Restoring Windows Dynamic Disks

With CDP Enterprise and Advanced Edition, you can perform a Bare-Metal Restore of Windows dynamic disks.

> **Reference**
> Dynamic disk is a physical disk initialized for dynamic storage. Dynamic disks do not use partitions or logical drives. They use a database to track information about dynamic volumes on the disk and about other dynamic disks in the computer. Read more about dynamic disks here: http://technet.microsoft.com/en-us/library/cc737048%28WS.10%29.aspx.

> **Note for Windows Dynamic Disks and Software RAID**
>
> 1. If you are using Windows Software RAID, first restore your System Disk (e.g., `C:`) while booted from Live CD.
> 2. Reboot into Windows.
> 3. Ensure the CDP Agent is running.
> 4. Use Windows Disk Manager to re-create your Dynamic Disk configuration (e.g.. spanned volumes or Software RAID).
> 5. Use CDP Bare-Metal Restore Wizard to restore the remaining dynamic disks, mapping filesystems to the dynamic disks you created using Windows Disk Manager.

1. Loading Agent in Recovery Mode and Installing the Server Key | 2. Restoring Windows System Volume | 3. Booting Windows | 4. Configuring Windows Dynamic Disks | 5. Restarting CDP Agent | 6. Restoring Simple Volume Filesystems

1. Loading Agent in Recovery Mode and Installing the Server Key

Follow the instructions below to load the Agent in Recovery mode and to install the Server Key.

1. Boot the Agent from Live CD or PXE Network Boot.

2. Then you may need to configure the network settings.

3. To add the server key to the Agent, run the following command on the Agent machine:

#r1soft-setup --get-key [Server_URL]

```
r1soft-recovery:~# r1soft-setup --get-key http://172.18.3.51
Key '172.18.3.51' successfully installed.
r1soft-recovery:~#
```

> **Note**
> The `--get-key` function downloads the Key from the Server. For this option to work, the Server should be up and accessible from the Agent via the network.

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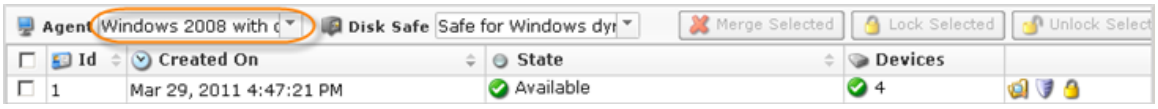
2. Restoring Windows System Volume

Follow the instructions below to start the Bare-Metal Restore of the Windows system (boot) Volume.

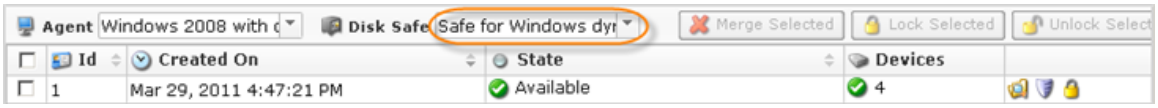
1. Click on "Recovery Points" in the Main Menu to open the "Recovery Points" screen.

Enterprise Edition	LiveCD Server, PXE Server
	

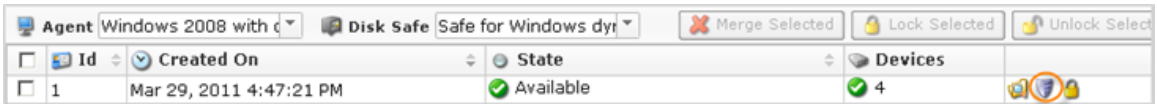
2. Select an Agent from the drop-down menu located on the "Recovery Points" list toolbar.



3. Select a Disk Safe from the drop-down menu located on the "Recovery Points" list toolbar.

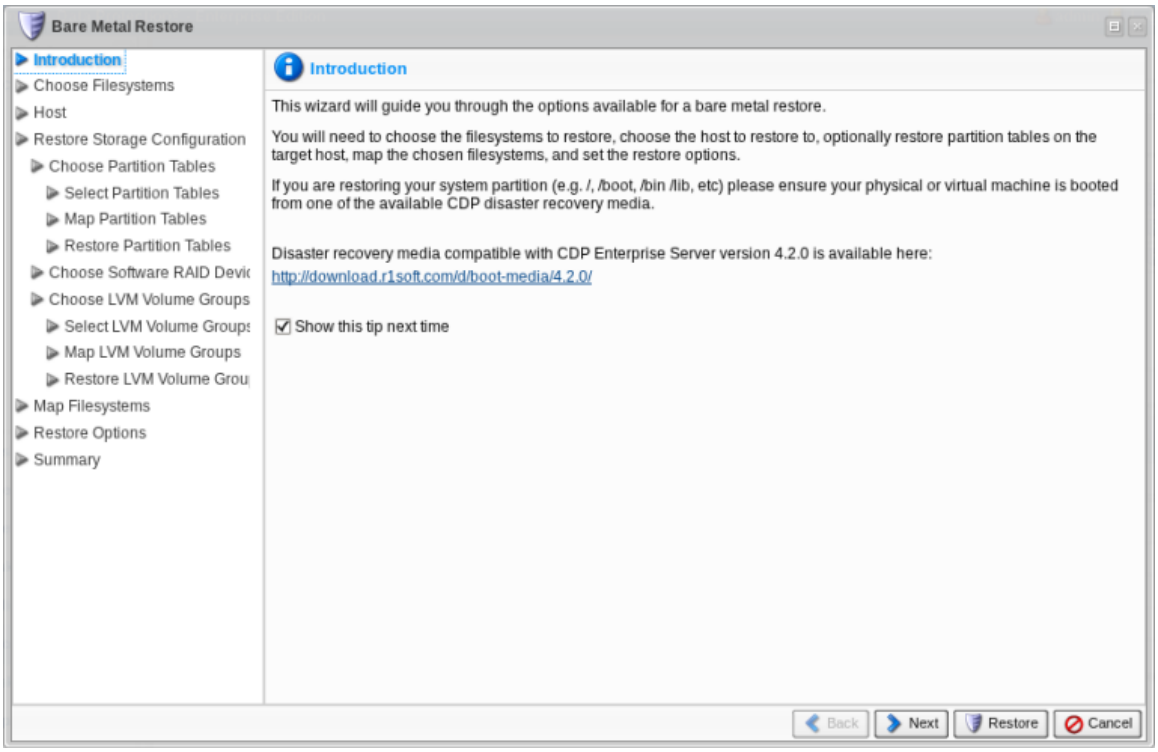


4. In the "Recovery Points" list, click on the "Bare-Metal Restore" icon in the "Actions" column for the Recovery Point from which you are going to restore.

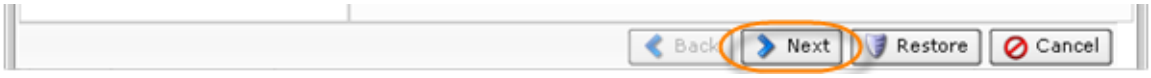


> **Tip**
> To find a Recovery Point, you can use the Basic and Advanced List Filters. See Customizing the Recovery Points List.

5. The "Bare-Metal Restore" window opens.



6. Look through the information on the Introduction screen and click "Next."

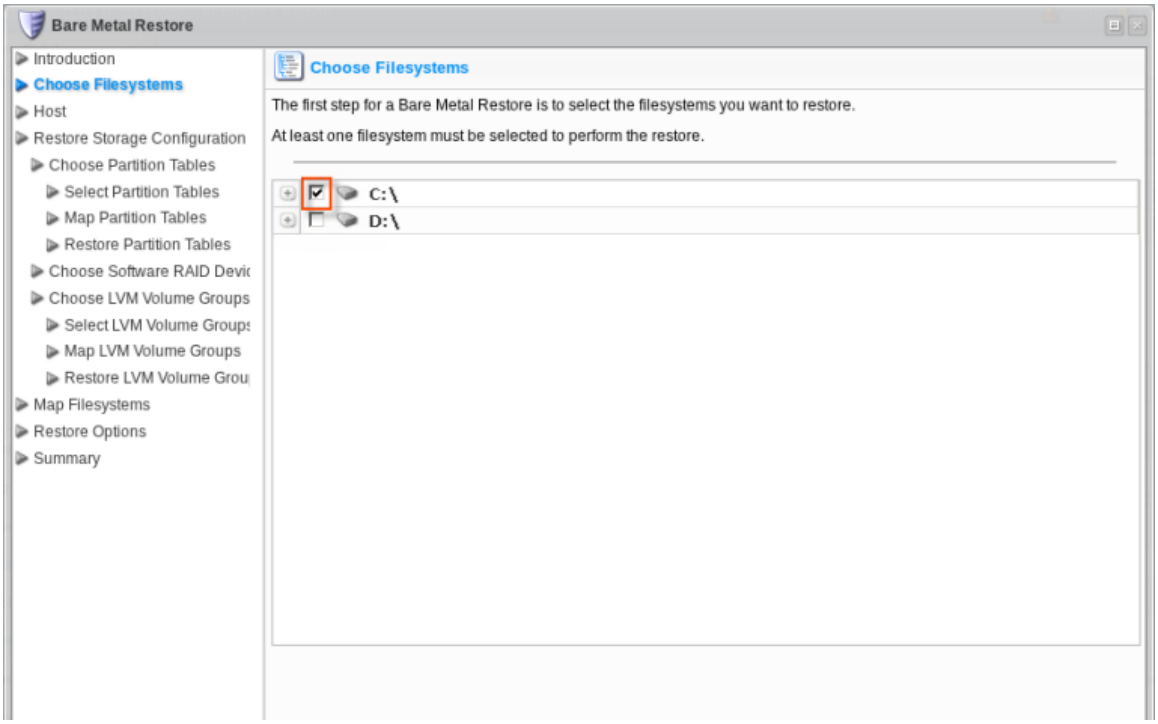


7.

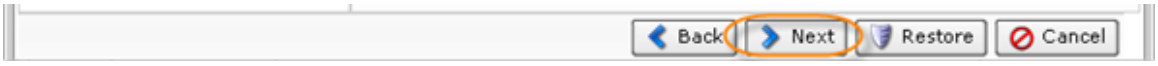
> **Note**
> Hereinafter on this page there are some changes (for version 4.2.0). Please refer to this link Bare-Metal Restore Device Auto-Mapping explaining the new feature: Bare-Metal Restore Device Auto-Mapping.

On the next page, select the disk where the Windows system has been previously installed. In our example, we select disk C:\. If you are restoring Windows 7 or Windows 2008 R2, you should also restore the hidden boot partition (it is the first partition marked for the restore in the screenshot below).

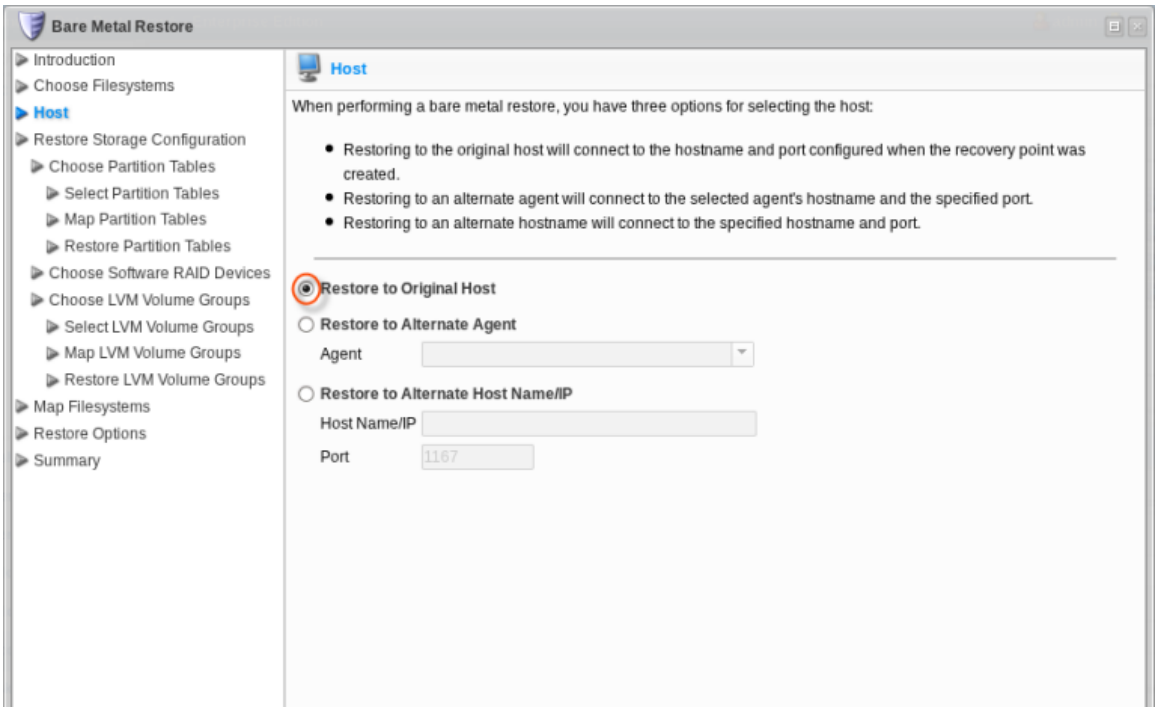
> **Tip**
> You can restore all disks in a single operation. In this case, select all check-boxes.



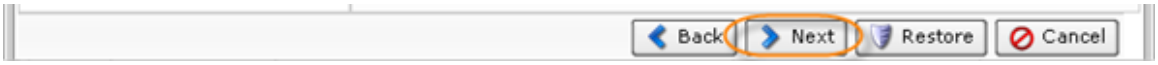
Click "Next" to proceed to the following step.



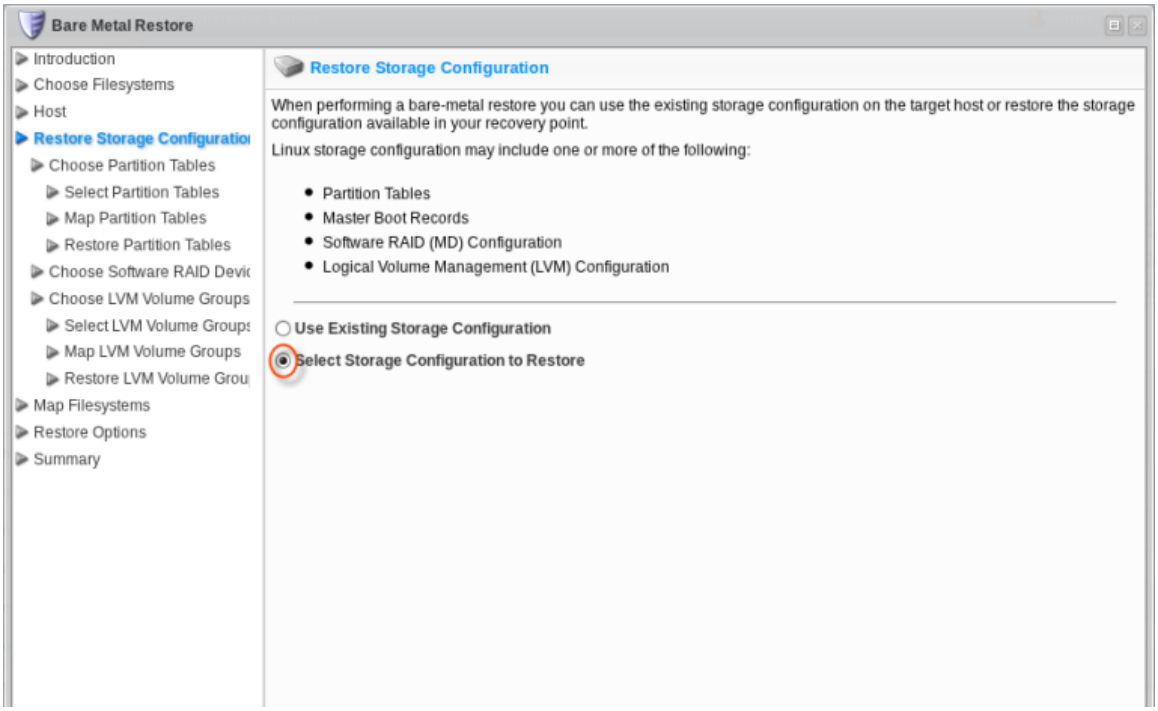
8. On the next screen, select the "Restore to Original Host" option.



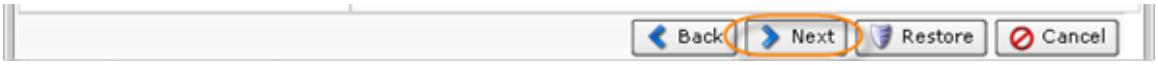
Click "Next" to proceed to the following step.



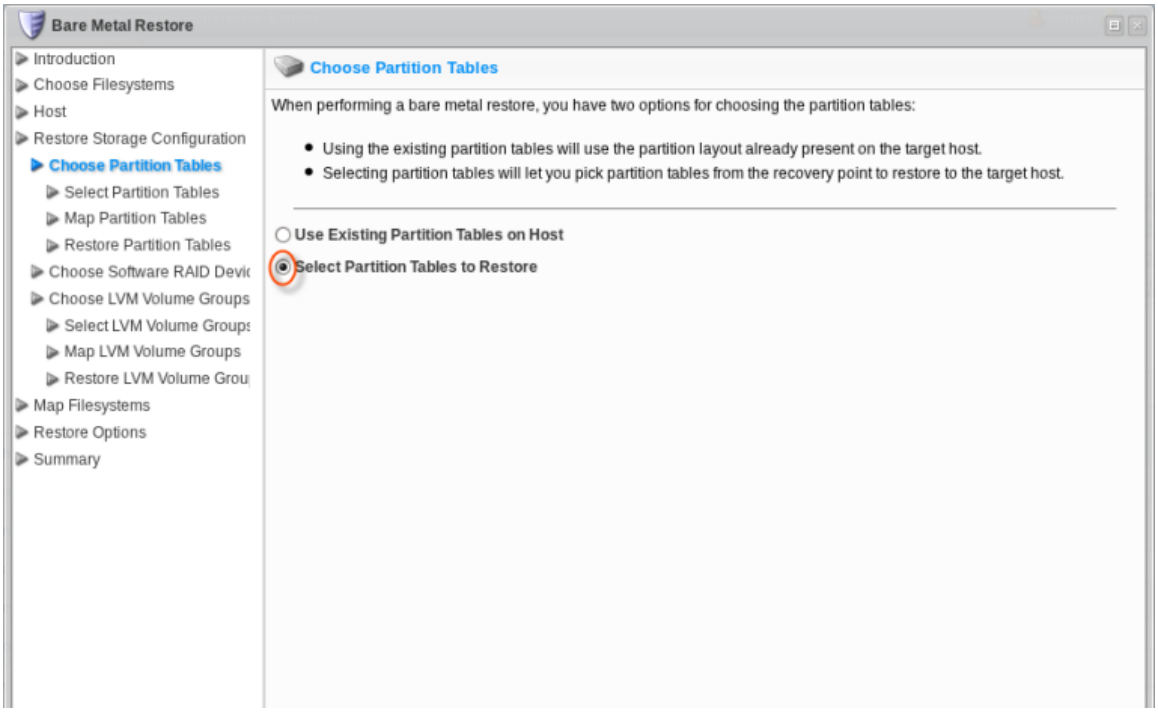
9. On the "Restore Storage Configuration" screen, choose the "Select Storage Configuration to Restore" option.



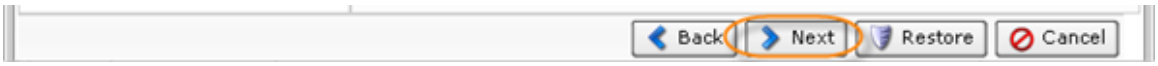
Click "Next" to proceed to the following step.



9.1 On the next screen, select the "Select Partition Tables to Restore" option. Selecting this option lets you pick partition tables from the Recovery Point to restore to the target Agent.



Click "Next" to proceed to the following step.

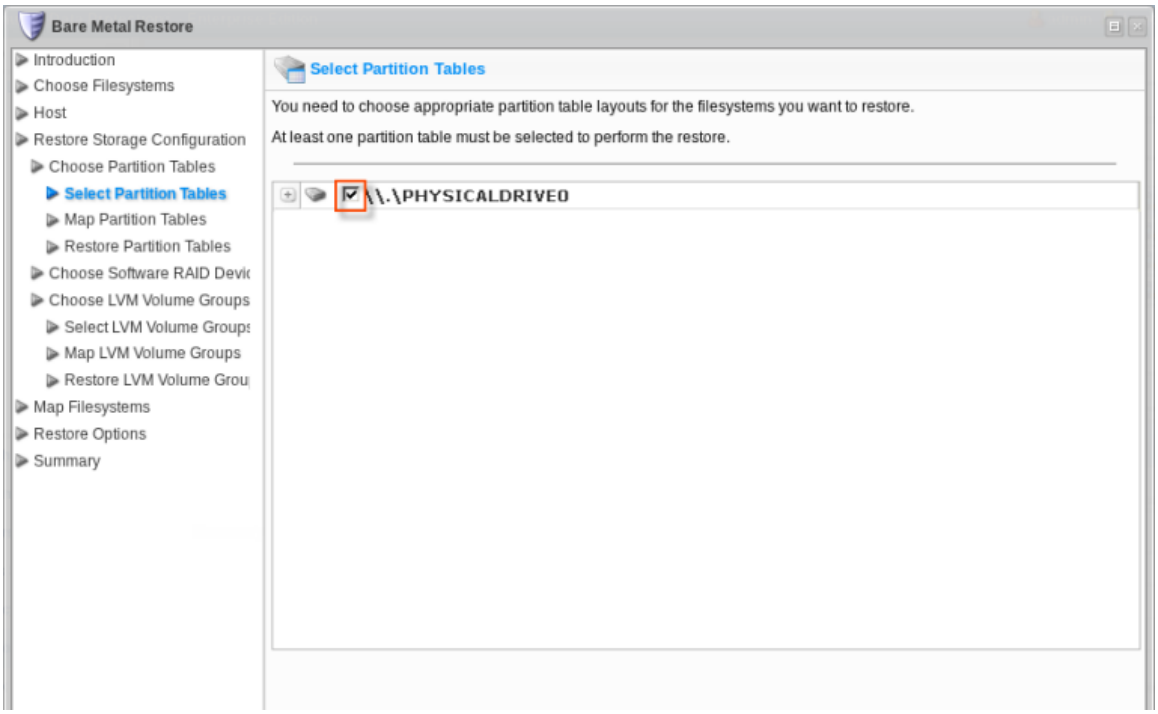


After the "Select Partition Tables to Restore" option is selected, three (3) additional steps arise:

- Select Partition Tables
- Map Partition Tables
- Restore Partition Tables

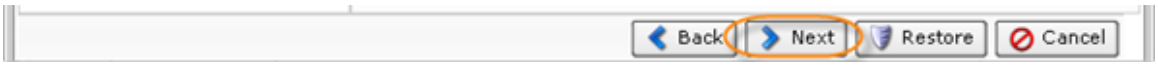
9.1.1 Selecting Partition Tables

Select the partition table layout(s) for the filesystems you want to restore.



> **Tip**
> To display the partition table properties, click on the "Plus" icon in front of the partition table's name.
>
> - Content Type - Either MBR (Master Boot Record) or another special type of partition.
> - Size - Size of the partition table in gigabytes.
> - Number Of Sectors - Shows the total number of partition table sectors.
> - Sector Size - The value of the sector in bytes.
> - Serial Number - Full serial number of the partition table.
> - Partitions - The list of partitions allocated with the partition table.

Click "Next" to proceed to the following step.

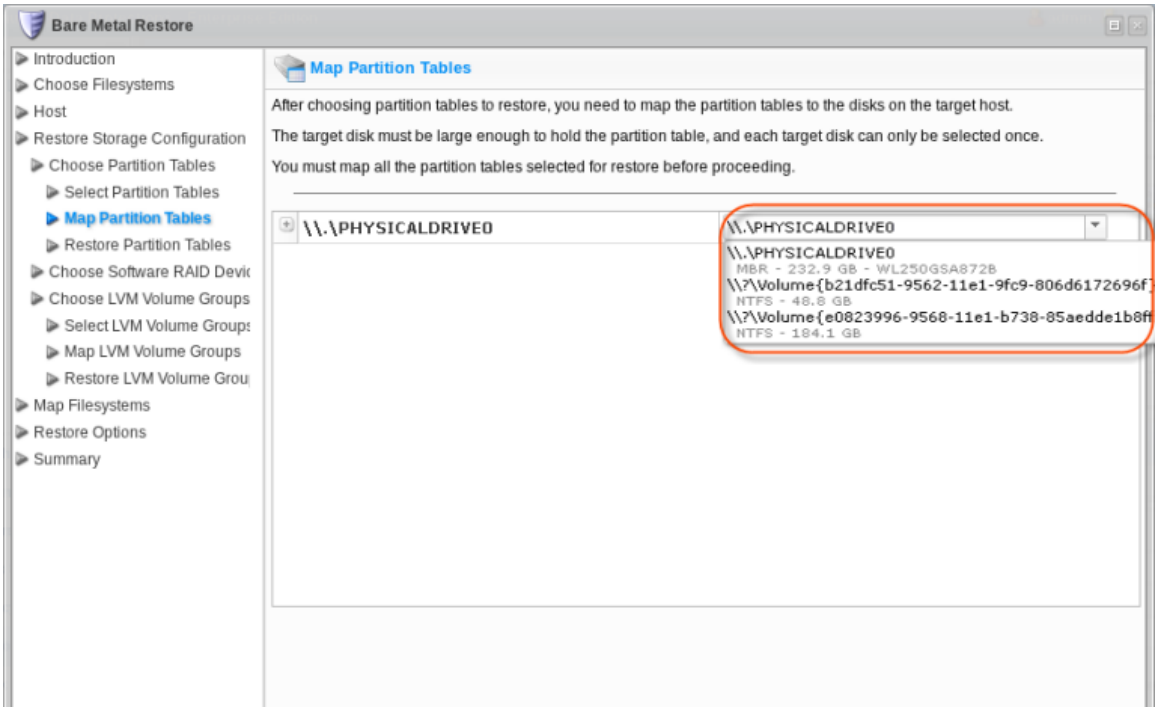


9.1.2 Mapping Partition Tables

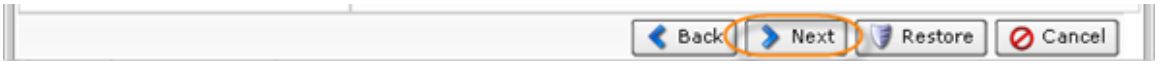
After choosing partition tables to restore, map the selected Partition Table(s) Recovery Points to physical Disks in the Target Agent. From the drop-down menu, select the physical Disks you are going to restore to.

You are provided a table that allows you to map the chosen partition tables to physical Disks on

the Target Agent. You can see as many lines in the table as the partition tables selected for restore. Each partition table must be mapped to a physical Disk on the Target Agent before proceeding.



After selecting the Disks, click on "Next" to proceed to the next page.



9.1.3 Restoring Partition Tables

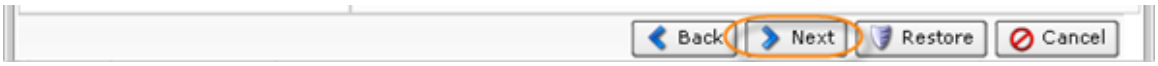
Perform the partition table restore by clicking on the "Restore Partition Tables" button. Once confirmed, the Partition Table Restore will be initiated. A busy indicator will be displayed while the restore is in progress. Restoring the partition table should not take a lot of time because the partition table fits into one 512-byte sector.

> **Notice**
> Restored partition tables will overwrite the existing partition table layout on the target devices.

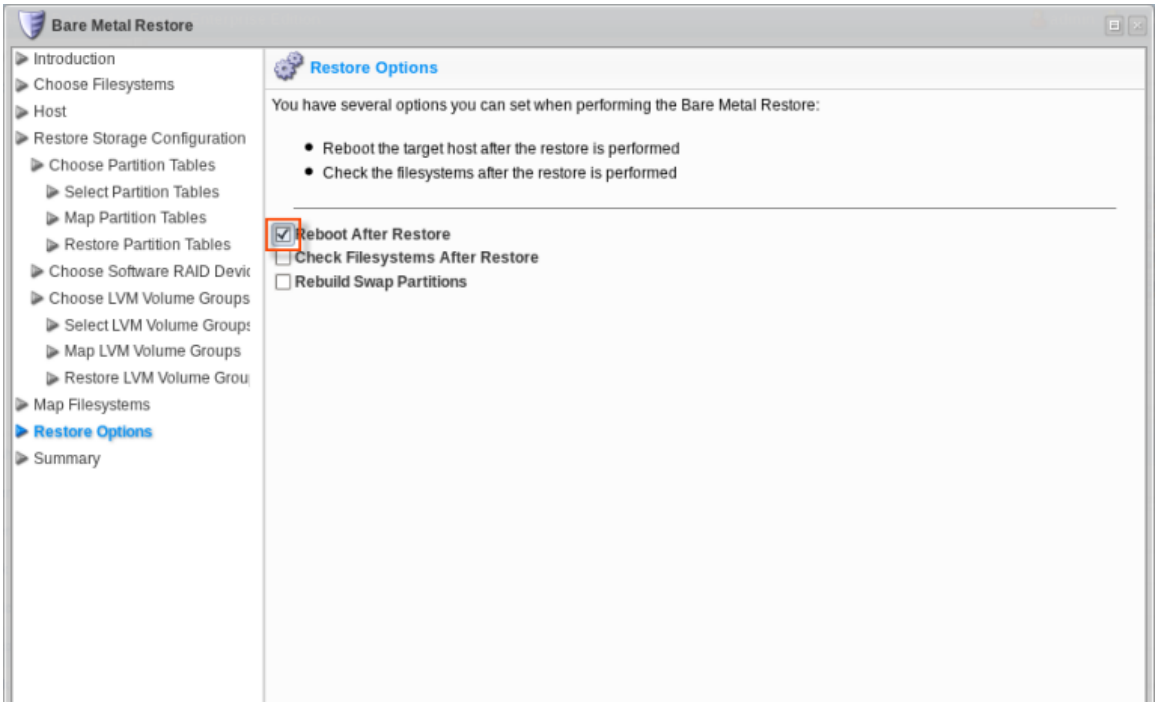
When the process is over, click "OK" in the notification pop-up.



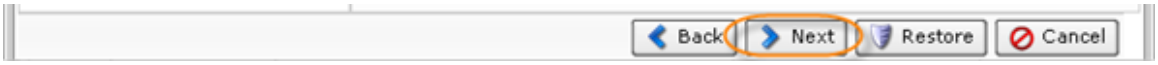
Click "Next" to proceed to the following step.



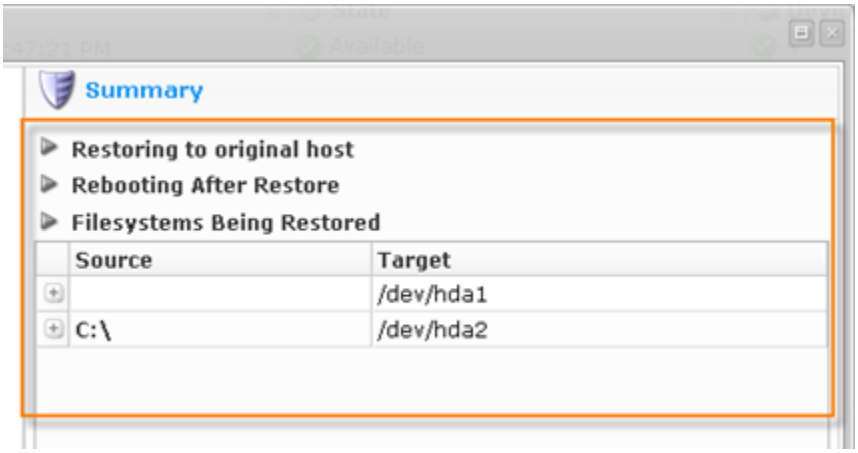
10. Then on the "Restore Options" screen, select the "Reboot After Restore" option.



Click "Next" to proceed to the following step.



11. On the "Summary" page, you will need to confirm the selected Bare-Metal Restore options. Each selected filesystem is listed, along with the name of the target device it is being mapped to.



Click "Restore" to start the Bare-Metal Restore task.



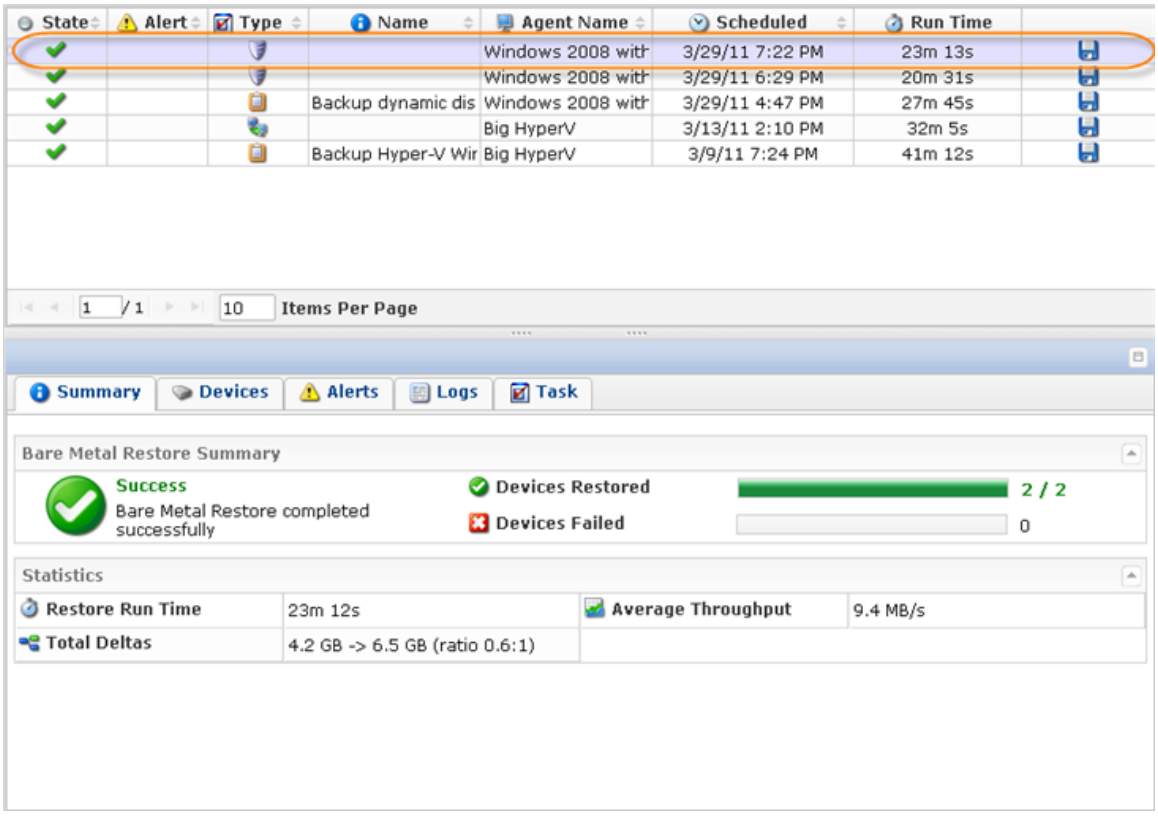
12. The data Restore is initiated. Click "OK" in the notification pop-up.



> **Tip**
> The Task results can be sent via email as a Report. See Reporting.

13. The Restore process will start. It can take a while because a lot of data (several gigabytes) should be transmitted over the network. You can go to the "Task History" screen to monitor the task progress. See Accessing Task History.

The Task History page displays the State, Alert, Type, Progress percentage, and the Started time stamp of the Bare-Metal Restore process.



14. When the process is complete, the server being restored should reboot automatically. If for some reason it does not reboot, you can reboot it by pressing Ctrl-Alt-Del or by executing the reboot command in the root shell.

> **Notice**
> Make sure you eject the Disk from the CD-ROM drive so the server will boot from the hard Disk.

> **Note**
> If the Disk you used for your Bare-Metal Restore is larger than the Disk you backed up previously, the free space on the new Disk will remain free. You can create a new Partition in this space.

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3. Booting Windows

Once the system disk has been restored, boot Windows.

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4. Configuring Windows Dynamic Disks

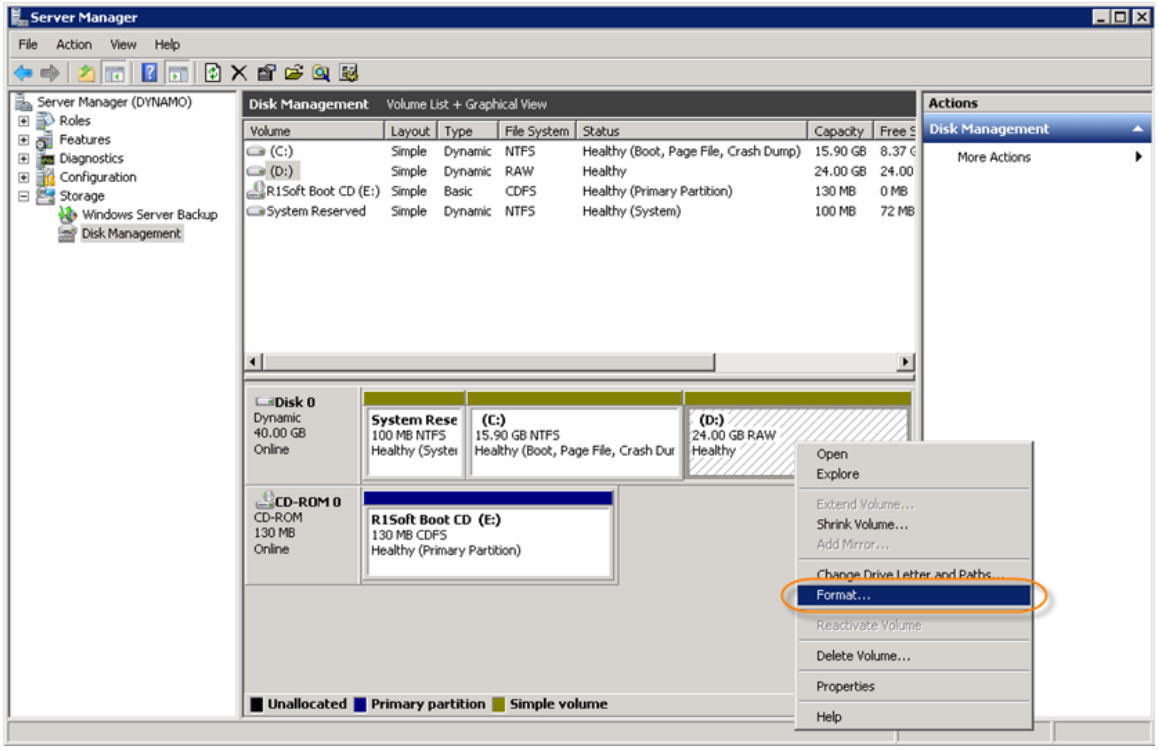
After restore, only disk C will contain all the data it should contain. All the other disks -- called "Simple Volumes" -- will be created, but will remain unformatted. You should use Windows Disk Manager to format them and then restore data to them.

> **Reference**
> Disk Management is a system utility for managing hard disks and the volumes or partitions that they contain. Disk Management enables you to perform most disk-related tasks.

1. Run the Windows Disk Manager.

2. Create the necessary dynamic drives.

3. Format the unformatted Simple Volumes (in this example, disk D).



Find more information here:

- Disk Management in Windows XP
- Disk Management in Windows Server 2008 R2
- Disk Management in Windows 7
- Disk Management in Windows Server 2003

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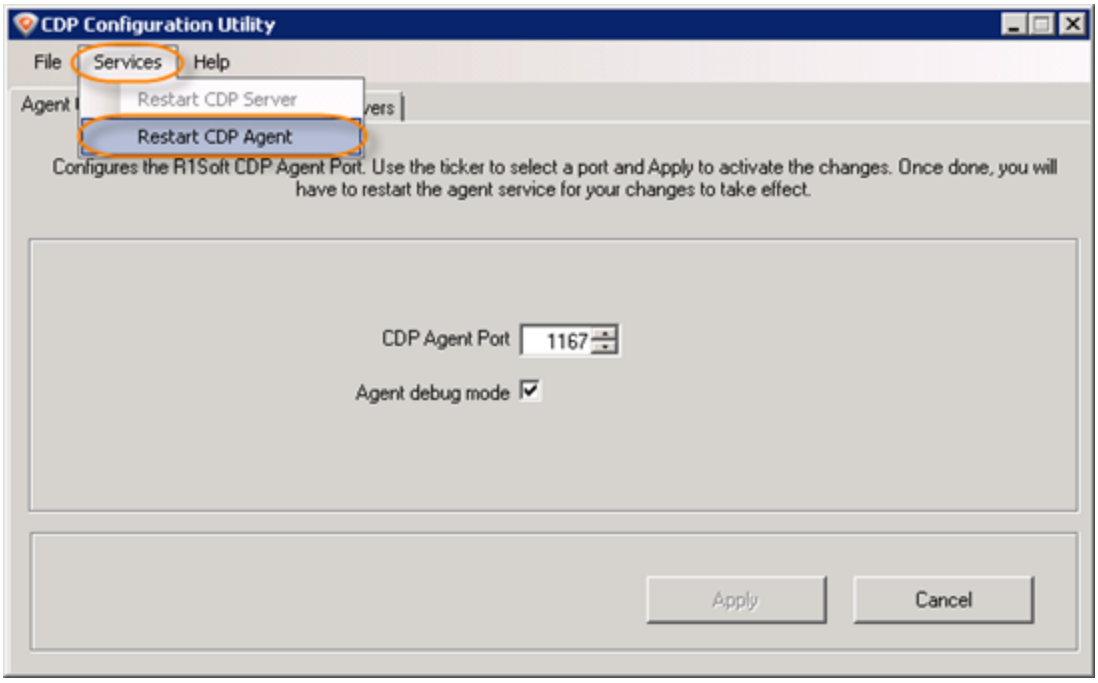
5. Restarting CDP Agent

When all the volumes are formatted, you should restart the Agent. See Restarting CDP Agent.



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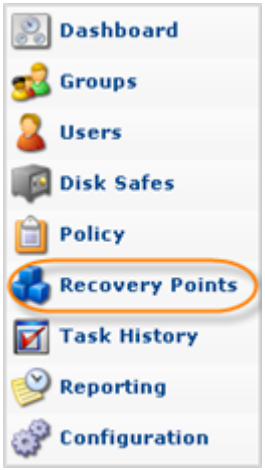
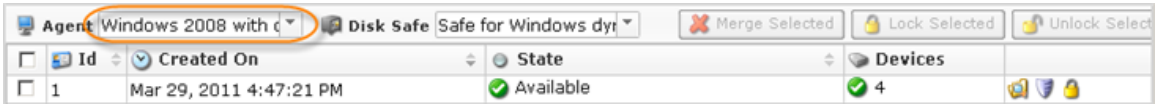
6. Restoring Simple Volume Filesystems

Use CDP to restore a dynamic disk filesystem.

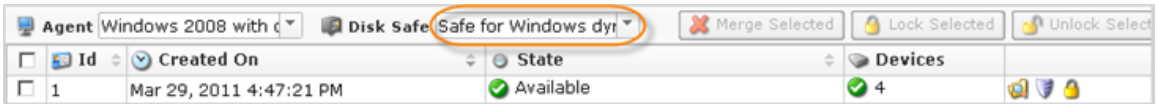
1. Click on "Recovery Points" in the Main Menu to open the "Recovery Points" screen.

Enterprise Edition	LiveCD Server, PXE Server
	

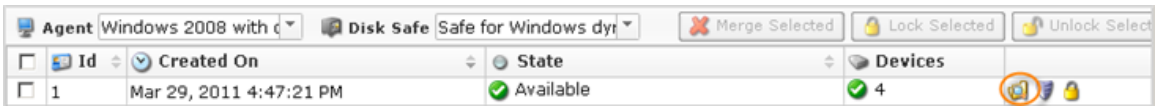
2. Select an Agent from the drop-down menu located on the "Recovery Points" list toolbar.



3. Select a Disk Safe from the drop-down menu located on the "Recovery Points" list toolbar.

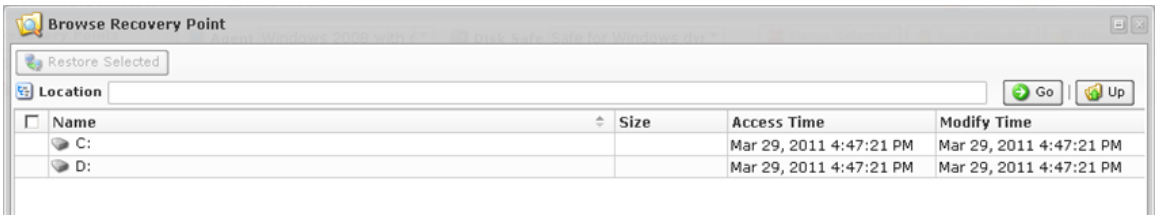


4. In the "Recovery Points" list, click on the "Browse" icon in the "Actions" column for the Recovery Point from which you are going to restore.



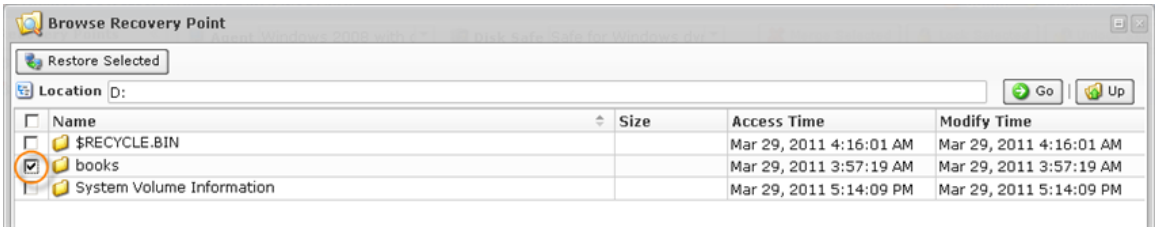
> **Tip**
> To find a Recovery Point, you can use the Basic and Advanced List Filters. See Customizing the Recovery Points List.

5. The "Browse Recovery Point" window opens.

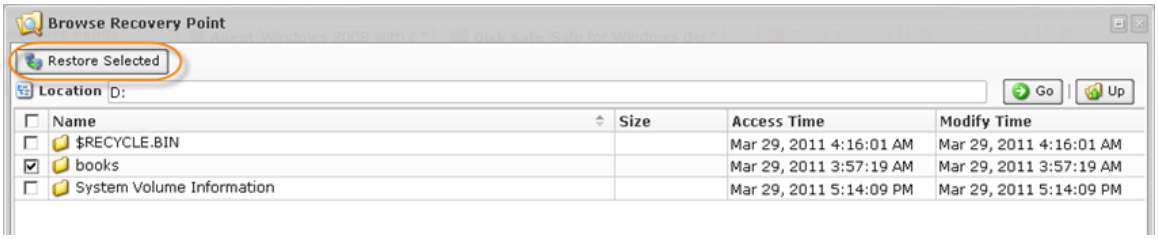


See also: Browsing Recovery Points.

6. Select the check-boxes next to the files and folders you want to restore.



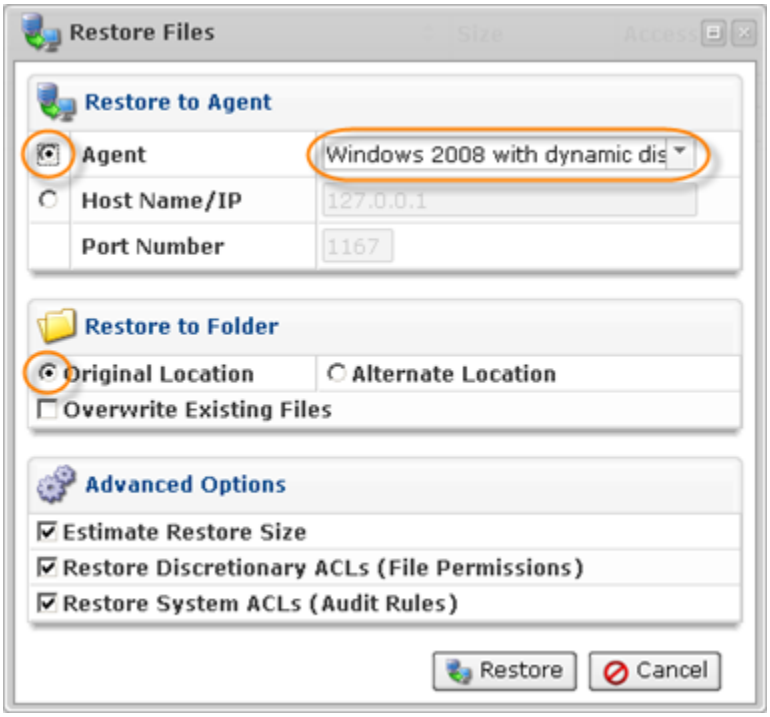
7. Once the files and folders are selected, click on "Restore Selected."



8. The "Restore Files" window will open.

9. Specify the following options:

- Restore to Agent - Select the Agent with dynamic disks you have just created.
- Restore to Folder - In our example, we select "Original Location."

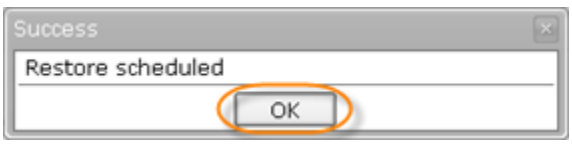


10. Click on "Restore."



11. A notification window will inform you that the Restore task has been scheduled. It means the Task has started. The "Reporting" screen displays the progress of the Task.

Click "OK" in the displayed window.



> **Tip**
> The Task results can be sent via email as a Report. See Reporting.

12. To view the Restore Task details, access the "Reporting" window. See Accessing Task History.

