



## Backup and Restore System

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### Disaster Backup and Recovery

To minimize the effects of a disaster, you must create a disaster recovery plan to minimize downtime and data loss. You can achieve this by using a VMware-supported disaster backup and recovery solution or you can export the OVA files as described in this section.

The following provides an overview of the steps required to back up and recover one, two, or all three servers in your cluster by exporting the OVA files:

- 1 Record the media access control (MAC) address of each virtual machine in the cluster. Make sure that you save the addresses in both an on-site and off-site location.
- 2 Back up each virtual machine in the cluster by exporting its OVA. Make sure that you store the exported OVAs in an off-site location.
- 3 If a disaster occurs, restore one, two, or all three virtual machines that you have lost by deploying the exported OVAs.
- 4 Before you turn on each restored virtual machine, update its MAC address.

### Save the MAC Address of Each Virtual Machine

As part of your disaster backup and recovery plan, make sure that you record the MAC address of each virtual machine in the cluster. When you restore a backed up OVA, you must update the MAC address before you turn on the machine.

### Procedure

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- Step 1** Open vSphere Client.
  - Step 2** Right-click the virtual machine and click **Edit Settings**.
  - Step 3** On the **Hardware** tab, select **Network adapter 1** or the equivalent.
  - Step 4** Record the value that is in the **MAC Address** field.
  - Step 5** Save the address in both an on-site and off-site location.
  - Step 6** Click **Cancel**.
  - Step 7** Repeat Steps 2 through 6 for each virtual machine in the cluster.
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## Export a Virtual Machine to an OVA

Make sure that you are prepared to recover from a disaster. On a regular basis, back up each virtual machine in the cluster by exporting its OVA.

### Procedure

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- Step 1** Open vSphere Client.
  - Step 2** Turn off the virtual machine:
    - a) In the virtual machines and templates inventory tree, right-click the virtual machine.
    - b) Choose **Power > Power Off**.
  - Step 3** Make sure that the virtual machine is selected and choose **File > Export > Export OVF Template**.
  - Step 4** Enter a meaningful name for the file.
  - Step 5** Choose a directory in which to save the file.
  - Step 6** From the **Format** drop-down list, select **Single file (OVA)**.
  - Step 7** Enter a meaningful description for the file.  
Add a date, version, and reason for export to help you determine which file to restore later.
  - Step 8** Click **OK**.
  - Step 9** Repeat Steps 2 through 8 for each virtual machine in the cluster.
  - Step 10** Store the OVAs in an off-site location.
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## Restore a Backed Up OVA After a Disaster

### Procedure

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- Step 1** In vSphere Client, verify that the virtual machine involved in the disaster does not appear in the virtual machines and templates inventory tree.
- Step 2** If the virtual machine appears in the virtual machines and templates inventory tree, turn off and delete this virtual machine:
- Right-click the virtual machine.
  - Choose **Power > Power Off**.
  - Right-click the virtual machine and click **Delete from Disk**.
- Step 3** In the virtual machines and templates inventory tree, select the location where you want to deploy the backed up OVA.
- Step 4** Choose **File > Deploy OVF Template**.
- Step 5** In the **Source** screen, browse to the location of the OVA, and then click **Next**.
- Step 6** Verify the details in the **OVF Template Details** screen, and then click **Next**.
- Step 7** In the **Name and Location** screen, enter a name for the template, select its location, and then click **Next**.
- Step 8** In the **Host / Cluster** screen, select where you want to run the template, and then click **Next**.
- Step 9** In the **Storage** screen, select where you want to store the virtual machine files, and then click **Next**.
- Step 10** In the **Disk Format** screen, select the format in which you want to store the virtual disks, and then click **Next**.
- Step 11** In the **Networking Mapping** screen, select the appropriate Destination Networks for OVA deployment, and then click **Next**.
- Step 12** In the **Properties** screen, enter the properties that are appropriate for your network, and then click **Next**.
- Step 13** On the **Ready to Complete** screen, make sure that **Power on after deployment** check box is unchecked.
- Important** Before you turn on the virtual machine, you must update its MAC address.
- Step 14** Click **Finish**.
- Step 15** Repeat Steps 1 through 14 for each virtual machine in the cluster that you need to restore.
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### Related Topics

[Update the MAC Address of Each Virtual Machine, on page 3](#)

## Update the MAC Address of Each Virtual Machine

After you restore a backed up OVA, you must update the MAC address before you turn on the virtual machine.

### Procedure

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- Step 1** Open vSphere Client.
  - Step 2** Right-click the restored virtual machine and click **Edit Settings**.
  - Step 3** On the **Hardware** tab, select **Network adapter 1** or the equivalent.
  - Step 4** Under the **MAC Address** field, select **Manual**.
  - Step 5** In the **MAC Address** field, enter the MAC address of the virtual machine that you recorded as part of your disaster backup and recovery plan.
  - Step 6** Click **OK**.
  - Step 7** Restart the virtual machine:
    - a) In the virtual machines and templates inventory tree, right-click the virtual machine.
    - b) Choose **Power > Restart Guest**.
  - Step 8** Repeat Steps 2 through 7 for each virtual machine in the cluster that you need to restore.
  - Step 9** If you restored only one or two servers in the cluster, you must restart Tomcat on the server that was always up and running:
 

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service tomcat-as-standalone.sh restart
```
  - Step 10** If you restored all three servers in the cluster, after each of the restored virtual machines have been restarted, restart all three virtual machines in the cluster.
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## Short-Term Backup and Recovery

### Back Up Data Short-Term

We recommend that you regularly back up your data by taking snapshots. These short-term backups allow you to recover data from an earlier time.

A backup captures the entire state of the virtual machine at the time you create the backup. You can back up a virtual machine when the machine is powered on, powered off, or suspended.




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**Important** Make sure that you back up your server cluster before you upgrade.

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### Procedure

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- Step 1** Open vSphere Client.
- Step 2** In the virtual machines and templates inventory tree, right-click the virtual machine, and then choose **Snapshot > Take Snapshot**.
- Step 3** Type a meaningful name for the snapshot.
- Step 4** Type a meaningful description for the snapshot.

**Important** Adding a date and time or a description can help you determine which snapshot to restore.

**Step 5** Select whether the snapshot includes the virtual machine's memory. If the snapshot includes the memory state, the virtual machine will be in the same power state as when you created the snapshot:

**Table 1: Virtual Machine State**

Virtual Machine State When Parent Snapshot Is Taken	Virtual Machine State After Restoration
Powered on (includes memory)	Reverts to the parent snapshot, and the virtual machine is powered on and running.
Powered on (does not include memory)	Reverts to the parent snapshot and the virtual machine is powered off.
Powered off (does not include memory)	Reverts to the parent snapshot and the virtual machine is powered off.

**Step 6** Click **OK**.

It will take a few minutes to take the snapshot. When the snapshot has been created, in the **Recent Tasks** list, the **Create virtual machine snapshot** task status shows **Completed**.

**Step 7** Repeat Steps 2 through 6 to back up the other virtual machines in the cluster.

## Restore Data from an Earlier Time

You can restore snapshots in the following ways:

- **Revert to Current Snapshot**—Restores the most recent snapshot, the parent snapshot.
- **Go to**—Lets you restore any snapshot in the snapshot tree and makes that snapshot the parent snapshot of the current state of the virtual machine.

Restoring snapshots has the following effects:

- The current disk and memory states are discarded, and the virtual machine reverts to the disk and memory states of the snapshot that you restore. Any users or links that are not captured in the snapshot are discarded.
- Existing snapshots are not removed. You can restore those snapshots at any time.
- If the snapshot includes the memory state, the virtual machine will be in the same power state as when you created the snapshot.



**Important**

Mixed version clusters are not supported outside of an upgrade or revert maintenance window.

## Procedure

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- Step 1** Open vSphere Client.
- Step 2** Make sure that you have backed up each virtual machine in the cluster.
- Step 3** Shut down each virtual machine in the cluster:
- In the virtual machines and templates inventory tree, select the virtual machine.
  - On the **Getting Started** tab, click **Shut down the virtual machine**.
- Step 4** In the virtual machines and templates inventory tree, right-click the virtual machine, and then point to **Snapshot**.
- Step 5** Restore the snapshot:
- If you want to revert to the most recent snapshot, click **Revert to Current Snapshot**.
  - If you want to restore to another snapshot in the snapshots tree:
    - Click **Manage Snapshots**.
    - From the list of snapshots, click the snapshot that you want to restore.
    - Click **Go to** to restore the virtual machine to the snapshot.
    - Click **Yes** in the confirmation dialog box.
- When the snapshot is restored, in the **Recent Tasks** list, the status of the **Revert** task shows **Completed**.
- Step 6** Repeat Steps 4 and 5 to restore the other virtual machines in the cluster.
- Step 7** Verify that the cluster restored correctly by signing in to Cisco Jabber Guest Administration as an administrator. The Cisco Jabber Guest version number to which you restored appears at the bottom of the screen.
- Step 8** Check to make sure that all users and links look as you expect.
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