



# Oracle VM Server Recovery Guide

Version 8.2



## Oracle VM Server for x86 Recovery Guide

The purpose of this document is to provide the steps necessary to perform system recovery of an **Oracle VM Server for x86** system and to define the aspects of system recovery that are and are not supported. This guide does not include all the features and options available with SBAdmin, but is intended to be used as an addendum to the ***SBAdmin User Guide*** and the ***SBAdmin Linux System Recovery Guide***.

SBAdmin provides support for **Oracle VM Server for x86** versions 2.1, 2.2 and 3.x.

### System Backup of Oracle VM Manager (version 3)

Beginning with version 3, Oracle VM Server requires a separate server outside of the server pool to run Oracle VM Manager. This system must run Oracle Linux 5.5 or greater. It is not required that this system run as a **dom0** and may be run on a physical system or in a virtual environment. Performing system recovery of a physical or virtual machine is detailed in the ***SBAdmin Linux Recovery Guide***.

Performing a system backup of the Oracle VM Manager is done much in the same manner as other Linux systems. Refer to the ***SBAdmin User Guide*** for additional details. However, the following considerations deserve mention because they are specific to Oracle VM Manager.

#### Understanding Oracle VM Manager

The Oracle VM Manager software consists of an Oracle Database and other frameworks provided by Oracle. Depending on your environment the Oracle VM Manager Database may be stored locally on the system running Oracle VM Manager or on a remote system. If the database is stored locally you may perform a full system backup of the Oracle VM Manager that will include this database. However, it is good practice to shutdown the database or use the SBAdmin ***snapshot backup feature*** on the filesystem containing the database. If this database is on a remote system, or backed up through other means these steps may not be necessary. The following command is used to stop the Oracle VM Manager service.

```
# /sbin/service ovmm stop
```

### System Backup of Oracle VM Server (dom0)

Oracle VM Server for x86 is based on Xen virtualization technology. Therefore, you will see the server referred to as **dom0** in this and other documents. The virtualized guest machines that run on the server are referred to as **domU** systems. Performing system recovery of a domU guest machine is detailed in the ***SBAdmin Xen Recovery Guide***.

Performing a system backup of the Oracle VM Server (dom0) is done much in the same manner as any other Linux system. Refer to the ***SBAdmin User Guide*** for additional details. However, the following considerations deserve mention because they are specific to dom0 systems:

## Including domU Systems in dom0 Full System Backup

You may perform a full system backup of the Oracle VM Server (dom0) that will include all virtualized (domU) systems. However, it is good practice to either shutdown the domU systems or use the SBAdmin *snapshot backup feature* on the filesystems that store the domU image files. This will ensure the domU systems are in a stable state at the time of the backup.

To include domU systems in a system backup, you must understand how the systems are configured and stored on dom0. If the domU is stored within a file on dom0 then you must only assure that the filesystem and file are not excluded from the backup. If the domU is stored in a raw partition or raw logical volume on dom0, then you must ensure that the appropriate raw device type is included in the backup. The option to include raw partitions and/or logical volumes is found in the backup profile. Note that the default is NOT to include raw data in a full system backup.

## Determining Hypervisor File Used by dom0 (multiboot file)

The SBAdmin process to create a system backup of dom0 requires knowing the *Xen hypervisor file* dom0 is running under. You may also see the Xen hypervisor file referred to as the *multiboot file*. Under most circumstances SBAdmin will be able to determine the booted hypervisor file. In the case that SBAdmin is unable to determine which hypervisor was used at boot time, it will be required that the user manually specify the file. Note that this file must also be updated if the hypervisor is changed with system updates.

To manually determine the hypervisor that was used to boot dom0, it will be necessary to know which GRUB entry was chosen at boot time. You will need to determine the stanza found in the file */boot/grub/menu.lst* that was used to boot the system. Within the stanza there will be a line similar to the following which identifies the Xen hypervisor file:

```
kernel      /boot/xen-3.0-i386.gz
```

To specify the hypervisor to SBAdmin, create the file */storix/config/multibootfile* (assuming */storix* is your Storix data directory). Within this file, specify the path to the Xen hypervisor. In this case it would be as follows.

```
/boot/xen-3.0-i386.gz
```

You may now create a system backup.

## Understanding Storage Repositories

An Oracle VM storage repository is a filesystem (typically ocfs2 or NFS) where resources used by the server will be found. These resources are primarily guest virtual machines, virtual machine templates, and shared virtual disks. Typically, the server will become part of a server pool and the resources would therefore be available to all servers in the server pool. Note that server pools are managed by the Oracle VM Manager, but the repository storage configuration is managed by the individual server.

In most cases, the SBAdmin system recovery process will migrate configurations related to storage and storage devices. However, Oracle VM storage repositories are the exception in that steps will need to be performed by the user in order for the repositories to become available following a recovery. Those steps will be detailed later, but at the time of the backup you should understand and retain how the repositories are configured on the server. Most important, you will want to know which repository UUID is the root storage repository.

### Oracle VM Server for x86 version 2.1

The root storage repository will be the device mounted on */OVS* on the server. All extended storage repositories will be mounted as */OVS/UUID* and defined in */etc/ovs/repositories*.

### Oracle VM Server for x86 version 2.2

You may list all configured repositories on the server using the following command:

```
/opt/ovs-agent-latest/utils/repos.py -l
```

The command will produce output similar to the following:

```
[ * ] 450c66f5-6e10-4ca8-b086-c1413236f1f2 => /dev/sda3
[   ] c0e18fd7-c162-4183-836b-c883f9b1b41c => mickey:/ovm
```

The output indicates that there are 2 repositories configured on the server and the active root storage repository is identified by the asterisk (\*).

Regardless of the version of Oracle VM Server being used, you will see that the repository UUID is linked to a device or NFS mount point on the server. Given that you are likely to be performing system recovery to different disks, this link will be broken and will require further attention before it is usable. Those steps are described below.

## System Recovery of Oracle VM Server (dom0)

The steps to perform system recovery of an Oracle VM Server (dom0) using SBAdmin are very similar to the steps for any other Linux system. Refer to the *SBAdmin Linux System Recovery Guide* for additional details. However, the following considerations deserve mention because they are specific to Oracle VM Server and dom0 systems:

### Creating Boot Media

In order to perform system recovery of an Oracle VM Server (dom0), you will need a SBAdmin system backup (discussed above) and SBAdmin boot media. The boot media is used to provide the system you wish to recover with an environment and interface to perform the recovery. Boot media types supported for performing recovery of dom0 are **CDROM** and **hard disk**. Performing network boot (PXE) of a dom0 is not supported.

For more information on creating SBAdmin boot media please refer to the *SBAdmin Linux System Recovery Guide*.

### Migrating Storage Repositories (Version 2)

Assuming you are not performing recovery to the same disks that were used at the time of the backup, the storage repositories on the server may require additional maintenance after the system first boots following the system recovery. This is because the device names used by the repositories may have changed or the UDEV UUID linked to the device is not the same as found in the ovs-agent database.

The first step is to reconfigure the repositories on the server:

### Oracle VM Server for x86 version 2.1

You should examine the */etc/ovs/repositories* file on the server and verify that the UUID is referring to the correct device name.

## Oracle VM Server for x86 version 2.2

List the repositories using the following command:

```
/opt/ovs-agent-latest/utils/repos.py -l
```

You may see output similar to the following:

```
[ * ] 450c66f5-6e10-4ca8-b086-c1413236f1f2 => ERROR  
  
[   ] c0e18fd7-c162-4183-836b-c883f9b1b41c => mickey:/ovm
```

The output indicates that the root storage repository is not configured properly. After inspecting the log files in */var/log/ovs-agent*, you will find that the device or UDEV UUID that the device links to does exist. Typically, this is because the device name changed or the UDEV UUID changed.

To reconfigure the repositories you should re-add each device as a repository and specify which UUID is the root storage repository. Note that the UUID for each repository will be the same as at the time of the backup because the UUID is stored in a file in the repository filesystem and was restored as part of the recovery process.

In our example, the repository which was configured on device */dev/sda3* at the time of the backup was replaced with device */dev/hda3* during the recovery. Therefore, we need to redefine the repository with the proper device name and specify it as the root storage repository. We will also redefine the NFS-based repository:

```
/opt/ovs-agent-latest/utils/repos.py -n /dev/hda3  
  
/opt/ovs-agent-latest/utils/repos.py -r 450c66f5-6e10-4ca8-b086-1413236f1f2  
  
/opt/ovs-agent-latest/utils/repos.py -n mickey:/ovm
```

The next step, regardless of the version of Oracle VM Server in use, is to restore the server pool configuration from the Oracle VM Manager. This can be accomplished through the Oracle VM Manager Web Interface by selecting the **Server Pools** tab, selecting the appropriate **Server Pool Name**, and selecting **Restore**. Note that when restoring a server pool, all the data on the server pool master will be deleted and synchronized with the latest information found in the database on the Oracle VM Manager.

After the server pool restore completes, you should have access to the repositories and resources on the Oracle VM Server you just recovered.

## Migrating Storage Repositories (version 3)

With Oracle VM Server 3 migrating the service repositories after recovery is typically not necessary. However the following considerations are specific to version 3.

### Oracle VM Server SMBIOS UUID

Upon recovery of an Oracle VM Server you may see the following error in the Oracle VM Manager.

```
"The manager already has a server SERVERNAME, at this IP address,  
with SMBIOS UUID: xx:xx:...."
```

To resolve this error, it is necessary to either remove the server and re-add it through the Oracle VM Manager interface, or update the “fakeuuid” field in the /etc/ovs-agent/agent.ini file with the original uuid in the message.

### **Oracle VM Server Memory**

Upon recovery of an Oracle VM Server the Oracle VM Management interface may report that the server has no free memory. This may be due to the boot parameters in the newly created grub.conf. By default SBAAdmin makes no assumptions that the recovered system is going to the same hardware, so the following boot parameter is not retained. dom0\_mem=XXXM where XXX is the amount of memory to be assigned to dom0. This option may be added during recovery as a kernel command line option, for further information please reference the ***SBAAdmin Linux System Recovery Guide***.