

Bare Metal Recovery

<https://campus.barracuda.com/doc/79463663/>

The bare metal recovery method can be used to recover entire Microsoft Windows systems in the event the system has completely failed and no other recovery options are available. With a bare metal recovery, all data, settings, applications, and operating system are installed to a bare metal system (no operating system installed).

To perform a bare metal restore, all system volumes and the system state must be backed up on the data source. Bare metal restore requires that the target system is exact or similar hardware to the originally backed up system (source). The system firmware option on the target system – BIOS or Extensible Firmware Interface (EFI) – must also match the original backed up system (source).

Windows 2016 and 2019 ReFS partitions are currently not supported in a bare metal restore.

Install the Windows ADK and Windows PE Add-On

The Barracuda Backup Bare Metal Recovery (BMR) kit is used to create a bootable ISO based on WinPE. This enables you to perform a physical-to-physical (P2P) or physical-to-virtual (P2V) bare metal restore of your Microsoft Windows Server without installing an operating system first.

Before you build a BMR ISO, you must install the Windows ADK and the Windows PE add-on for the ADK. The scripts included in the Barracuda Backup BMR kit use this software to generate an ISO used for bare metal recovery.

The following files are required to build the BMR ISO:

1. From Microsoft:
 - The latest Windows ADK
 - The latest Windows PE add-on for the ADK

Download the latest Windows ADK and Windows PE add-on for the ADK from [Microsoft](https://docs.microsoft.com/en-us/windows-hardware/get-started/adk-install) (<https://docs.microsoft.com/en-us/windows-hardware/get-started/adk-install>).
2. From Barracuda:
 - The **Barracuda Backup Bare Metal Recovery Kit**. Within Barracuda Backup, navigate to the **System > Software Downloads** page and download from the **Windows Bare Metal Recovery Kit** section.

Install the Windows ADK

1. Run **adksetup.exe** from your computer to install the Windows ADK.

2. Select **Install the Windows Assessment and Deployment Kit - Windows 10 to this computer** using the default **Install Path**. Click **Next**.
3. Specify whether you want to send your usage data to Microsoft. Click **Next**.
4. Click **Accept** to accept the license agreement.
5. Keep the default feature settings and click **Install**.
6. After the installation has completed successfully, uncheck the **Launch the Getting Started Guide** check box. Click **Close**.

Install the Windows PE Add-On for ADK

1. Run **adkwinsetup.exe** from your computer to install the Windows PE add-on for the ADK.
2. Select **Install the Windows Assessment and Deployment Kit Windows Preinstallation Environment Add-ons - Windows 10 to this computer** using the default **Install Path**. Click **Next**.
3. Specify whether you want to send your usage data to Microsoft. Click **Next**.
4. Click **Accept** to accept the license agreement.
5. Keep the default feature settings and click **Install**.
6. After the installation has completed successfully, click **Close**.

Prepare Additional Drivers for Inclusion in the BMR ISO (Optional)

If the system you are trying to recover depends on drivers that are not included in Windows PE by default, you can include additional drivers in the BMR ISO.

To include additional drivers in the BMR ISO:

1. Create a single folder or directory to hold the included drivers (e.g., C:\drivers-for-bmr).
2. Download the necessary drivers from the hardware vendor.
3. Extract the drivers if they are in a self-extracting archive or a ZIP file. Note the location of the extracted folder.
4. Inspect the extracted files to ensure there is at least one INF file to include in the BMR ISO.
5. Copy the extracted drivers in the folder from Step 3 into the directory you created in Step 1.

Download and Extract the Barracuda Backup BMR Kit

1. Within Barracuda Backup, navigate to the **System > Software Downloads** page and download the **Barracuda Backup Bare Metal Recovery Kit**.
2. Unzip the **BarracudaBackupBmrKit-X.Y.ZZ.zip** archive file. *Note the location of the extracted folder.*
3. Open a command prompt and navigate to the BarracudaBackupBmrKit folder where you extracted the archive in Step 2.

4. Run the `create_bmr_iso.bat` script with the following commands that correspond to the ISO you want to create.

- 64-bit ISO *without* additional drivers: `create_bmr_iso.bat amd64 C:\winpe-workspace C:\bmr.iso`
- 64-bit ISO *with* additional drivers: `create_bmr_iso.bat amd64 C:\winpe-workspace C:\bmr.iso C:\drivers-for-bmr`
- 32-bit ISO *without* additional drivers: `create_bmr_iso.bat x86 C:\winpe-workspace C:\bmr.iso`
- 32-bit ISO *with* additional drivers: `create_bmr_iso.bat x86 C:\winpe-workspace C:\bmr.iso C:\drivers-for-bmr`

Note that it will take several minutes for the script to build the BMR ISO.

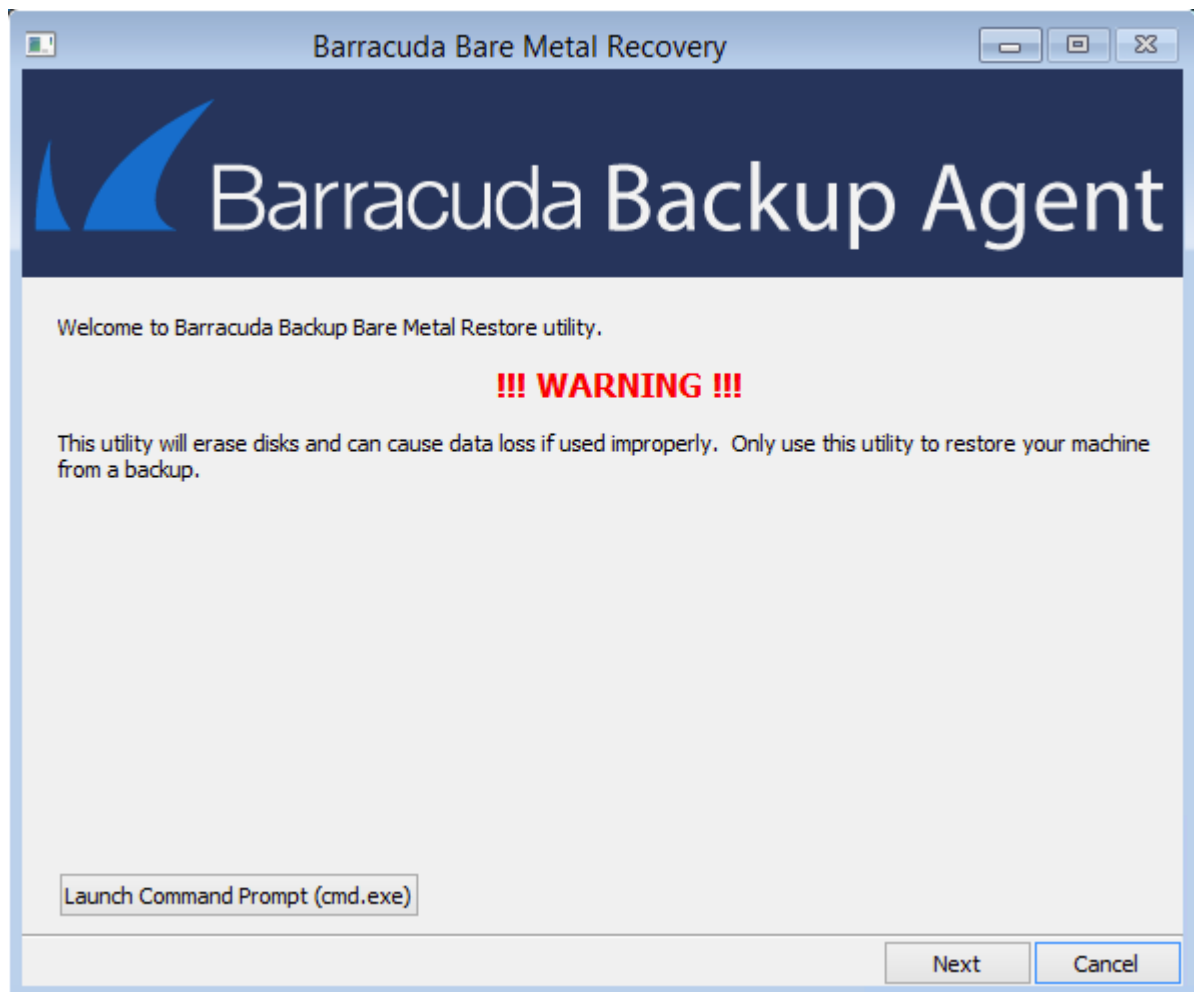
5. Delete the directory you specified as the workspace (e.g., `C:\winpe-workspace`).

Perform Bare Metal Recovery

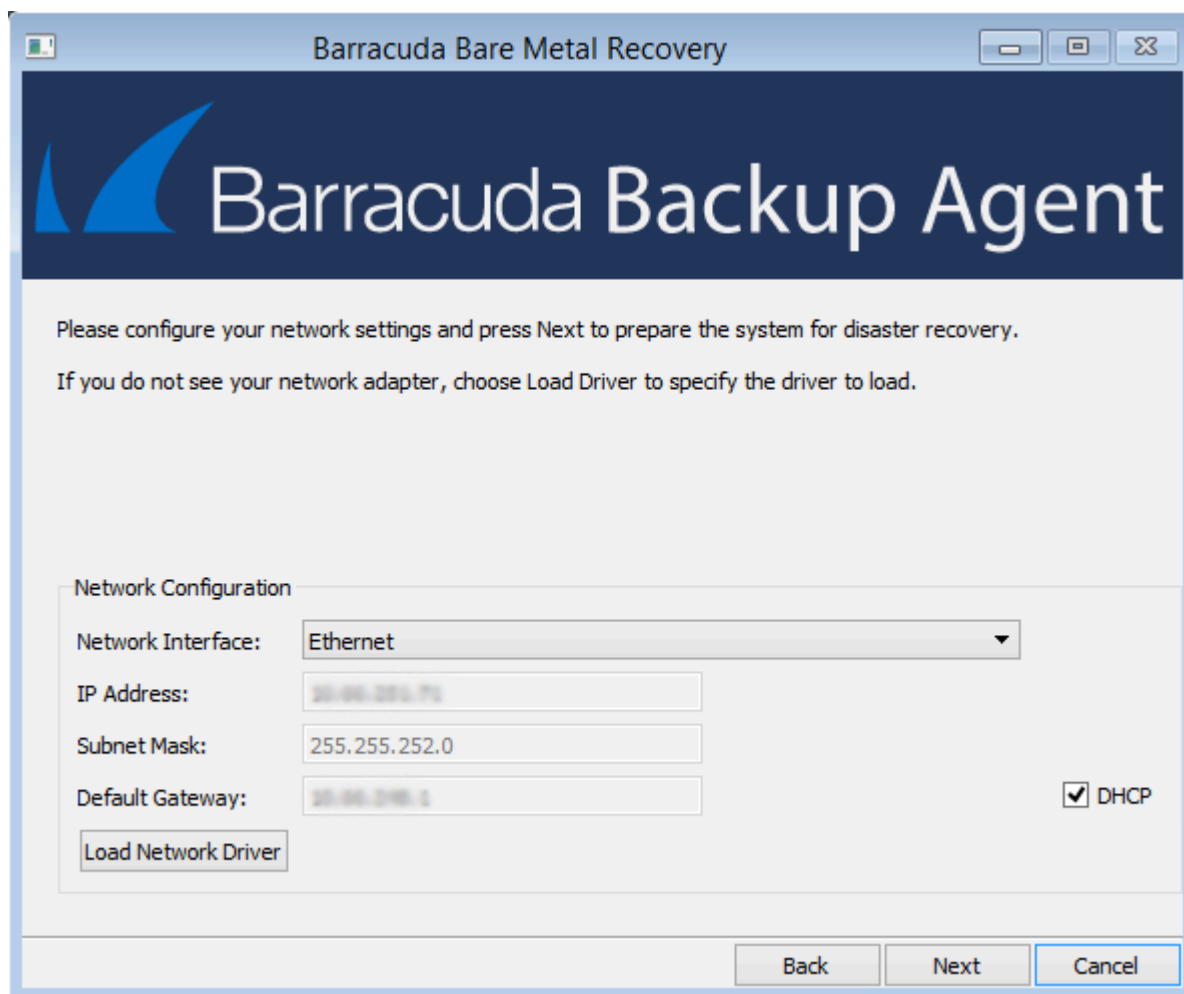
You must complete all of the steps described in the sections above, including downloading and installing Windows ADK and Windows PE add-on for ADK. If you are applying the BMR ISO to external media, the media must be formatted so that it is bootable by the target system.

To perform a bare metal recovery:

1. Use the Bare Metal Recovery ISO file you created above to boot the target system.
2. After the target system boots, the Bare Metal Restore Utility welcome/warning screen displays. Ensure that no data is present on the target system, and click **Next**.

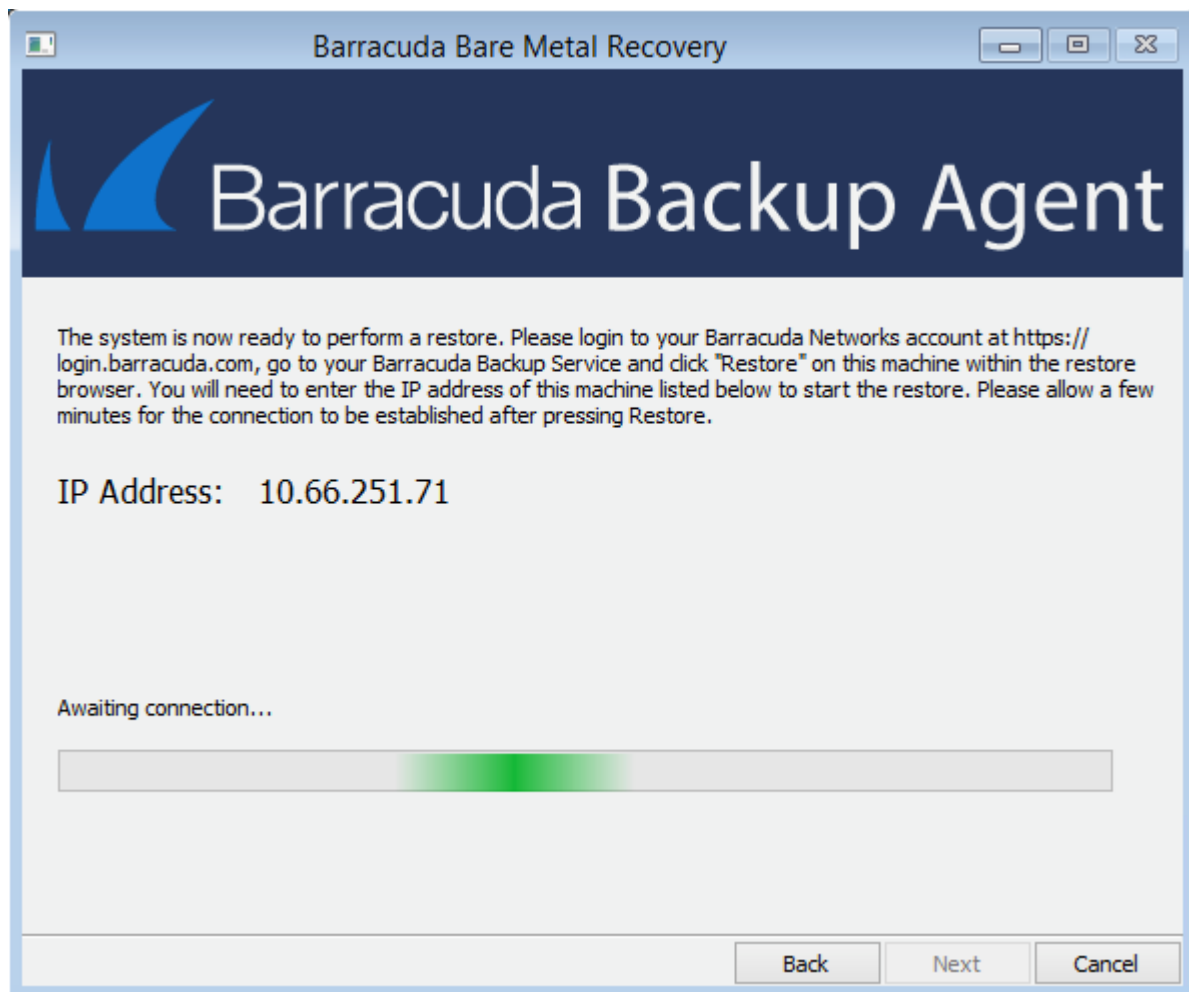


3. On the **Network Configuration** screen, choose a **Network Interface**, and specify an **IP Address**, **Subnet Mask**, and **Default Gateway**. Then click **Next**.

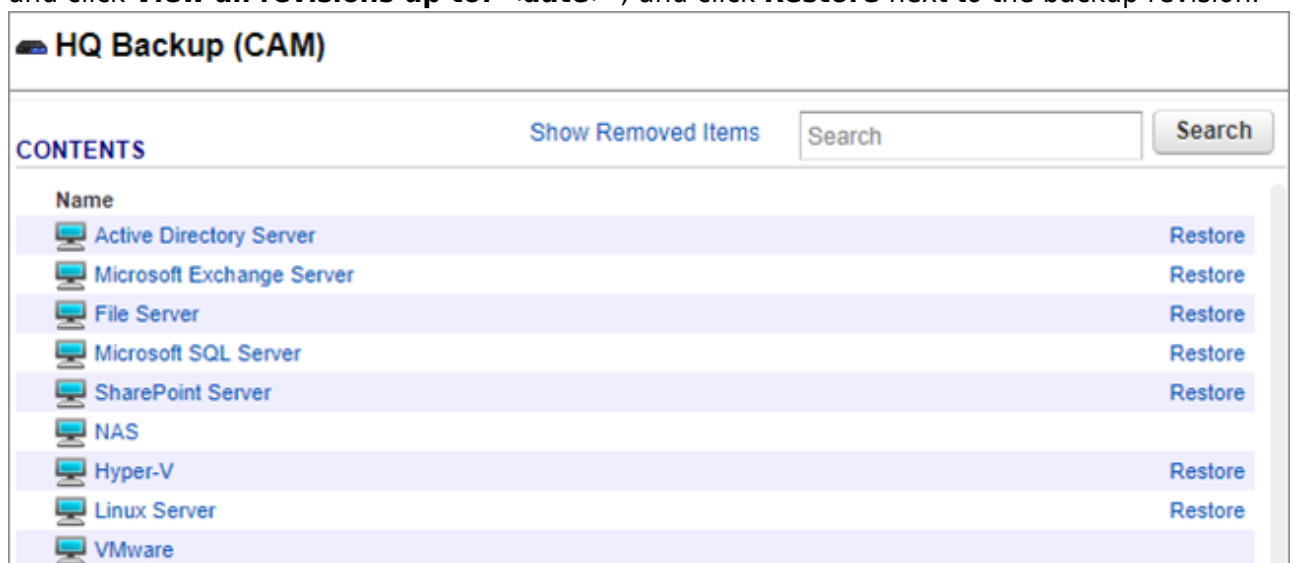


The screenshot shows a window titled "Barracuda Bare Metal Recovery". Inside, there's a header for "Barracuda Backup Agent". Below the header, instructions state: "Please configure your network settings and press Next to prepare the system for disaster recovery. If you do not see your network adapter, choose Load Driver to specify the driver to load." The "Network Configuration" section includes a dropdown for "Network Interface" set to "Ethernet", and input fields for "IP Address" (20.86.255.75), "Subnet Mask" (255.255.252.0), and "Default Gateway" (20.86.255.1). A checkbox for "DHCP" is checked. A "Load Network Driver" button is also present. At the bottom are "Back", "Next", and "Cancel" buttons.

4. The **Awaiting connection** screen displays.

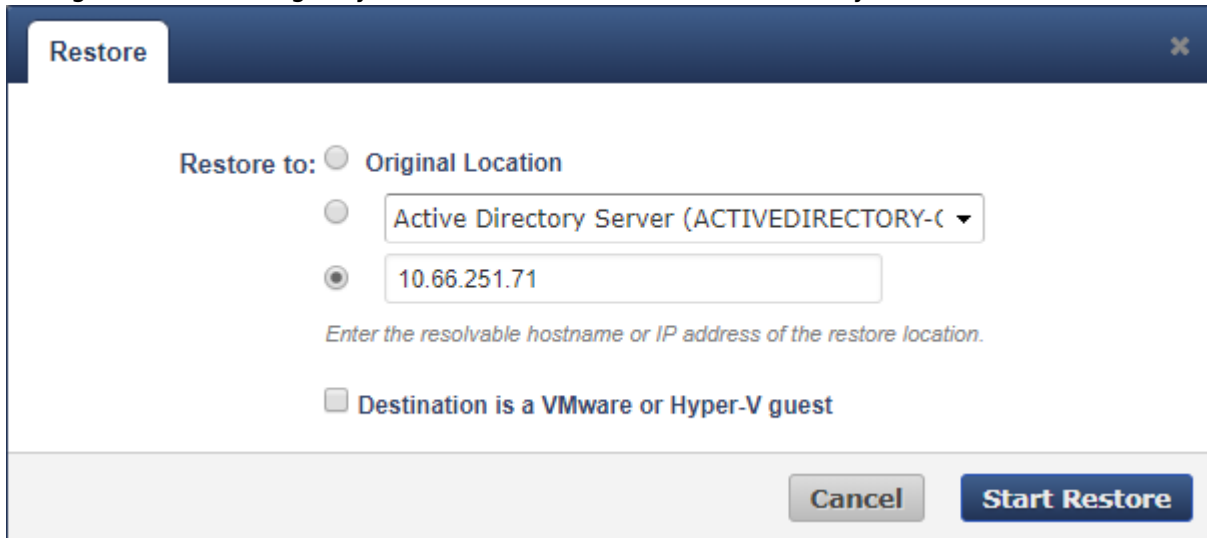


5. Log into the Barracuda Backup local or cloud interface, and go to the **Restore > Restore Browser** page.
6. Click **Restore** to the right of the Microsoft Windows system you want to restore. If you want to restore to a different backup revision of the system other than the latest, click on the system, and click **View all revisions up to: <date>**, and click **Restore** next to the backup revision.



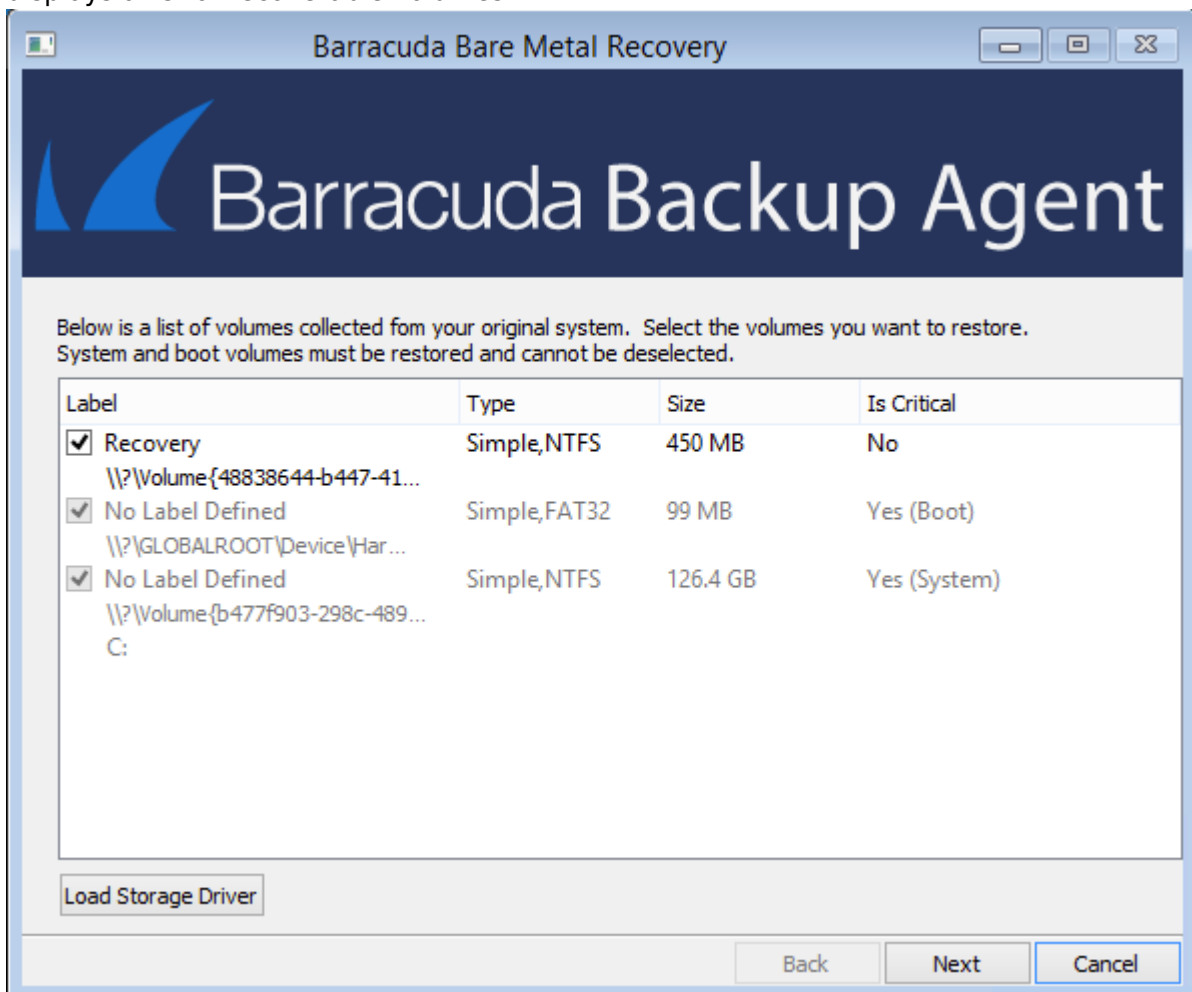
7. In the **Restore** dialog box, select **Other Hostname or IP Address**, and type the IP Address

configured for the target system in the Bare Metal Restore Utility.



The 'Restore' dialog box shows options for where to restore the data. The 'Restore to:' section has three radio buttons: 'Original Location' (selected), 'Active Directory Server (ACTIVEDIRECTORY-C...', and '10.66.251.71'. Below these is a text input field containing '10.66.251.71' and a note: 'Enter the resolvable hostname or IP address of the restore location.' There is also a checkbox for 'Destination is a VMware or Hyper-V guest' which is unchecked. At the bottom right are 'Cancel' and 'Start Restore' buttons.

8. Click **Start Restore**.
9. After several minutes, the target system receives the restore job from Barracuda Backup and displays a list of recoverable volumes.



The 'Barracuda Bare Metal Recovery' window shows the 'Barracuda Backup Agent' interface. It displays a list of volumes collected from the original system. The list has columns for Label, Type, Size, and Is Critical. Three volumes are listed, all with checkboxes checked. Below the list is a 'Load Storage Driver' button. At the bottom are 'Back', 'Next', and 'Cancel' buttons.

Label	Type	Size	Is Critical
<input checked="" type="checkbox"/> Recovery \\?\Volume{48838644-b447-41...	Simple,NTFS	450 MB	No
<input checked="" type="checkbox"/> No Label Defined \\?\GLOBALROOT\Device\Har...	Simple,FAT32	99 MB	Yes (Boot)
<input checked="" type="checkbox"/> No Label Defined \\?\Volume{b477f903-298c-489... C:	Simple,NTFS	126.4 GB	Yes (System)

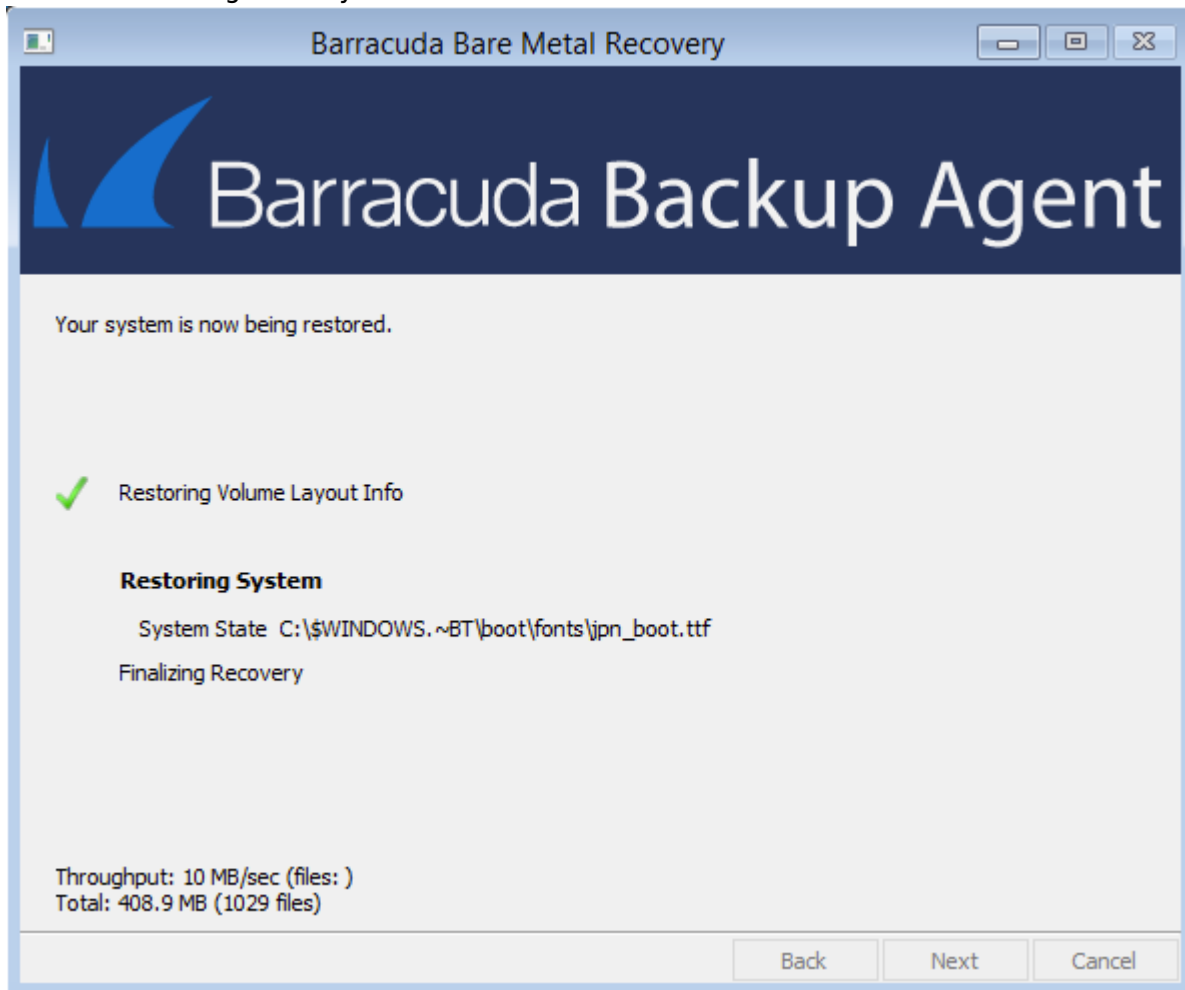
10. Select the volumes you want to recover.

You cannot deselect boot and system volumes because they are required for the bare

metal restore.

If you choose to restore to a server that does not have identical volumes as the original machine the data was backed up from, the Barracuda Backup appliance will still attempt to restore all drives even though you may have only selected one of these on the Bare Metal Restore screen. The restore will throw errors for these missing drives, but will restore the drives that exist on the target machine.

11. Click **Next** to begin the system restore.



12. When the restore is complete, click **OK** in the **Confirmation** dialog box.
13. Remove the Bare Metal Recovery ISO and reboot the system.

If the server being restored was an Exchange, SQL, or Hyper-V server, the application is installed after the bare metal restore; hohe databases or guest virtual machines (VMs) must be restored separately.

Figures

1. AgentWarning.png
2. Start.png
3. IP_Address.png
4. restore_link.png
5. restore_dialog.png
6. Select.png
7. Confirm.png

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