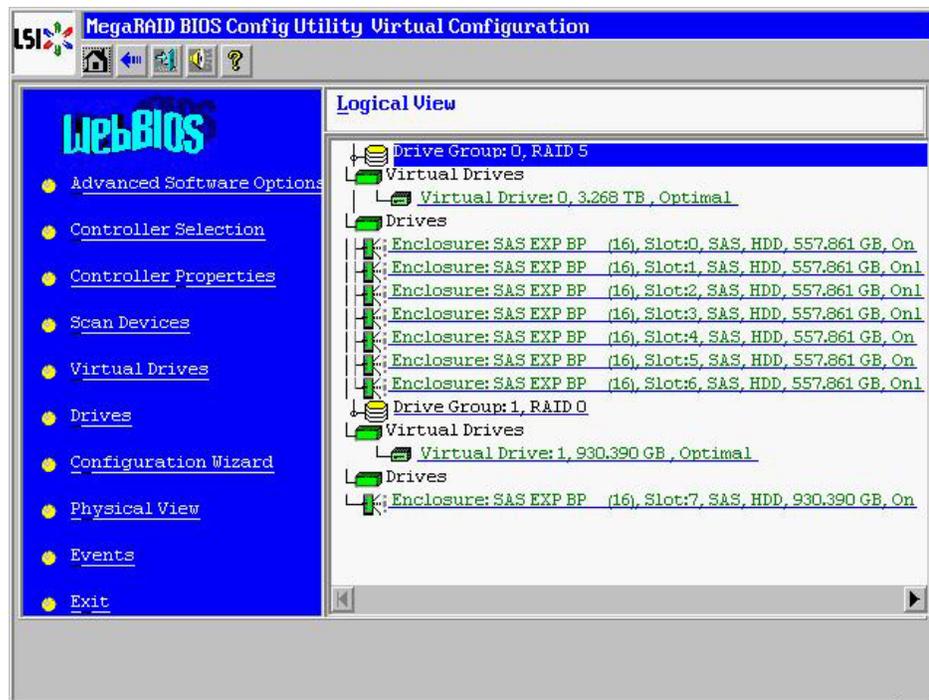
The system should automatically discover the new 1 TB recovery hard disk drive in bay 7 and import it as RAID 0. You can find the expected RAID configuration in the following illustration.



**Note:** If an automatic import did not happen as expected, complete the following steps:

1. Turn off the power to the SAP Discovery system hardware.

2. Remove the new 1 TB recovery hard disk drive that you received from IBM in drive bay 7.
3. Turn on the power to the SAP Discovery system hardware. During the boot process, the notification “The following VD’s are missing: 01” appears.
4. Press C and Y as needed to clear the failed drive information from the RAID configuration and open the RAID utility.
5. Click **Start**, then **Exit** to exit the RAID utility.
6. Turn off the power to the SAP Discovery system hardware.
7. Reinstall the new 1 TB recovery hard disk drive that you received from IBM in drive bay 7.
8. Turn on the power to the SAP Discovery system hardware.
9. During the boot process, press CTRL+H after the screen shows the copyright notice for LSI MegaRAID SAS-MFI Bios. The RAID utility opens.
10. In the Adapter Selection window, select **Adapter No. 0** and click the **Start** button. The utility displays the notification “1 Foreign Config(s) found. Want to Import?”.
11. Select **All Configurations** in the drop-down list and click **Preview**. **Drive Group0** and **Drive Group1** appear in the Virtual Drives box.
12. Select **Drive Group1** and click **Import**. The Logical View, similar to the following illustration, is displayed.



13. Exit the RAID utility and restart the SAP Discovery system hardware. The system is now ready for normal operation.

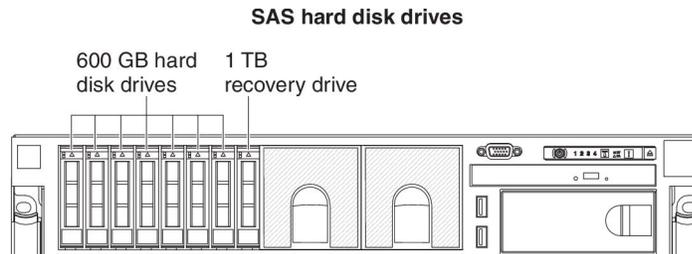
## Multiple drive failure

If more than one drive in drive bays 0-6 has failed and you cannot restore your partitions automatically by using the RAID controller, you must rebuild the RAID and recover the system from the 1 TB recovery hard disk drive located in drive bay 7. This process restores the SAP Discovery system to its initial factory installation state.

**Attention:** All personal data will be deleted during the recovery process.

The internal IBM ServeRAID controller installs and manages your hard disk drive or drives. Two arrays are necessary for the SAP Discovery system: an operating system array and a data array.

The following diagram shows the location of the 1 TB recovery drive.



If you must re-create one or both of the RAID arrays, complete the following steps.

**Important:** Turn off the power to the SAP Discovery server and remove the 1 TB recovery hard disk drive in drive bay 7. This action will preserve the drive content for later use.

1. Access the ServeRAID M5015 adapter settings in the RAID utility:
  - a. Turn on the power to the SAP Discovery system hardware.
  - b. Take one of the following actions:
    - If the notification “The following VDs are missing:” appears during the boot process, press C and Y as required to clear the virtual drive information and open the RAID utility.
    - If no notification appears, press Ctrl+H after the copyright notice for LSI MegaRAID SAS-MFI Bios appears on the screen. The RAID utility opens.
  - c. Select the **ServeRAID M5015** adapter and click **Start**.
2. Create the RAID configuration *Drive Group 0*:
  - a. Select **Configuration Wizard** on the left side of the screen, and then select **New Configuration**. When you are prompted, clear the configuration. A new window opens.
  - b. Select **Manual Configuration**, and then click **Next**. A new window opens.
  - c. In the **Drives** area of the screen, select the drives 0 to 6 and click **Add to array** to add them to *Drive Group 0*. A new window opens.
  - d. Click **DG**, and then click **Next**. A new window opens.
  - e. Click the **Add to span** button, and then click **Next**. *Drive group 0* is added to the span. A new window opens.
  - f. Make sure that RAID 5 is selected as the RAID level for *DG0*, and then click **Accept** to accept the virtual drive definition for *DG0*. A new window opens.
  - g. Click **Yes** for the setting **Write back with BBU mode**, and then click **Next**. A new window opens.
  - h. Click **Next** to view the Configuration preview screen.
  - i. Click **Accept** to finish the *Disk Group 0* configuration. A new window opens.
  - j. Save the configuration.

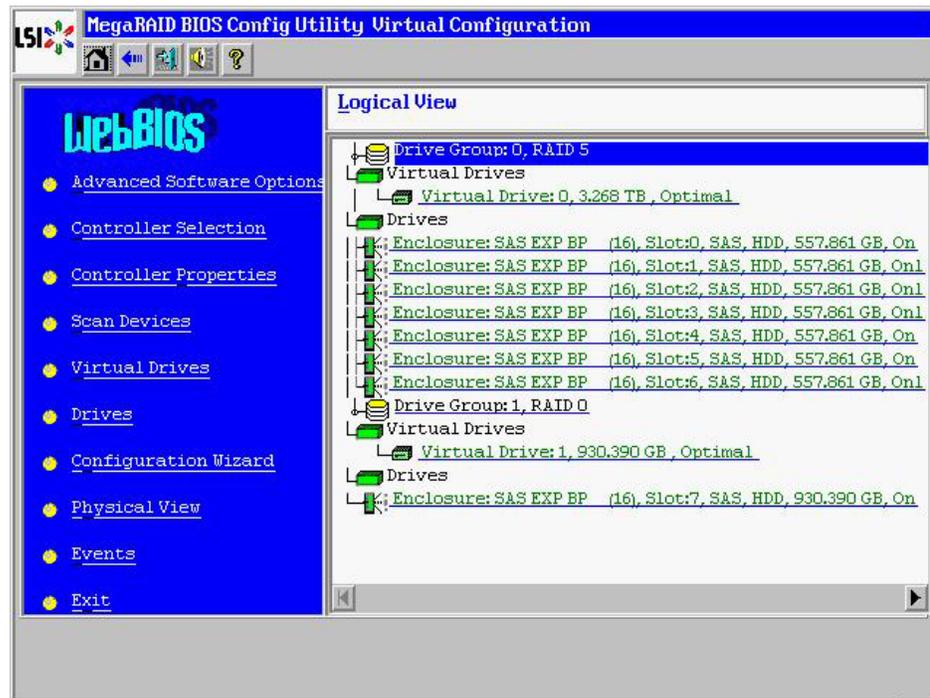
3. Initialize the RAID configuration *Drive Group 0*.

**Important:** This step might take up to four hours to complete.

- a. When you are prompted Do you want to initialize?, click **Yes**. A new window opens.

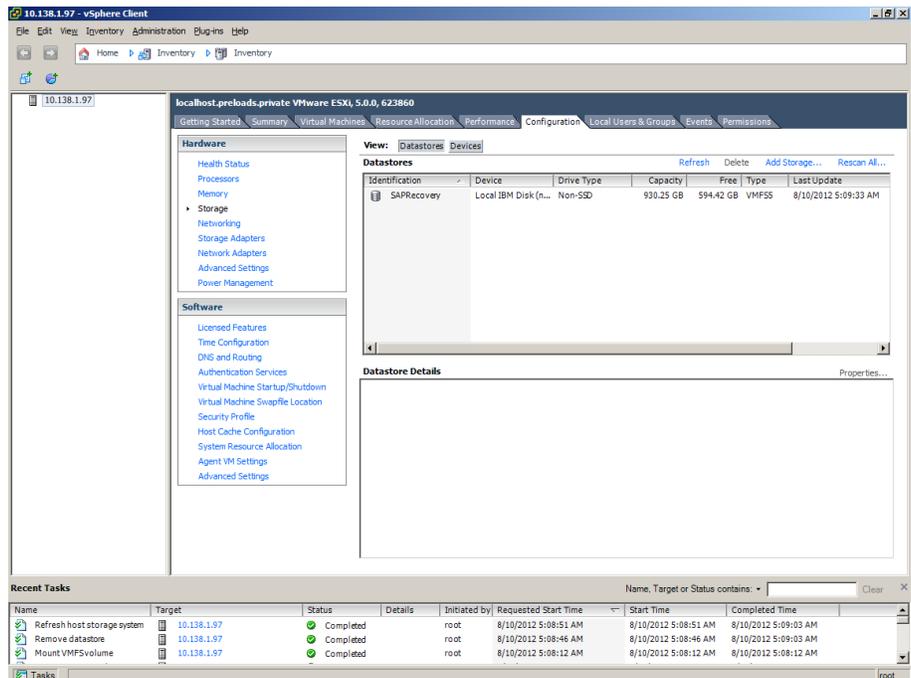
**Note:** If an error is displayed, highlight **Drive Group 0**, and then click **Virtual drives**.

- b. In the Initialize window, select **Fast initialize**. A new window opens.
  - c. When you are prompted Do you want to proceed with initialization?, click **Yes**. A new window opens.
  - d. After the initialization status changes to optimal, click **Home** to go to the main screen of the RAID utility.
  - e. Exit the RAID utility and turn off the power to the SAP Discovery system hardware.
4. Install the SAP Discovery system 1 TB recovery hard disk drive in drive bay 7.
  5. Turn on the power to the SAP Discovery system hardware.
  6. During the boot process, press CTRL+H after the screen shows the copyright notice for LSI MegaRAID SAS-MFI Bios. The RAID utility opens.
  7. In the Adapter Selection window, select **Adapter No. 0** and click the **START** button. The utility displays the notification "1 Foreign Config(s) found. Want to Import?".
  8. Select **All Configurations** in the drop-down list and click **PREVIEW**. **Drive Group0** and **Drive Group1** appear in the Virtual Drives box.
  9. Select **Drive Group1** and click **IMPORT**. The Logical View, similar to the following illustration, is displayed.

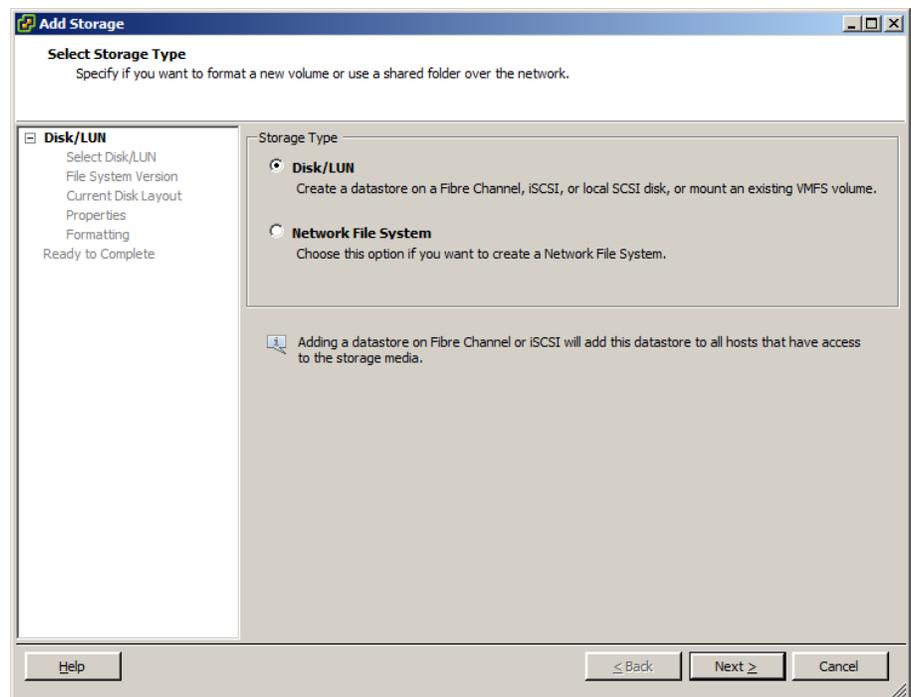


10. Exit the RAID utility, and turn off the power to the SAP Discovery system hardware.
11. Create datastores:

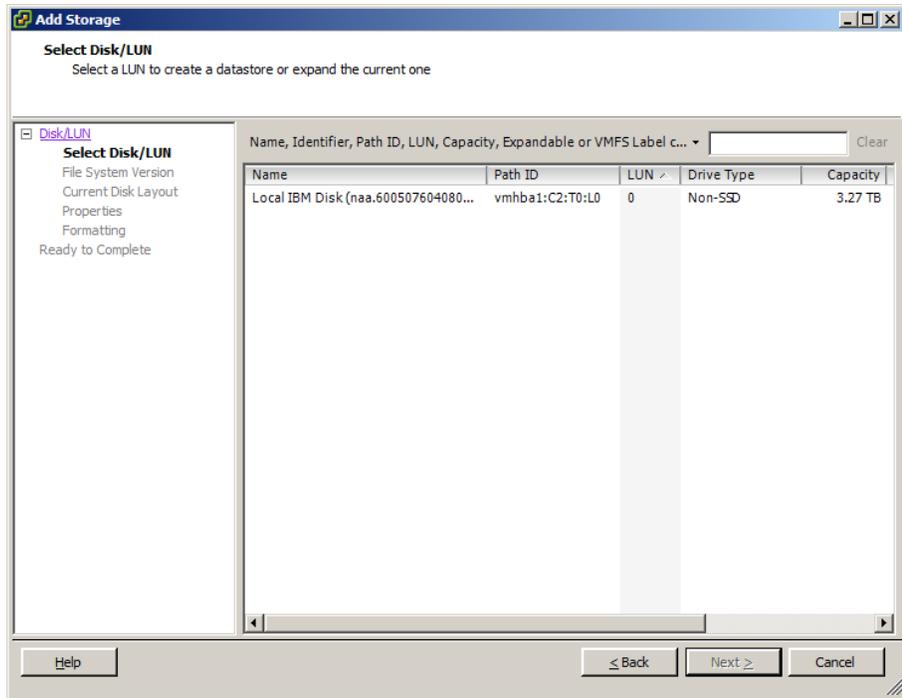
- Boot the SAP Discovery system hardware to the VMware ESXi 5 Hypervisor. Copy its IP address for use in the next step.
- On the server that has the vSphere Client application installed, start the vSphere Client application and use the IP address of the SAP Discovery system hardware when you log in.
- Select the **Configuration** tab and click **Storage** in the Hardware box. Only one datastore (SAPRecovery) is visible, similar to the following illustration.



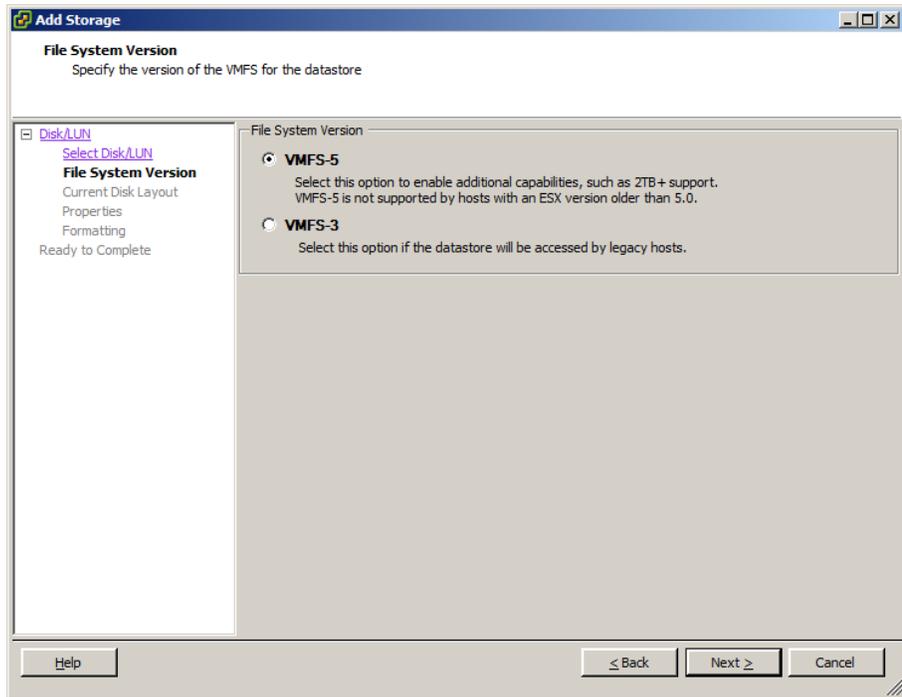
- Click **Add Storage** in the Datastores area. The Add Storage window, similar to the following illustration, is displayed.



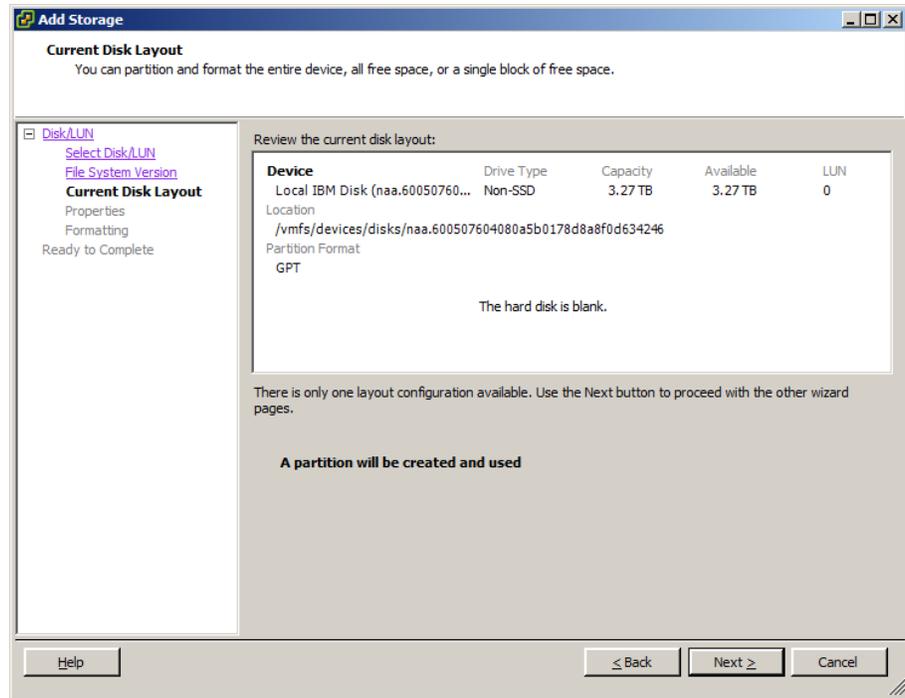
- Click the **Disk/LUN** option button, and then click **Next**.



- f. Select the 3.27 TB Disk/LUN, and then click **Next**.
- g. Make sure that VMFS-5 is selected, and then click **Next**.

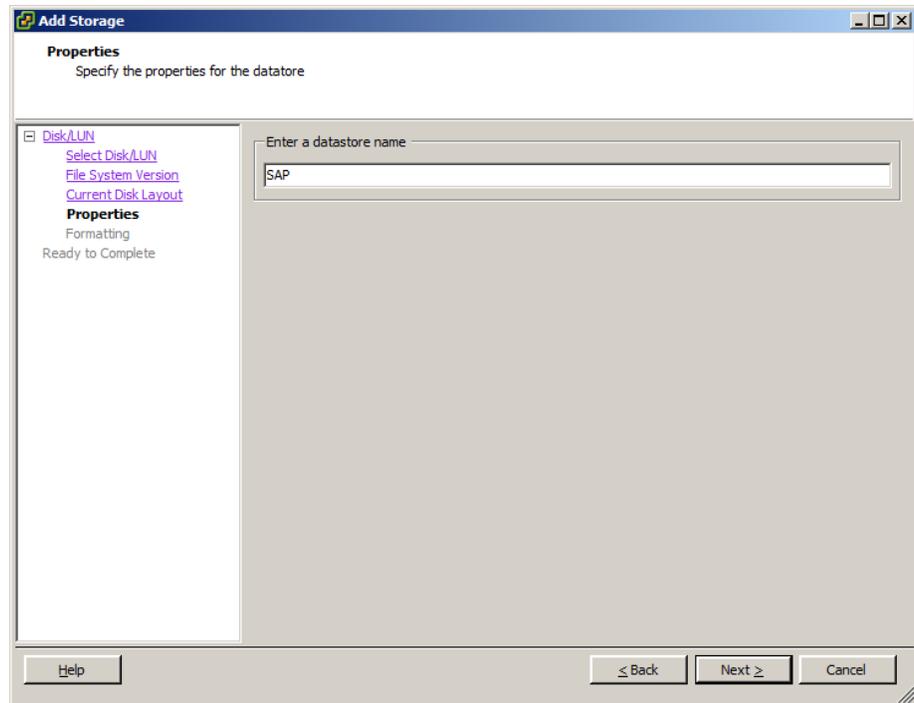


- h. Verify the details on the current disk layout pane are similar to the following illustration.

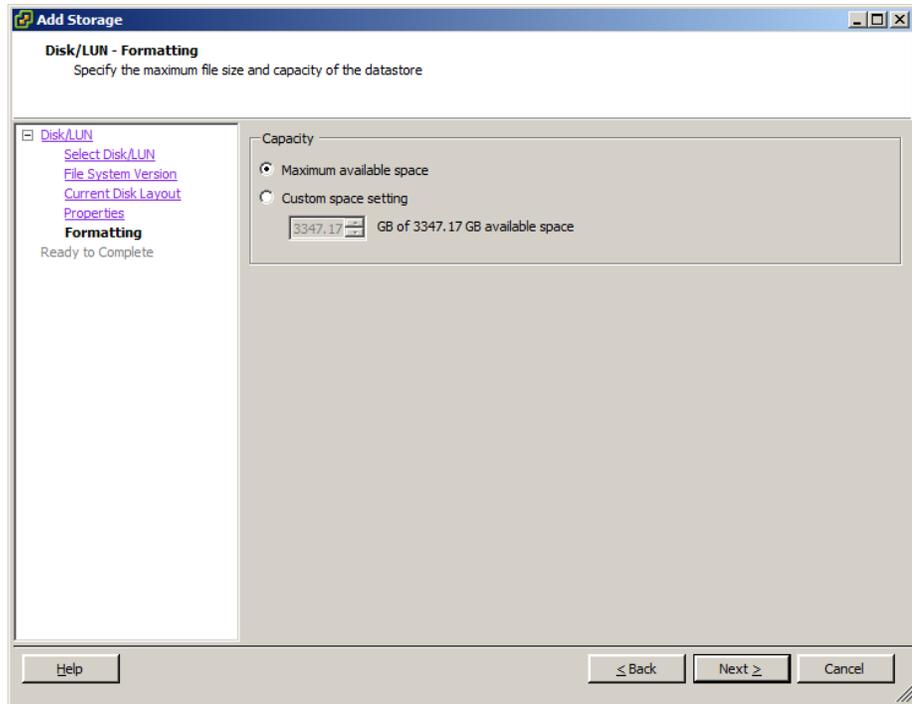


**Note:** If the Select VMFS Mount Option window opens, select **Format the disk**, and click **Next**.

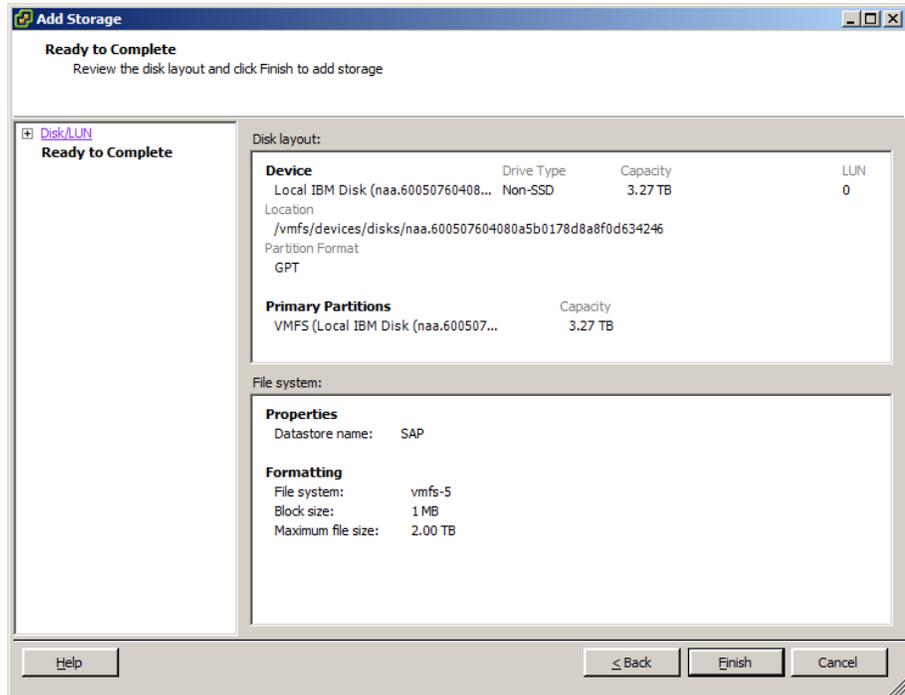
- i. Type **SAP** in the **Enter a datastore name** field and click **Next**.



- j. Select **Maximum available space**, and then click **Next**.

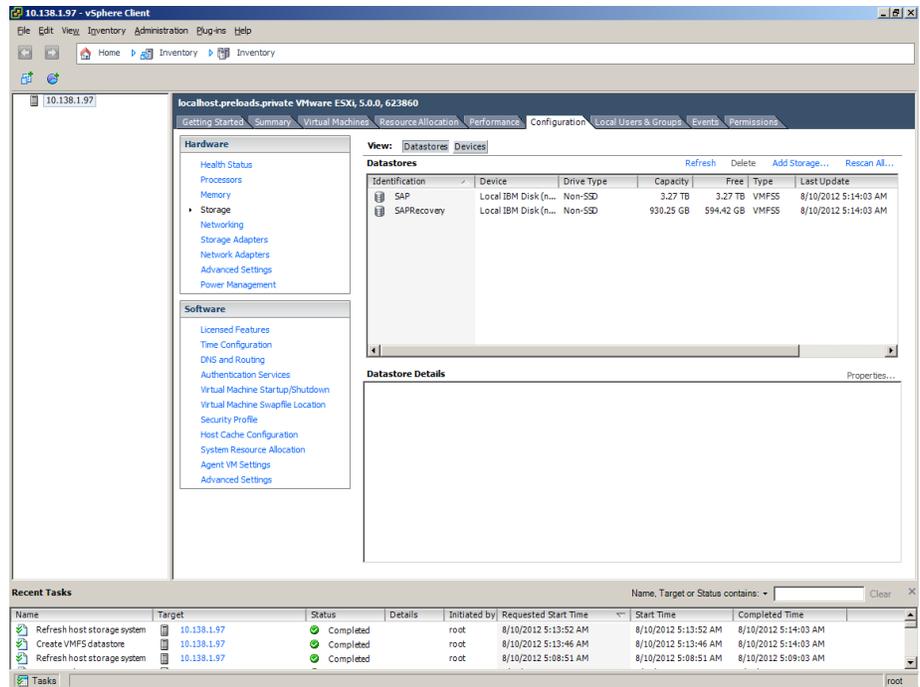


- k. The summary panes similar to the following illustration appear. Click **Finish**.



- l. The **Datastores** tab appears as the following illustration.

**Note:** You might need to click **Refresh** to see the newly-created SAP datastores.



- Recover both the virtual machines (see “Recovering virtual machines” on page 11 for more information).



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This section contains additional license information about IBM and SAP products.

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### **Microsoft Windows license information**

The SAP Discovery system ships with an entitlement for Microsoft Windows Server 2008 R2 Standard. An appropriate software shipgroup was provided with the SAP Discovery system shipment.

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### **SLES license information**

The SAP Discovery system ships with an entitlement for SUSE Linux Enterprise Server 2 Socket Standard SUSE support 1 year. An appropriate software shipgroup was provided with the SAP Discovery system shipment.



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## Appendix. Getting help and technical assistance

Use the information in this section to find additional support resources from SAP and IBM.

### SAP Discovery system support

For information about configuring your SAP Discovery system software, see the SAP website: <http://scn.sap.com/community/soa/discovery-system>. For additional SAP support, log your OSS messages on component **CA-SOA-DS**. You can also post questions and collaborate with peers in the SAP Discovery system forum on SDN: <https://forums.sdn.sap.com/forum.jspa?forumID=226>.

### IBM Systems support

For IBM in Canada or the United States, call 1-800-IBM-SERV (or 1-800-426-7378). For IBM in the European Union (EU), Asia Pacific, and Latin America countries, contact IBM in that country or visit the following IBM websites: <http://www.ibm.com/supportportal> or <http://www.ibm.com/planetwide/>.

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More information about the IBM Systems solution with SAP Discovery system can be found on the IBM website at: <http://www-03.ibm.com/systems/x/solutions/infrastructure/erpcrm/sap.html>.

### Before you call

Before you call IBM support, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system. Information about diagnostic tools is in the *Problem Determination and Service Guide* on the IBM Documentation CD that comes with your system.
- Go to the IBM support website at <http://www.ibm.com/supportportal> to check for technical information, hints, tips, and new device drivers or to submit a request for information.

### Getting help and information from the World Wide Web

On the World Wide Web, the IBM website has up-to-date information about IBM systems, optional devices, services, and support. You can find service information

for IBM systems and optional devices at <http://www.ibm.com/supportportal>.

## **Online service system (OSS)**

If you encounter problems on your SAP Discovery System, access the SAP Online Service System (SAP OSS) website to create a service request ticket using **CA-SOA-DS** as the problem component. IBM support works closely with SAP and is dedicated to supporting SAP Discovery System software and hardware issues.

All questions and requests for support should be sent to SAP via their OSS messaging system. A dedicated IBM representative is available at SAP to work on this solution. Even if it is a clear hardware problem, a SAP OSS message should be opened to provide the best direct support for this product.

When opening an SAP support message, we recommend using the following text template when it is obvious that you have a hardware problem. This will expedite all hardware related problems within the SAP support organization. Otherwise, the SAP Support Teams will gladly help you with the questions regarding the SAP Discovery System in general.

### **Text template:**

A problem was found on our IBM Systems solution for SAP Discovery System. We believe that this may be a hardware issue, but to be certain, and also to follow the procedures set out by SAP's development support, we have opened this OSS message and ask that this message be transferred to the appropriate SAP queue regarding this product and that the appropriate SAP development support team has been informed of this issue. We have collected information from SAP OSS 618104 and attached them to this note. (Further information related to this message, like IBM PMR number, can be added here for SAP.)

Regards,

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Processor speed indicates the internal clock speed of the microprocessor; other factors also affect application performance.

CD or DVD drive speed is the variable read rate. Actual speeds vary and are often less than the possible maximum.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1024 bytes, MB stands for 1,048,576 bytes, and GB stands for 1,073,741,824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1,000,000 bytes, and GB stands for 1,000,000,000 bytes. Total user-accessible capacity can vary depending on operating environments.

Maximum internal hard disk drive capacities assume the replacement of any standard hard disk drives and population of all hard disk drive bays with the largest currently supported drives that are available from IBM.

Maximum memory might require replacement of the standard memory with an optional memory module.

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Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

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## Particulate contamination

**Attention:** Airborne particulates (including metal flakes or particles) and reactive gases acting alone or in combination with other environmental factors such as humidity or temperature might pose a risk to the device that is described in this document.

Risks that are posed by the presence of excessive particulate levels or concentrations of harmful gases include damage that might cause the device to malfunction or cease functioning altogether. This specification sets forth limits for particulates and gases that are intended to avoid such damage. The limits must not be viewed or used as definitive limits, because numerous other factors, such as temperature or moisture content of the air, can influence the impact of particulates or environmental corrosives and gaseous contaminant transfer. In the absence of specific limits that are set forth in this document, you must implement practices that maintain particulate and gas levels that are consistent with the protection of human health and safety. If IBM determines that the levels of particulates or gases in your environment have caused damage to the device, IBM may condition provision of repair or replacement of devices or parts on implementation of appropriate remedial measures to mitigate such environmental contamination. Implementation of such remedial measures is a customer responsibility.

*Table 1. Limits for particulates and gases*

Contaminant	Limits
Particulate	<ul style="list-style-type: none"> <li>• The room air must be continuously filtered with 40% atmospheric dust spot efficiency (MERV 9) according to ASHRAE Standard 52.2<sup>1</sup>.</li> <li>• Air that enters a data center must be filtered to 99.97% efficiency or greater, using high-efficiency particulate air (HEPA) filters that meet MIL-STD-282.</li> <li>• The deliquescent relative humidity of the particulate contamination must be more than 60%<sup>2</sup>.</li> <li>• The room must be free of conductive contamination such as zinc whiskers.</li> </ul>
Gaseous	<ul style="list-style-type: none"> <li>• Copper: Class G1 as per ANSI/ISA 71.04-1985<sup>3</sup></li> <li>• Silver: Corrosion rate of less than 300 Å in 30 days</li> </ul>
<ol style="list-style-type: none"> <li>1. ASHRAE 52.2-2008 - Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size. Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.</li> <li>2. The deliquescent relative humidity of particulate contamination is the relative humidity at which the dust absorbs enough water to become wet and promote ionic conduction.</li> <li>3. ANSI/ISA-71.04-1985. Environmental conditions for process measurement and control systems: Airborne contaminants. Instrument Society of America, Research Triangle Park, North Carolina, U.S.A.</li> </ol>	

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## Documentation format

The publications for this product are in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties when you use the PDF files and want to request a web-based format or accessible PDF document for a publication, direct your mail to the following address:

*Information Development  
IBM Corporation  
205/A015  
3039 E. Cornwallis Road  
P.O. Box 12195  
Research Triangle Park, North Carolina 27709-2195  
U.S.A.*

In the request, be sure to include the publication part number and title.

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## Telecommunication regulatory statement

This product is not intended to be connected directly or indirectly by any means whatsoever to interfaces of public telecommunications networks, nor is it intended to be used in a public services network.

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## Electronic emission notices

When you attach a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices that are supplied with the monitor.

### Federal Communications Commission (FCC) statement

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that might cause undesired operation.

## **Industry Canada Class A emission compliance statement**

This Class A digital apparatus complies with Canadian ICES-003.

## **Avis de conformité à la réglementation d'Industrie Canada**

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## **Australia and New Zealand Class A statement**

**Attention:** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## **European Union EMC Directive conformance statement**

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a nonrecommended modification of the product, including the fitting of non-IBM option cards.

**Attention:** This is an EN 55022 Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Responsible manufacturer:

International Business Machines Corp.  
New Orchard Road  
Armonk, New York 10504  
914-499-1900

European Community contact:

IBM Deutschland GmbH  
Technical Regulations, Department M372  
IBM-Allee 1, 71139 Ehningen, Germany  
Telephone: +49 7032 15 2941  
Email: lugi@de.ibm.com

## **Germany Class A statement**

**Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit**

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:  
"Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

### **Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten**

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

### **Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A**

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:

International Business Machines Corp.  
New Orchard Road  
Armonk, New York 10504  
914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

IBM Deutschland GmbH  
Technical Regulations, Abteilung M372  
IBM-Allee 1, 71139 Ehningen, Germany  
Telephone: +49 7032 15 2941  
Email: lugi@de.ibm.com

#### **Generelle Informationen:**

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

## **Japan VCCI Class A statement**

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

## Japan Electronics and Information Technology Industries Association (JEITA) statement

高調波ガイドライン適合品

Japan Electronics and Information Technology Industries Association (JEITA)  
Confirmed Harmonics Guidelines (products less than or equal to 20 A per phase)

## Japan Electronics and Information Technology Industries Association (JEITA) statement

高調波ガイドライン準用品

Japan Electronics and Information Technology Industries Association (JEITA)  
Confirmed Harmonics Guidelines with Modifications (products greater than 20 A per phase)

## Korea Communications Commission (KCC) statement

이 기기는 업무용(A급)으로 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

This is electromagnetic wave compatibility equipment for business (Type A). Sellers and users need to pay attention to it. This is for any areas other than home.

## Russia Electromagnetic Interference (EMI) Class A statement

ВНИМАНИЕ! Настоящее изделие относится к классу А. В жилых помещениях оно может создавать радиопомехи, для снижения которых необходимы дополнительные меры

## People's Republic of China Class A electronic emission statement

声 明  
此为 A 级产品。在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

## Taiwan Class A compliance statement

警告使用者：  
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

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