

## CHAPTER 10- Bare Metal Recovery

The Bare Metal Recovery (herein called BMR) is a Lina module used to recover a complete Windows agent, including system, applications, and data. The BMR feature simply requires setting a specific protection policy at backup time to ensure that all necessary files are backed up and available should you need to perform a recovery of your machine. Note that such policy will prevent any customization on the agent side.

Bare Metal Recovery can also be used to back up Microsoft SQL servers. The backup frequency of a MS SQL Server depends on the Recovery Point Objective (RPO) value. Bootstrap files are saved once an hour, regardless of the RPO value.

### Architecture

The BMR architecture includes (Figure 58):

- **WinPE** Simplified operating system serving as an emergency start-up platform that can be used to boot on the new workstation.
- **BMR restore wizard** Wizard allowing you to choose the original agent and image to restore from the Lina server.
- **BMR disk layout editor** Graphical interface displaying the original disk/partition configuration, and the target disk/partition. The interface lets you change the original configuration to adapt to the new workstation.
- **Lina agent** Embedded agent used to restore data from the Lina server to the new workstation.

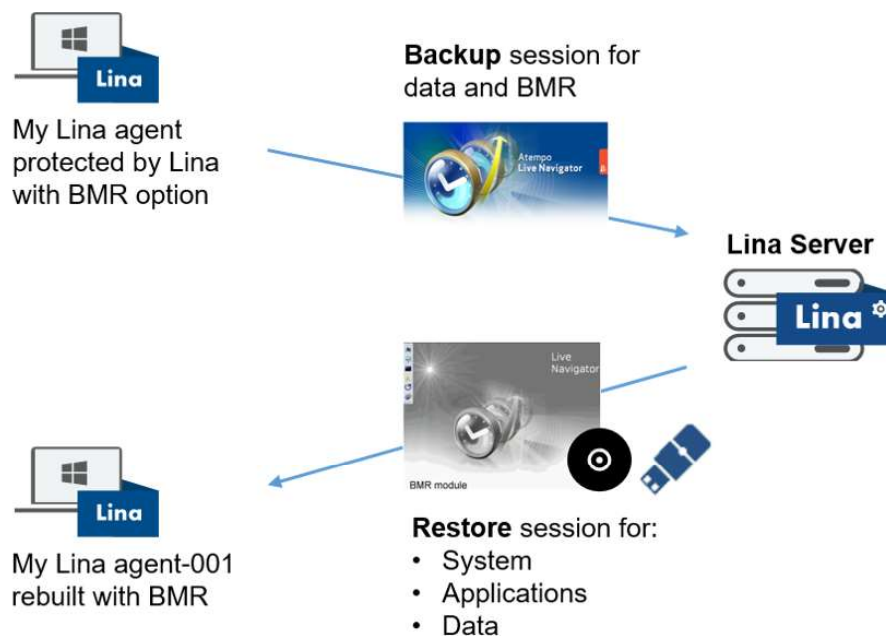


Figure 58: Diagram visualizing the BMR restore and backup process

## Prerequisites to the BMR Process

- The BMR module can be used on bootable media such as CDs, DVDs, or USB flash drives. The bootable file delivered with the product should be kept in a convenient location and readily available in the event of a BMR operation.
- The firmware between the machine you backed up and the machine you are restoring to must be identical (i.e., BIOS, EFI, UEFI).

If you perform a cross-restore on different platforms (from a physical machine to a virtual machine), you may have a restart issue. You will then need to reboot manually.

Before starting the BMR process, you must:

1. Check the **Protect the system with BMR** option in the Protection scheme.
2. Obtain a Cross restore token. For more information, see [Cross Restore Token](#).

## Defining Files to Ignore

You can specify file patterns to be ignored from the Lina Agent protection.

### Example:


The file `movie001.avi` is found in the folder `D:\Movie Files` containing only files with the extension `.avi`.

The file is protected only if you:

1. Protected `D:\Movie Files\movie001.avi` in [Define Protection on a File or Folder](#).
2. Excluded all files with the extension `.avi` in the folder `D:\Movie Files`.

### To exclude file patterns from protection

**Important:** If Bitlocker encryption is supported you must use new disks or you have to format the existing disks before proceeding with the restore.

1. Right-click the Lina agent icon  in the task bar and select **Manage the settings**.
2. Under **File types excluded from the backup**, click **+**.
3. By default, the BMR performs a workstation recovery that applies rules to the system (`/C` or `/D`). To apply rules that exclude certain types of files, enter a more detailed path, for example `/*/*.extension` to `exclude`.
4. Click **OK** to confirm the creation of your exclusion. The **Check** column shows whether the Lina agent validates the syntax you entered. See [Check Status](#) for details.

## Workstation Recovery

### Bare Metal Recovery launch

1. Boot the Atempo Lina BMR disk or the ISO image delivered with the product.
2. Select the Keyboard to use.
3. Select the Timezone to ensure a match with the Lina settings for instance analysis. The welcome screen of the BMR module is displayed ([Figure 59](#)).

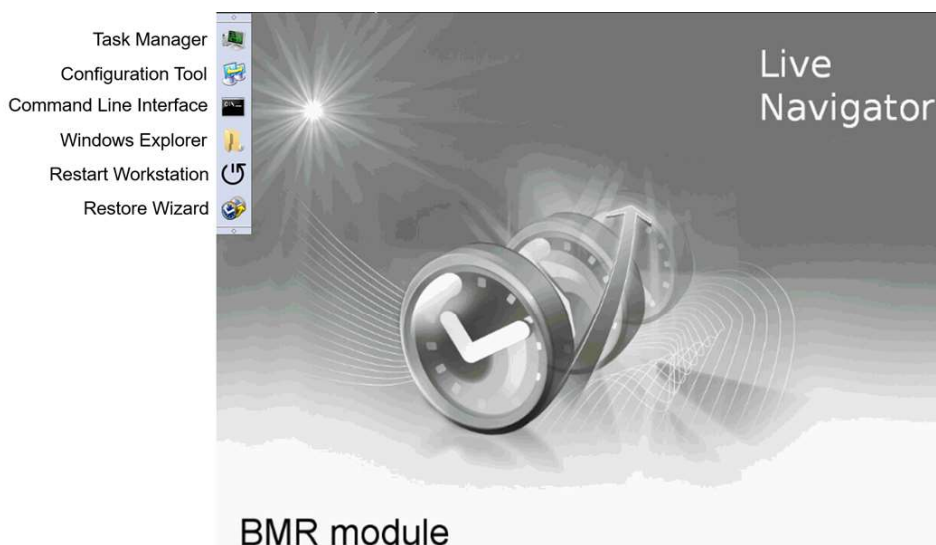


Figure 59: Welcome screen to set up the BMR module

4. The Lina Restore Wizard displays. Enter the fully qualified name of the workstation server or the network address in the **Select Server** window.
5. Enter the token. See [Cross Restore Token](#) for more details. The list only displays workstations available for disaster recovery (Figure 60).
6. Select the workstation to restore.

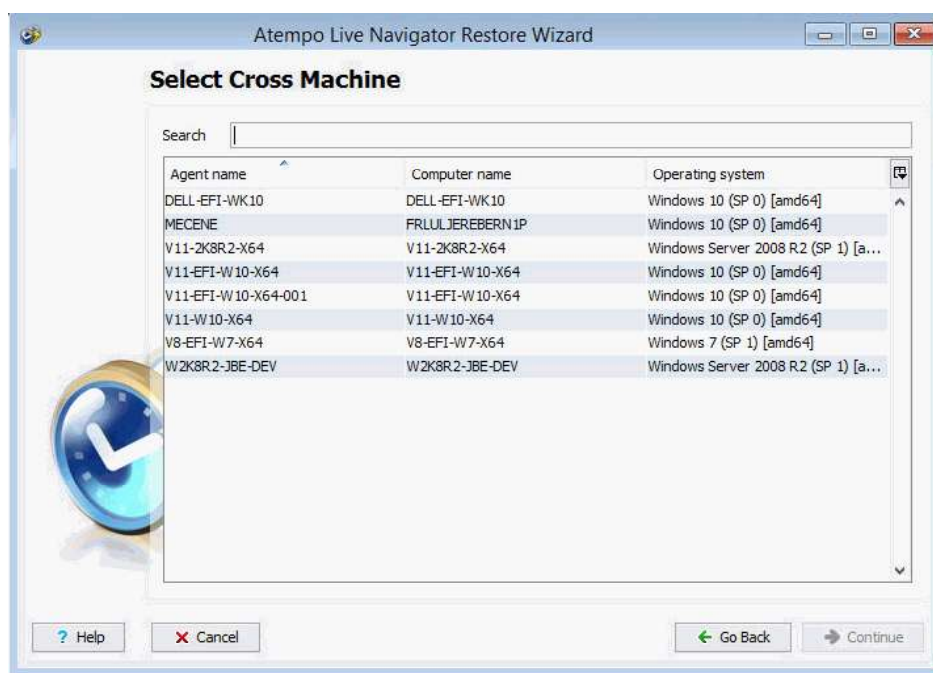


Figure 60: Workstations available for disaster recovery

7. In the **Available Versions** interface, choose one of the following options (Figure 61):
  - Select the version to restore.
 Or

- Select the **Get latest version to see updated protection configuration and layout** option to restore the latest bootstrap and files. If you choose this option, you cannot select the version manually.

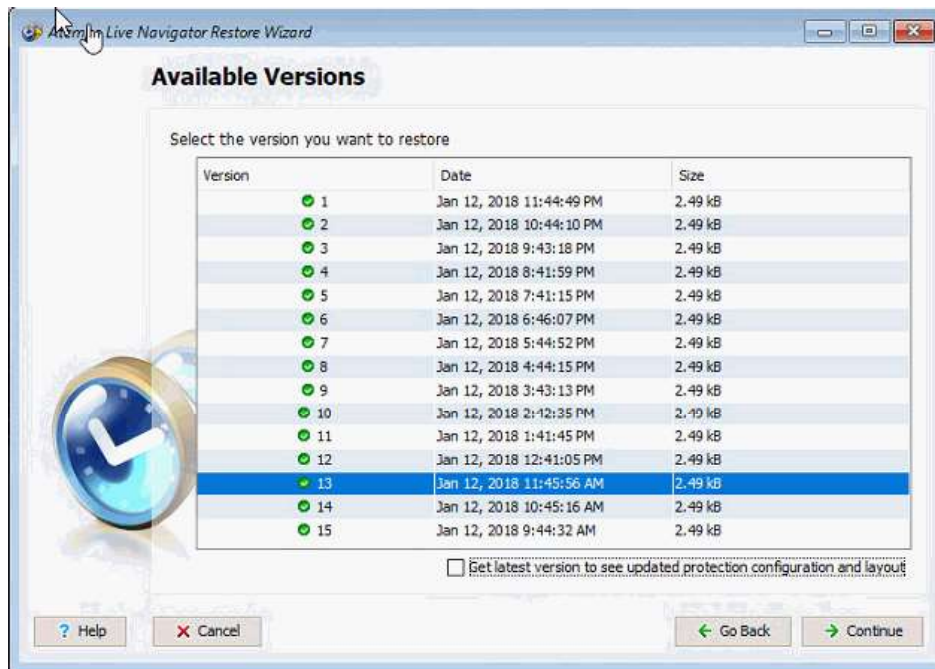


Figure 61: Available versions to restore

**Note:** An error message displays if the saved machine's firmware is different from the current one. In that case, the workstation recovery is not possible.

The Disk Layout Editor is displayed (Figure 62). The disks already on the restored workstation are marked in green.

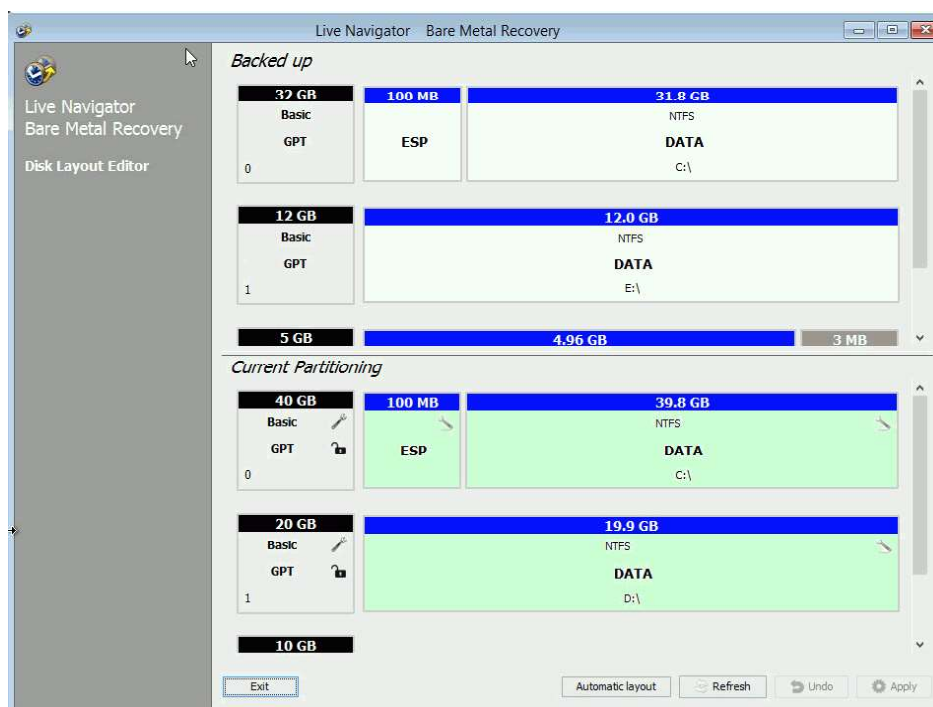


Figure 62: Disk Layout Editor

## Recover Selection

Once you have configured the BMR, you then need to select the data (partitions or disk) you want to restore.

### To select the data to restore

1. Use the Disk Layout Editor screen to select the disk (in black) and/or the partition of the disk (in blue) you want to restore.

The Disk Layout Editor is made of two parts:

**Backed up.** This area does not correspond to backed up only data. It corresponds to the data layout.

Pass your mouse over the area to display the partition detailed information:

- Partition ID
- Size
- Type
- File system
- FS Name

**Resulting Partitioning.** It corresponds to the area to which you copy the partition you want to restore

from the **Backed up** area. You can modify (  ), delete, or create (  ) a partition manually.

2. Use the right-click menu to copy/paste the disk/partition from the **Backed up** area to the **Resulting partitioning** area. The copied disk/partition is displayed in green (Figure 63).

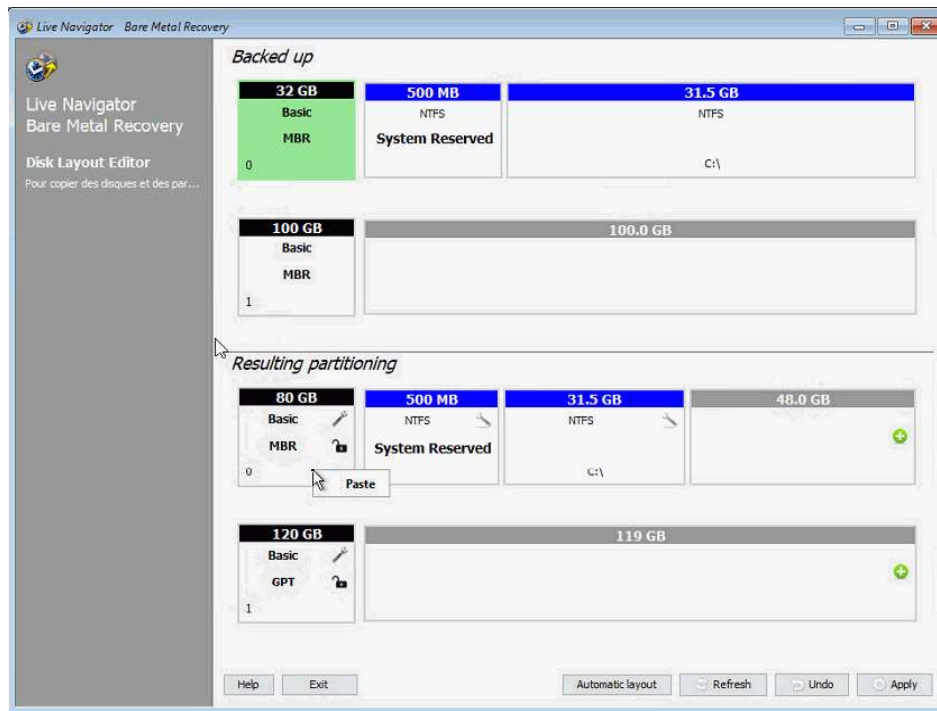



Figure 63: Disk/partition selection in the Disk Layout Editor

If the target disk cannot fit with the given volume sizes, the volumes are automatically resized proportionally to their minimum required space.


If the target disk size is larger, the size of volumes is automatically portioned proportionally to the actual size.

If you want to select and manage individually the partitions you want to restore, you need first to initialize the disk and then select the volume individually.

*To initialize the disk.*

- Click . The Disk Editor displays.
  - Select the partition type (either MBR or GPT).
  - Click **Apply**.
  - Follow the same steps as in the procedure [To modify or delete a partition](#).
3. Click **Refresh** to update the **Resulting partitioning** view.

**To modify or delete a partition.**

- Click  on the right top corner of the partition. The Partition Editor displays.
- Select the **Delete** check box to delete the partition.
- Set the Files system size.
- The available size depends on the available disk size.
- Click **Apply**.

**Note:** You cannot restore several times the same partition.

4. Click **Apply** to start the restore process. The BMR Status screen displays additional information on the restore process (Figure 64). The restore duration depends on the amount of data to restore.

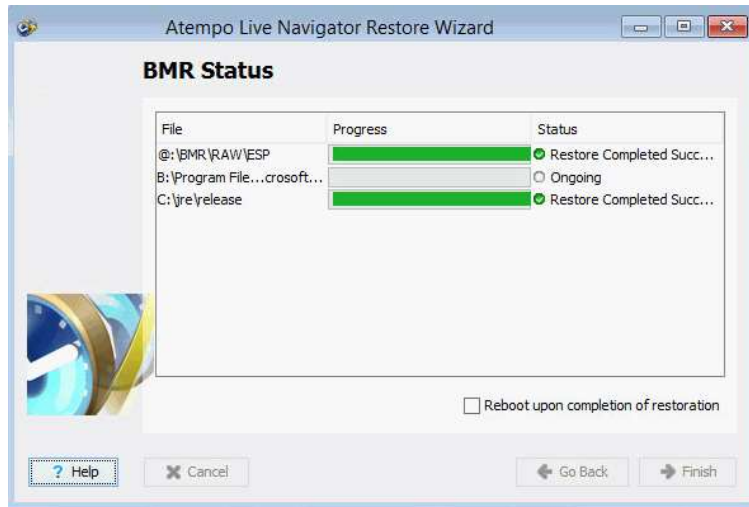


Figure 64: BMR status overview

- (Optional) To automatically reboot the workstation after the restore, select **Reboot upon completion of restore**.

## Additional Steps after Data Recovery

Once the restore process is completed, a new laptop is identified as a new agent in the Lina server.

- If the Lina server is configured to be auto created, the new agent name is by default `agentname-00n`.
- If the Lina server is not configured to be auto created, you need to rename the original agent (e.g., `agentname-old`) and create the new one.