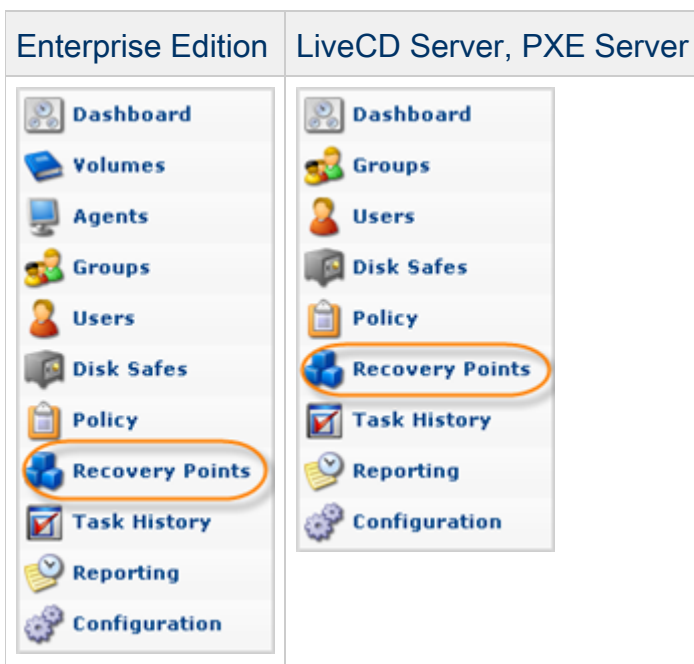


## Launching Bare-Metal Restore

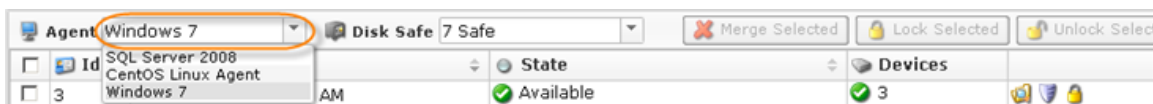
Follow the instructions below to start the Bare-Metal Restore of selected Recovery Points.

- Note**  
The process is the same for all Boot methods:
- Live CD
  - PXE Network Boot

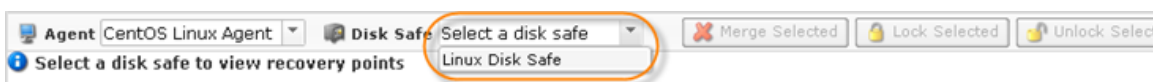
1. Click on "Recovery Points" in the Main Menu to open the "Recovery Points" screen.



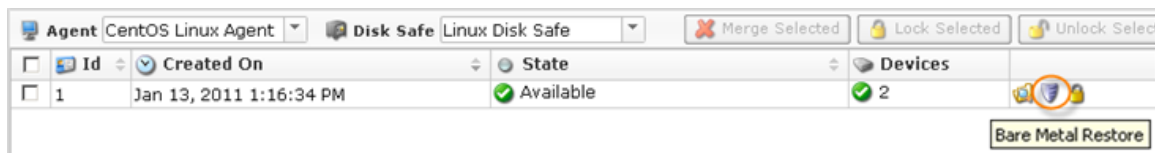
2. Select an Agent from the drop-down menu located on the "Recovery Points" list toolbar.



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

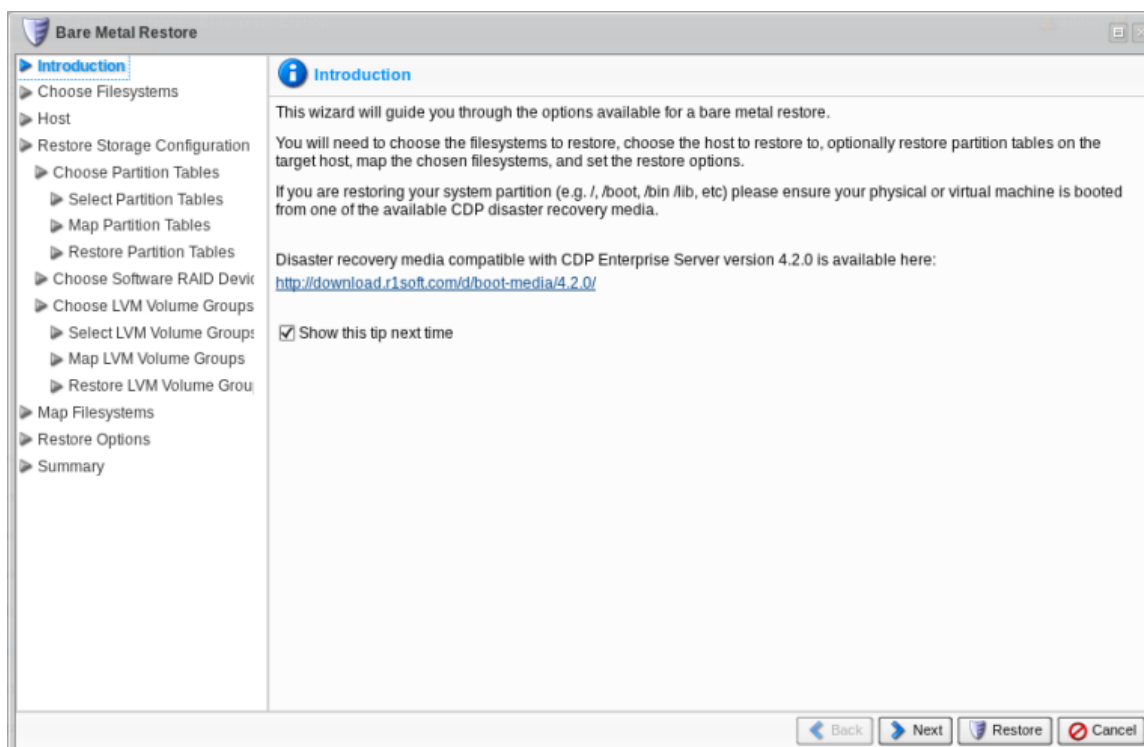


3. In the "Recovery Points" list, click on the "Bare-Metal Restore" icon in the "Actions" column for the Recovery Point from which you are going to restore.

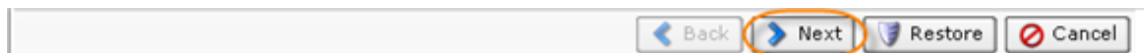


**Tip**  
To find a Recovery Point, you can use the Basic and Advanced List Filters. See [Customizing the Recovery Points List](#).


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



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




6.

 Note

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

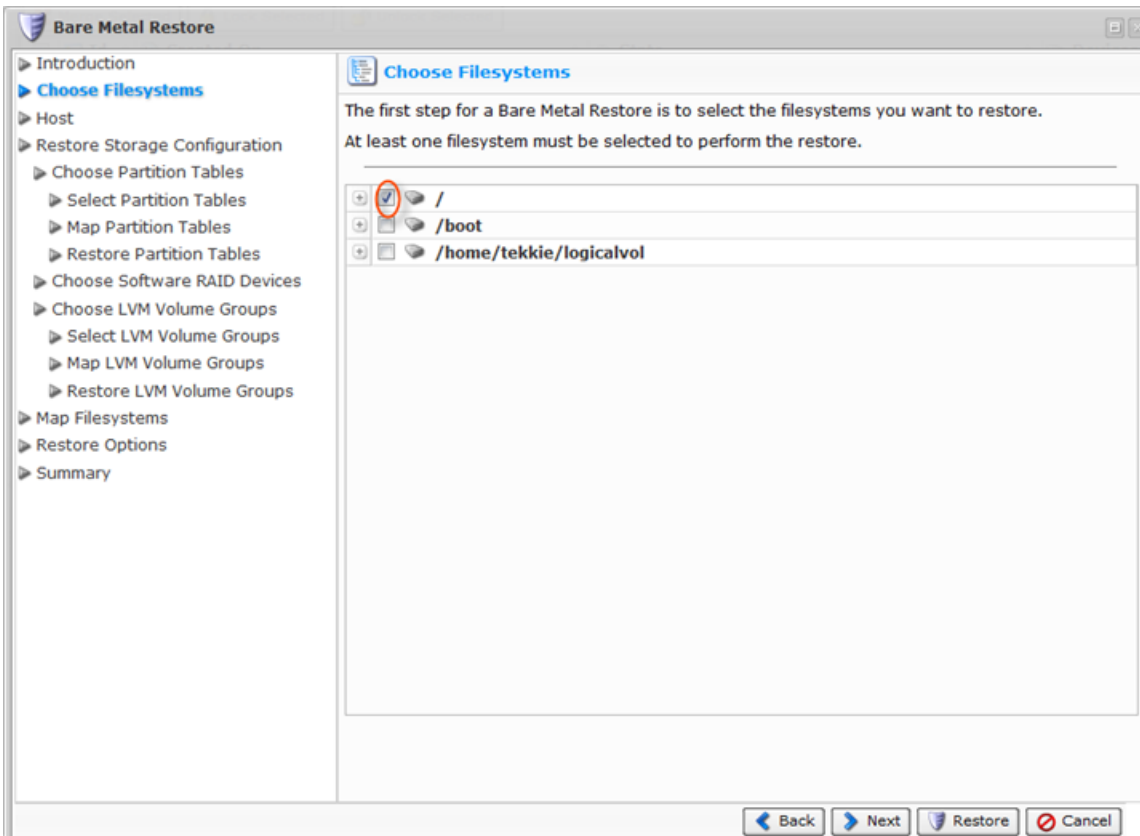
The next screen lists each filesystems and swap device (if Linux) available in the Recovery Point.

Here, you can select the filesystem you want to restore. All available filesystems are listed. At least one must be selected by clicking on the appropriate check-box.

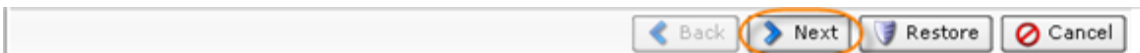
 Tip

To display file system properties, click on the "Plus" icon in front of the file system name. The following data is provided for each filesystem:

- Content Type - Either "MBR" (Master Boot Record) or a filesystem of a special type. The most common filesystem types are NTFS (Windows) and EXT3 (Linux).
- Device Path - The path used by the operating system to identify the hard disk or partition. In Windows, it looks like [\\?\Volume2cb24442-fd22-11df-b57d-806e6f6e6963](#). In Linux, it looks like [/dev/hda](#) or [/dev/sda](#). The Device Path saved in the Recovery Point refers to the Device that this Recovery Point was created for. If you are performing a Bare-Metal Restore to an alternate Agent, the Device Path will be different.
- Size - Size of the hard disk or partition in gigabytes.
- Block Size - Minimum amount of space that can be allocated on the hard disk. Depends on the partition size and filesystem used, and is a multiple of 512 bytes.
- Total Blocks - The total number of blocks (see above) available for data on this partition.
- Allocated Blocks - The number of blocks allocated for data at the time the Recovery Point was created.



Click "Next" to proceed to the following step.



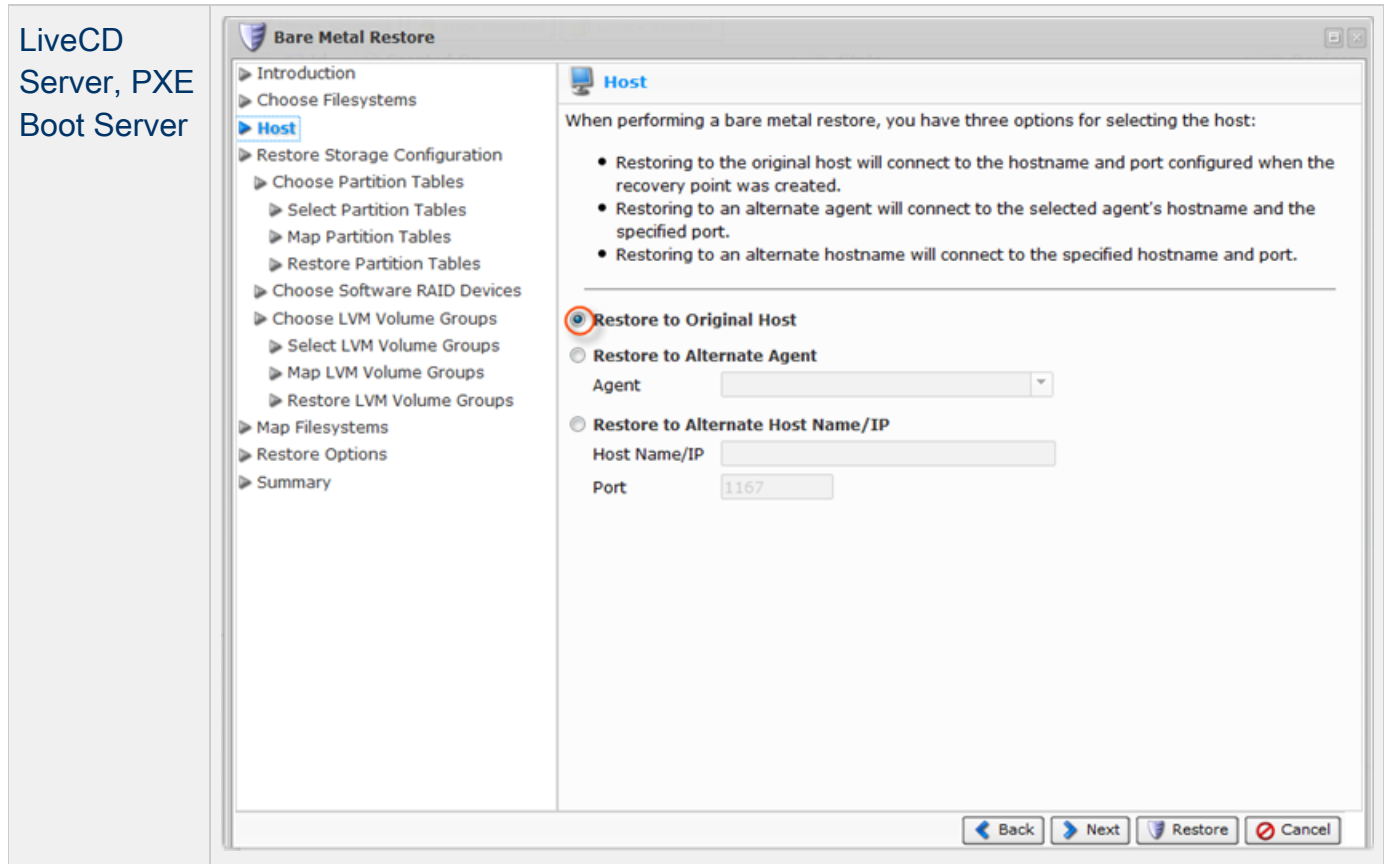
7. On the next screen, select one (1) of the following options:

- Restore to Original Host - The same Agent Name/IP address and port as the original Agent. Connects to the Agent name and uses the port configured when the Recovery Point was created.
- Restore to Alternate Agent - Connects to the selected Agent's hostname and the specified port. The Agent must have already been added to the system.
- Restore to Alternate Host Name/IP - Connects to the specified Host Name and port. This option allows you to Restore to a Host with a Host Name/IP address different than the original Host. For example, if the PXE host has a different IP, specify the IP address.

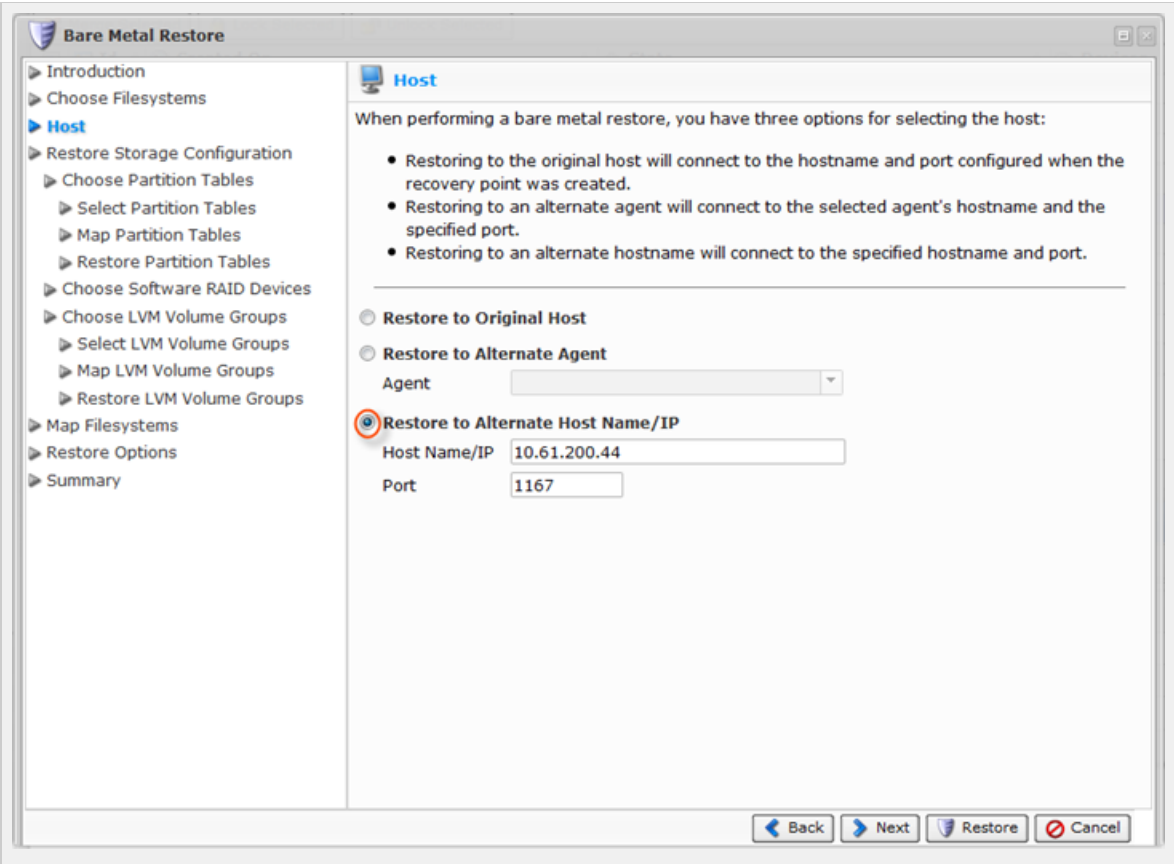
To restore to the Agent where the system was installed previously, choose the first option ("Restore to Original Host"). This is the only option that makes sense when you perform a Bare-Metal Restore using Server Live CD or Server PXE Boot.

If you choose to restore to an alternate Agent in the system, select the second option ("Restore to Alternate Agent"). Then select the Agent from the drop-down list. The Agent must be running the R1Soft Backup Disaster Recovery Boot Media and should be known to the CDP Server. When a Host is booted into Disaster Recovery Media, no authentication will be required.

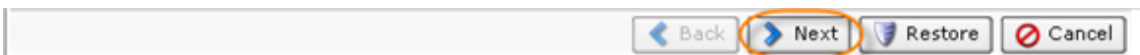
If you choose to restore to an alternate Agent that is not in the system, select the last option ("Restore to Alternate Host Name/IP"). Then enter the Host Name or IP address of the alternate Agent. This option should be selected when you perform a Bare-Metal Restore using Agent Live CD or Agent PXE Boot.



LiveCD  
Agent, PXE  
Boot Agent

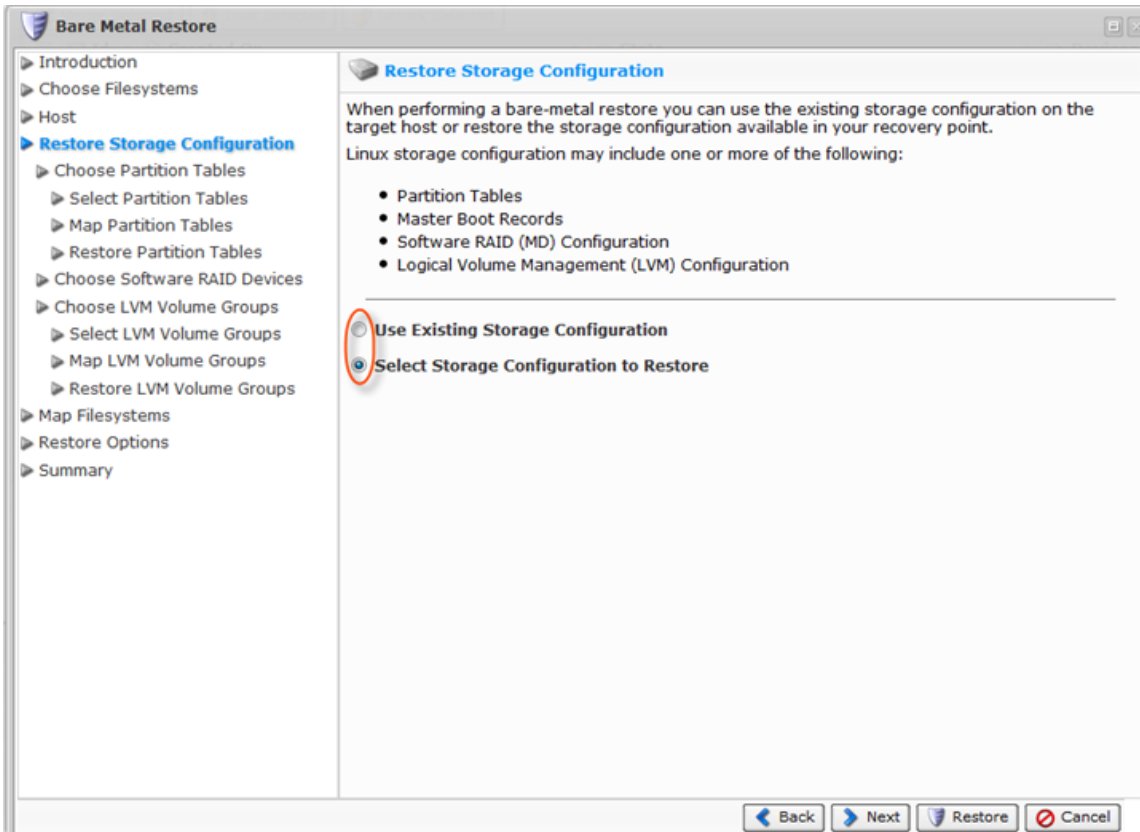


Click "Next" to proceed to the following step.



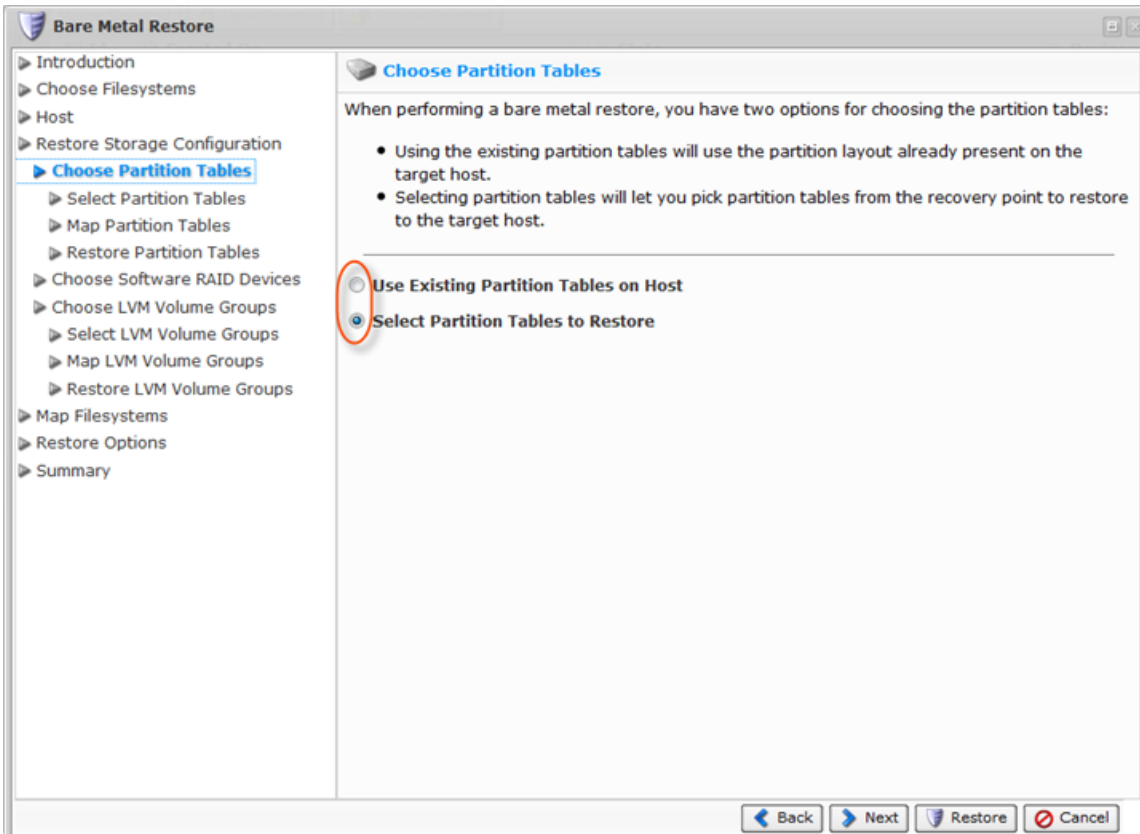
8. On the next screen, select one (1) of the following options:

- Use Existing Storage Configuration - Bare-Metal Restore will use the existing Storage Configuration. This option should almost never be used when performing a Bare-Metal Restore.
- Select Storage Configuration to Restore - Selecting this option lets you pick a Storage Configuration to restore to the target Agent. In most cases, you should select this option.

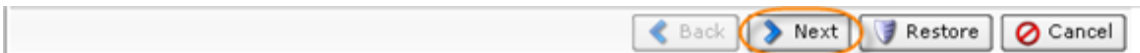


9. On the next screen, select one (1) of the following options:

- Use Existing Partition Tables on Host - Bare-Metal Restore will use the partition layout already present on the target Agent. This option should almost never be used when performing a Bare-Metal Restore.
- Select Partition Tables to Restore - Selecting this option lets you pick partition tables from the Recovery Point to restore to the target Agent. In most cases, you should select this option.



Click "Next" to proceed to the following step.

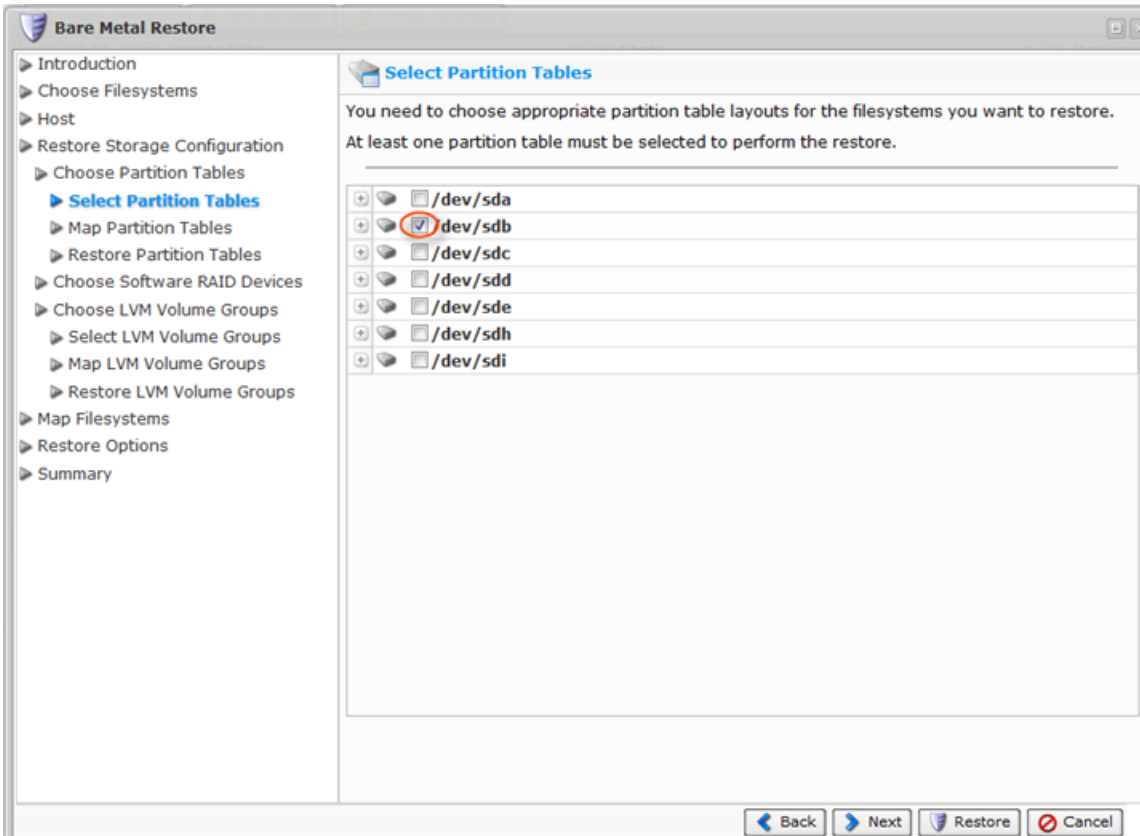


If you select the "Select Partition Tables to Restore" option, then three (3) additional steps arise:

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

#### 9.1 Selecting Partition Tables

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

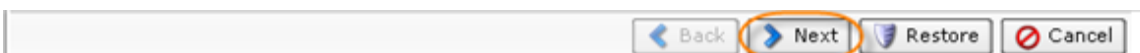


### Tip

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 - The 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.



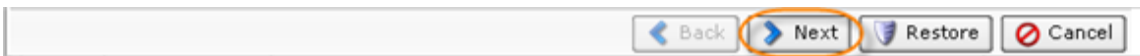
## 9.2 Mapping Partition Tables

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 number of 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.



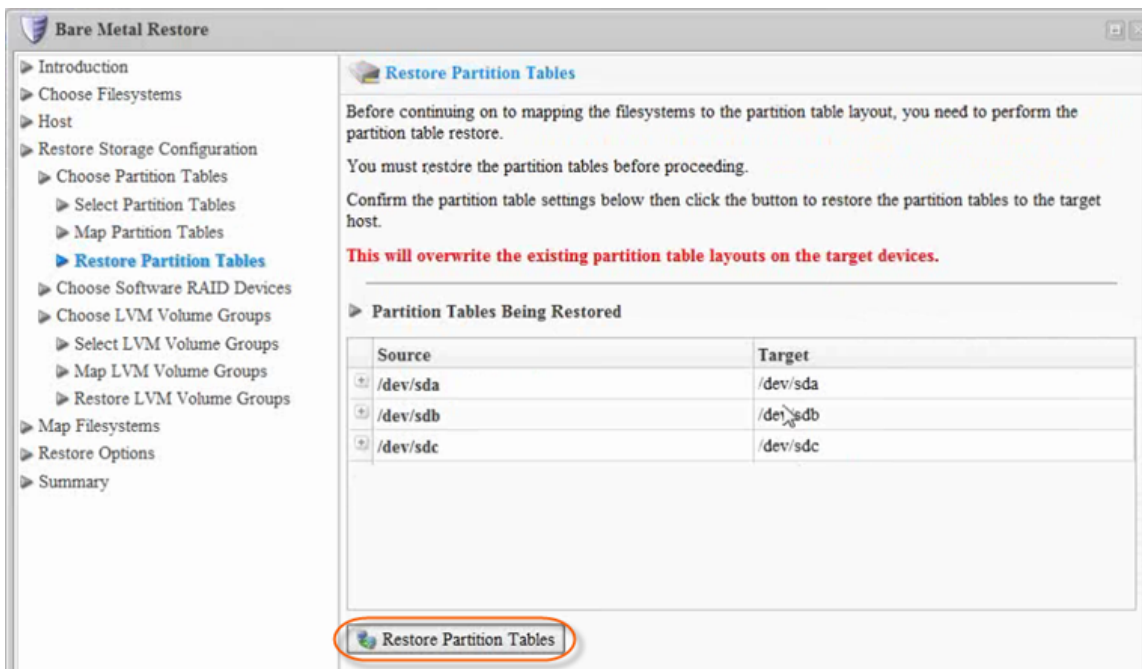
### 9.3 Restoring Partition Tables

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

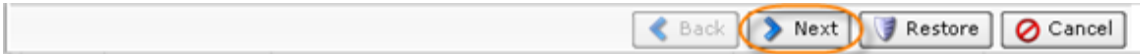
Restored partition tables will overwrite the existing partition table layout on the target devices.



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



Click "Next" to proceed to the following step.

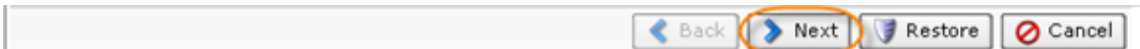


10. On the "Choose Software RAID Device" screen, choose one (1) of the following options:

- Select Software RAID Device to Restore
- Use Existing Software RAID Device



Click "Next" to proceed to the following step.

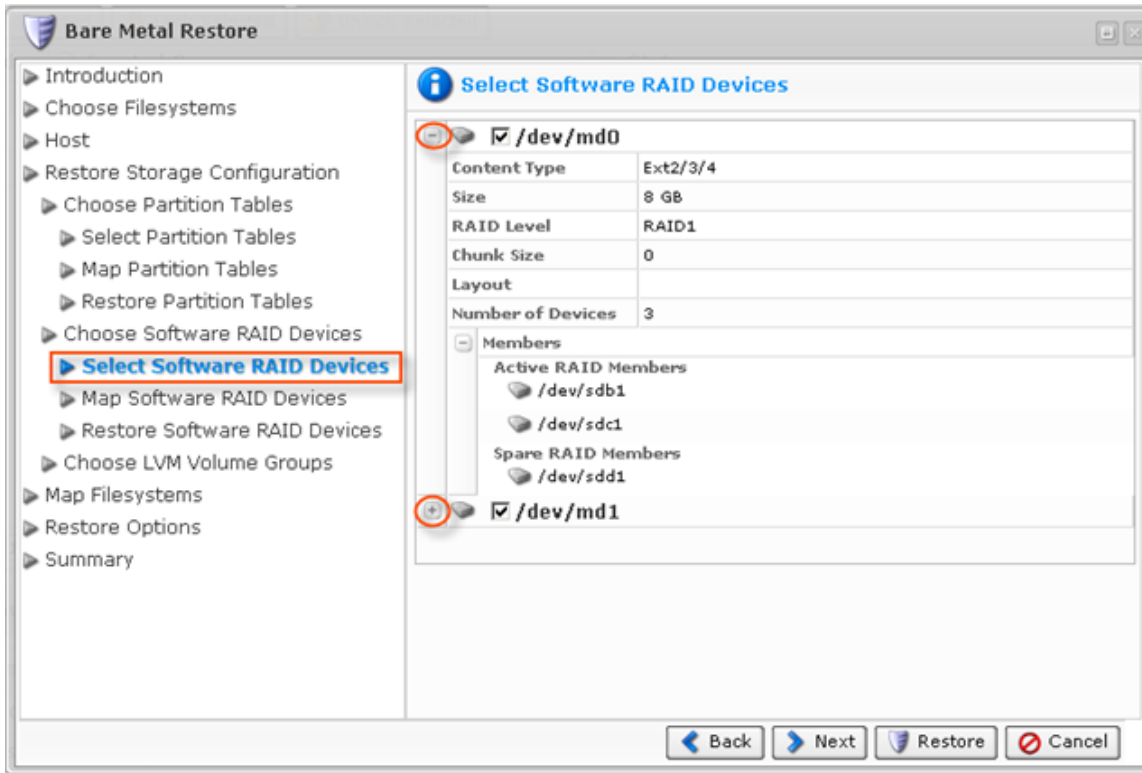


If you select the "Select Software RAID Device to Restore" option, then three (3) additional steps arise:

- Select Software RAID Device
- Map Software RAID Device
- Restore Software RAID Device

#### 10.1 Select Software RAID Device

Select Software RAID Arrays to restore in the corresponding check-box.



**Tip**

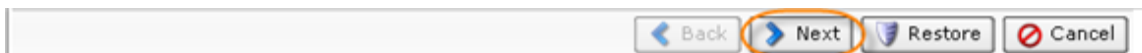
Click the plus-sign to see the details of a Software RAID Array.

[-] /dev/md0	
Content Type	Ext2/3/4
Size	8 GB
RAID Level	RAID1
Chunk Size	0
Layout	
Number of Devices	3
[-] Members	
Active RAID Members	
	/dev/sdb1
	/dev/sdc1
Spare RAID Members	
	/dev/sdd1

The following information is available:

- Content Type
- Size
- RAID Level
- Chunk Size
- Layout
- Number of Devices
- Members

Click "Next" to proceed to the following step.

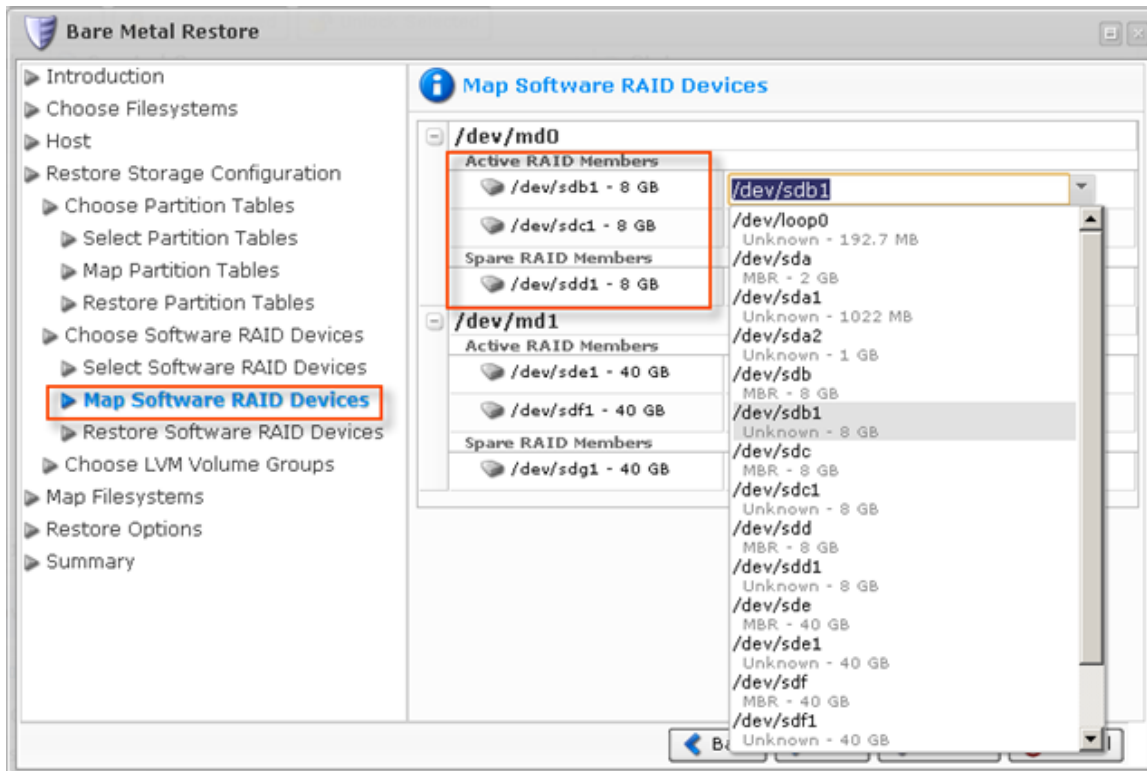


## 10.2 Map Software RAID Device

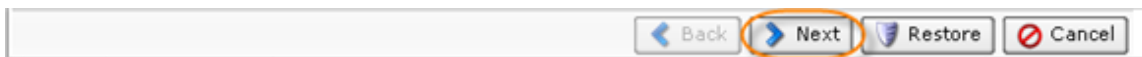
After choosing the Software RAID Arrays to restore, map them.

**Notice**

Mapping RAID arrays is hierarchical. Instead of mapping the actual RAID device (/dev/md0), you should map its active and spare members.

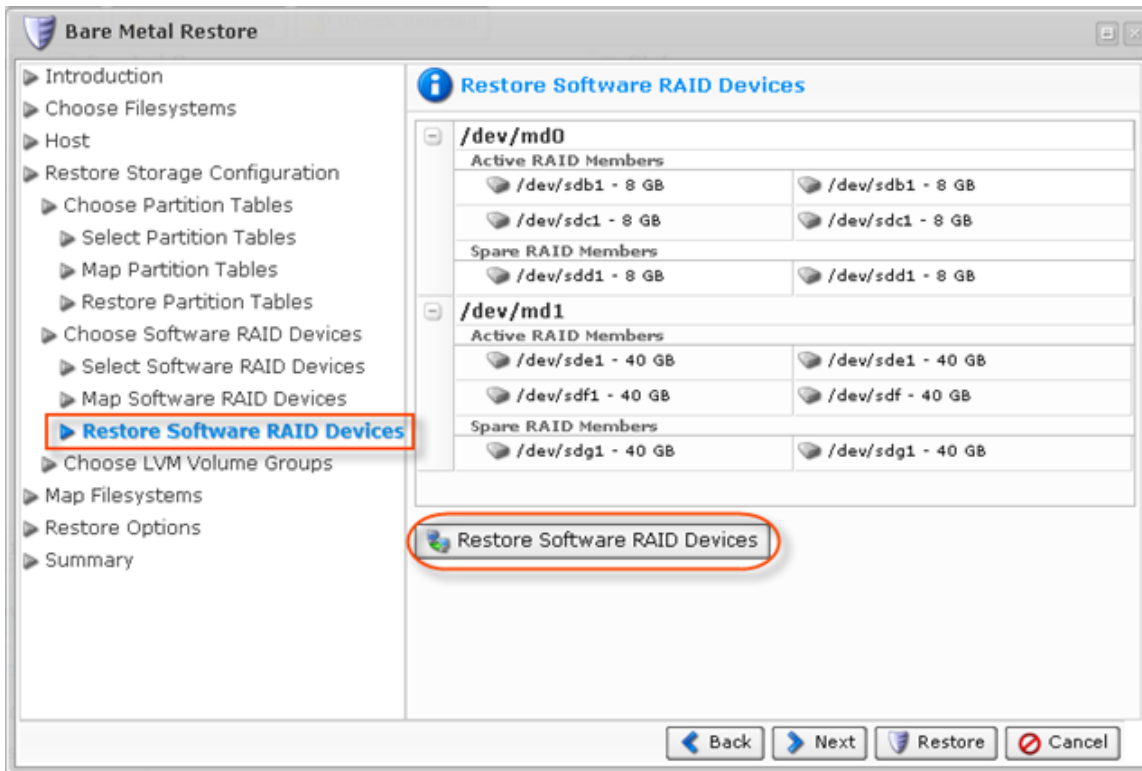


Click "Next" to proceed to the following step.

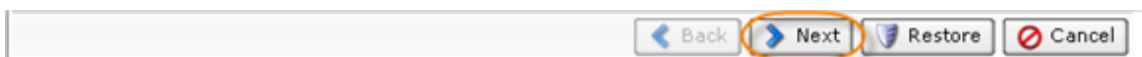


### 10.3 Restore Software RAID Device

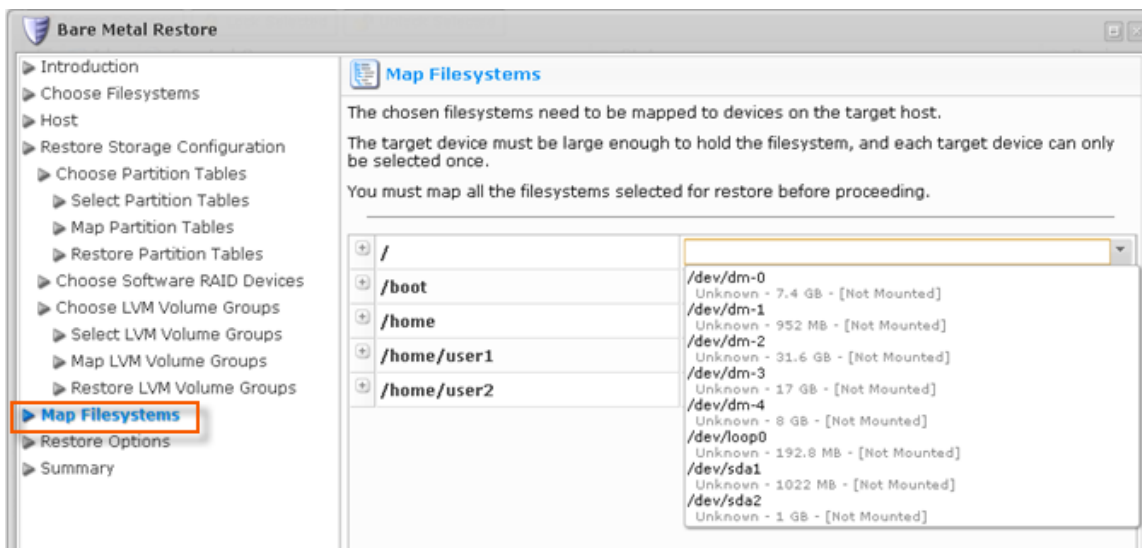
When all the members are mapped, click the "Restore Software RAID Devices" button to launch the restore.



Click "Next" to proceed to the following step.



11. The following step requires you to map the chosen filesystems to the devices on the target machine. From the drop-down menu, select the destination devices for each source filesystem.



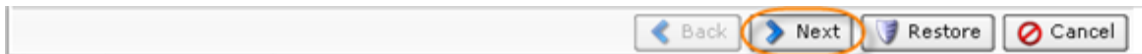
#### Notice

The target device must be large enough to hold the filesystem.

**Notice**

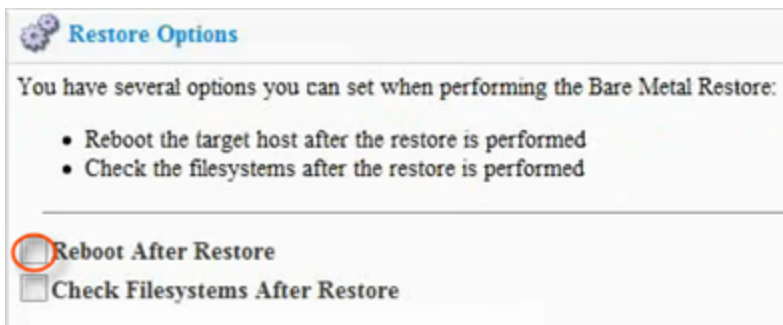
Each target device can only be selected once.

Click "Next" to proceed to the following step.

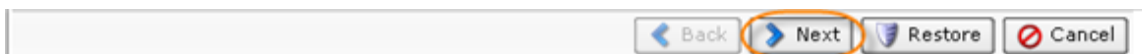


12. You then need to define the following options:

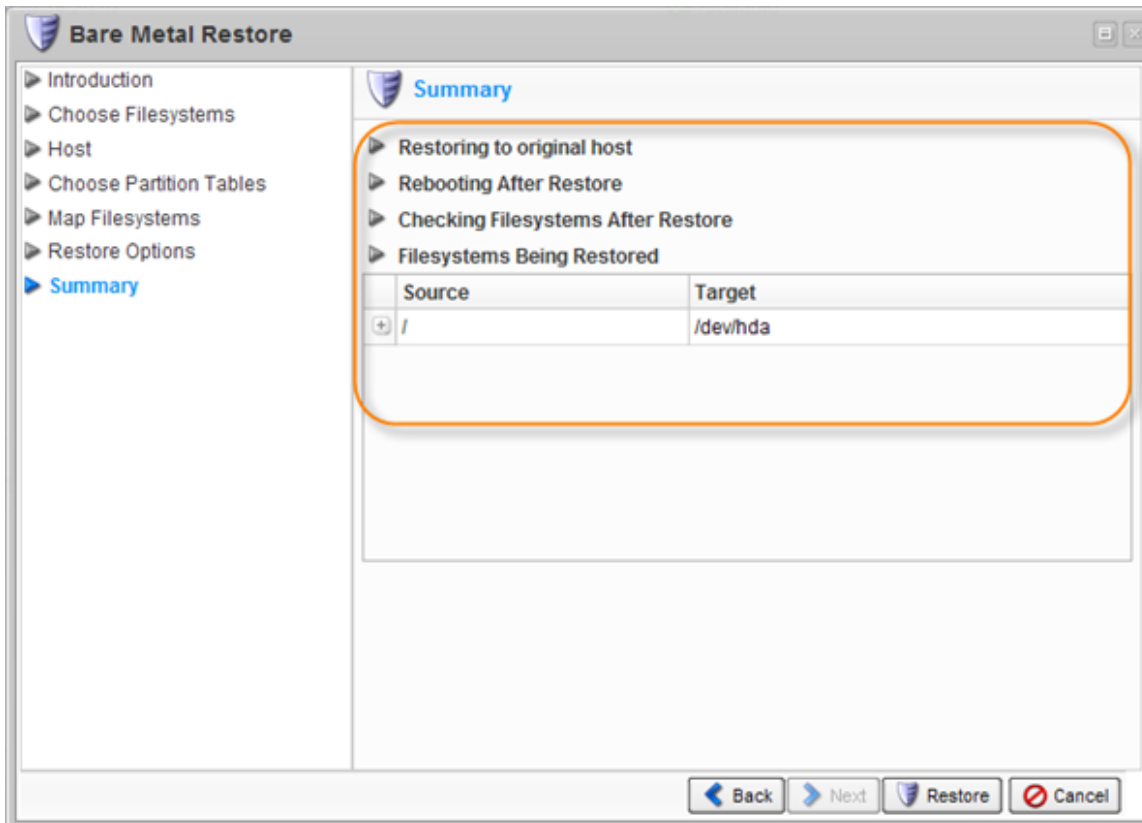
- Reboot After Restore - Reboots the target host after the restore is performed. Select this check-box to reboot your Agent after the Bare-Metal Restore is complete. This is a very useful option, since you have to reboot the target host after the restore anyway.
- Check Filesystems After Restore - Checks the filesystems after the restore is performed.



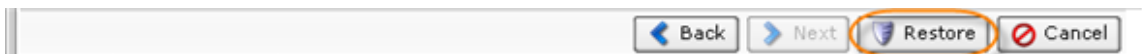
Click "Next" to proceed to the following step.



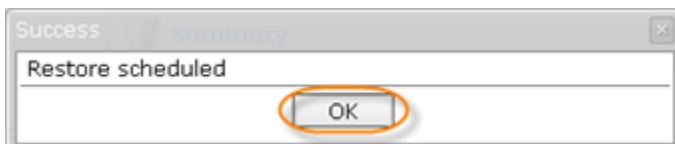
13. On the "Summary" page, you will need to confirm the selected Bare-Metal Restore options. Each selected filesystem is listed, along with the name of the target device it is being mapped to.



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



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



**i** Tip  
The Task results can be sent via email as a Report. See [Reporting](#).

15. The Restore process starts and can take a while. You can go to the "Task History" screen to observe 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.

The screenshot shows a task summary for 'CentOS Linux Agent' with the following details:

State	Alert	Type	Name	Agent Name	Scheduled	Run Time	Actions
Running	Warning	Restore	CentOS Linux Agent	CentOS Linux Agent	1/21/11 8:47 AM	1m 13s	Stop, Refresh
Completed	Warning	Restore	Windows 7	Windows 7	1/20/11 1:06 PM	1m 25s	Refresh
Completed	Warning	Restore	Windows 7	Windows 7	1/14/11 3:30 AM	7m 51s	Refresh

Below the table, the 'Summary' tab is active, showing a 'Bare Metal Restore Summary' with a progress bar for 'Running' (0/1 devices restored, 0 failed). Statistics include a restore run time of 1m 12s and an average throughput of 19.6 MB/s. The current operation is restoring 1.4 GB of 3.2 GB. A verbose status shows the last sent blocks (361,073 to 361,113) and a table of performance metrics:

Metric	Value	Metric	Value
Average Throughput	19.6 MB/s	Deltas Restored	1.4 GB / 3.2 GB
Current Network Rate	7.4 MB/s	Compressed Size	403.8 MB (ratio 0.3:1)
Average Network Rate	5.7 MB/s (peak 9.8 MB/s)		



### Note

You can find more information about the Restore process by reading the Log Messages. The Log Messages for the selected Task are displayed at the bottom of the page.

The screenshot shows the 'Logs' tab selected in the interface. The log messages are as follows:

Message Time	Level	Source	Message
12/4/10 9:39:25 AM	Info	Server	Attempting to connect to agent 10.61.200.94 at port 1167
12/4/10 9:39:25 AM	Info	Server	Connected to agent 10.61.200.94 at port 1167 successfully
10/2/10 7:07:48 PM	Info	Agent	Discovering devices available for CDP
12/4/10 9:39:25 AM	Info	Server	Restoring device / to /dev/hda
12/4/10 9:39:25 AM	Info	Server	Sending bare metal restore request
12/4/10 9:39:25 AM	Info	Server	Restoring blocks
10/2/10 7:13:27 PM	Info	Agent	Executing a file system check of device /dev/hda
10/2/10 7:14:24 PM	Info	Agent	Rebooting machine...
12/4/10 9:46:00 AM	Info	Server	Task Finished

16. When the process is complete, you can reboot the server you just restored 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.

State	Alert	Type	Name	Agent Name	Scheduled	Run Time	
✓				CentOS Linux Agen	1/21/11 8:47 AM	3m 4s	
✗	⚠			Windows 7	1/20/11 1:06 PM	1m 25s	
✓				Windows 7	1/14/11 3:30 AM	7m 51s	

1 / 13 Items Per Page

Summary Devices Alerts Logs Task

**Bare Metal Restore Summary**

**Success**  
Bare Metal Restore completed successfully

**Devices Restored** 1 / 1

**Devices Failed** 0

**Statistics**

Restore Run Time	3m 3s	Average Throughput	17.7 MB/s
Total Deltas	1.1 GB -> 3.2 GB (ratio 0.3:1)		