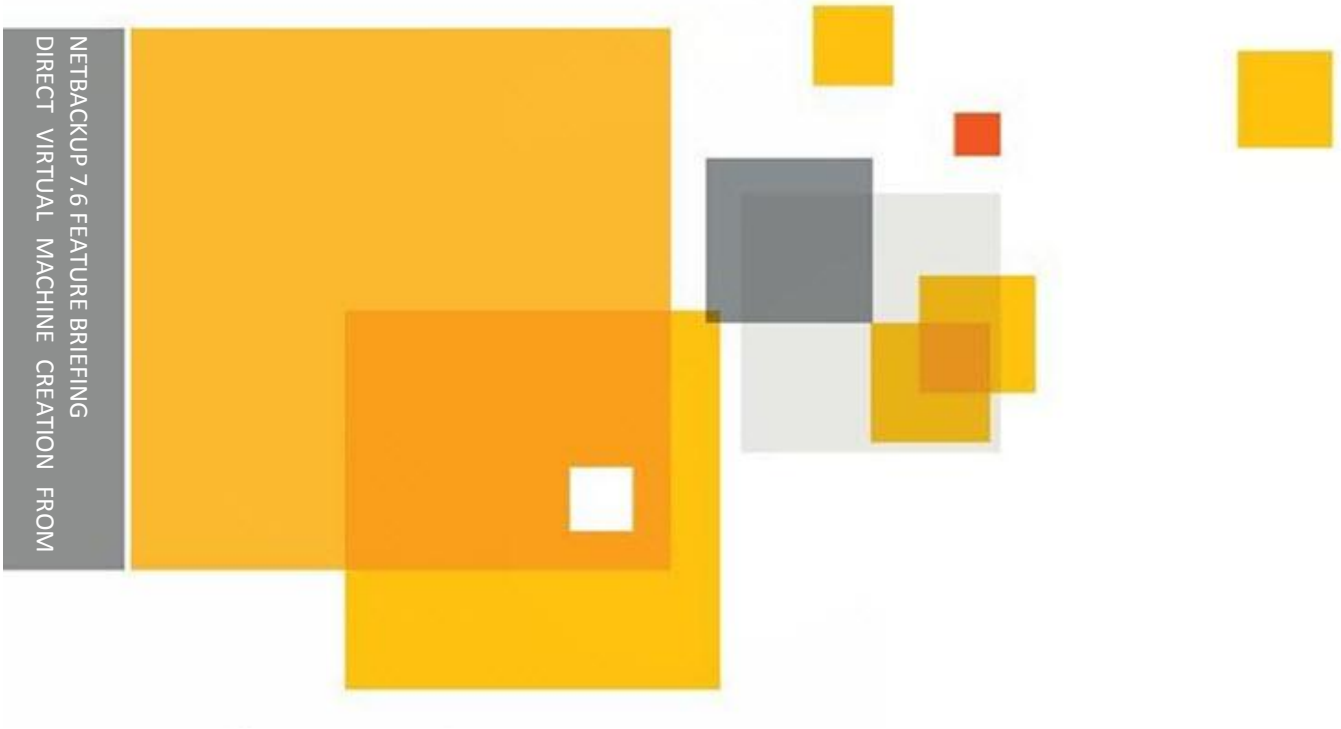

NetBackup 7.6 Feature Briefing

Direct virtual machine creation from backup with BMR

Version number: 1.0

Issue date: 5th November 2013

This document describes a feature introduced in NetBackup7.6 and available in this and higher releases.

If you have any feedback or questions about this document please email them to IMG-TPM-Requests@symantec.com stating the document title.

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Feature Description

The last few years have seen a significant growth in the adoption of virtualized servers in data centers with many organizations converting to purely virtual environments. Even organizations that use physical servers in their production environments are starting to see the benefits of using virtualization in their disaster recovery and test and development environments. NetBackup's Bare Metal Restore (BMR) feature has always provided an effective mechanism for migrating between physical and virtual environments by recovering backups of physical servers to virtual servers. In NetBackup 7.6 this "physical to virtual" recovery model has been greatly simplified allowing customers to achieve rapid physical to virtual migration and disaster recovery to virtual environments for Windows servers in both local and remote (disaster recovery) sites.

Business Value

The Bare Metal Restore "physical to virtual" recovery capability allows customers to recover backups of physical Windows servers to VMware virtual machines. Using VMware virtualization in a disaster recovery data center can significantly reduce both the capital and operational costs associated with maintaining a disaster recovery position by allowing a "lights out" facility to be rapidly spun up in the event of a site loss.

Bare Metal Restore "physical to virtual" can be combined the NetBackup Auto Image Replication feature, allowing backup of physical servers to be replicated to a remote data center. VMware ESX servers at this disaster recovery facility can be left powered off until required and then powered up. Once the ESX servers are available the replicated backups of the physical servers at the product site can be quickly restored to virtual machines running on the ESX servers rather than needing to deploy physical servers.

For disaster recovery testing purposes the virtual machines created during the recovery process can simply be deleted once the testing activities are complete.

A similar approach can be used in test and development environments with backups from physical production servers being used to create virtual test servers.

Underlying Principles

The BMR physical to virtual recovery process uses the VMware proxy server to provide a "virtual instance converter" which creates a VMDK for the new virtual machine and restores the BMR backup of the physical machine to that VMDK.

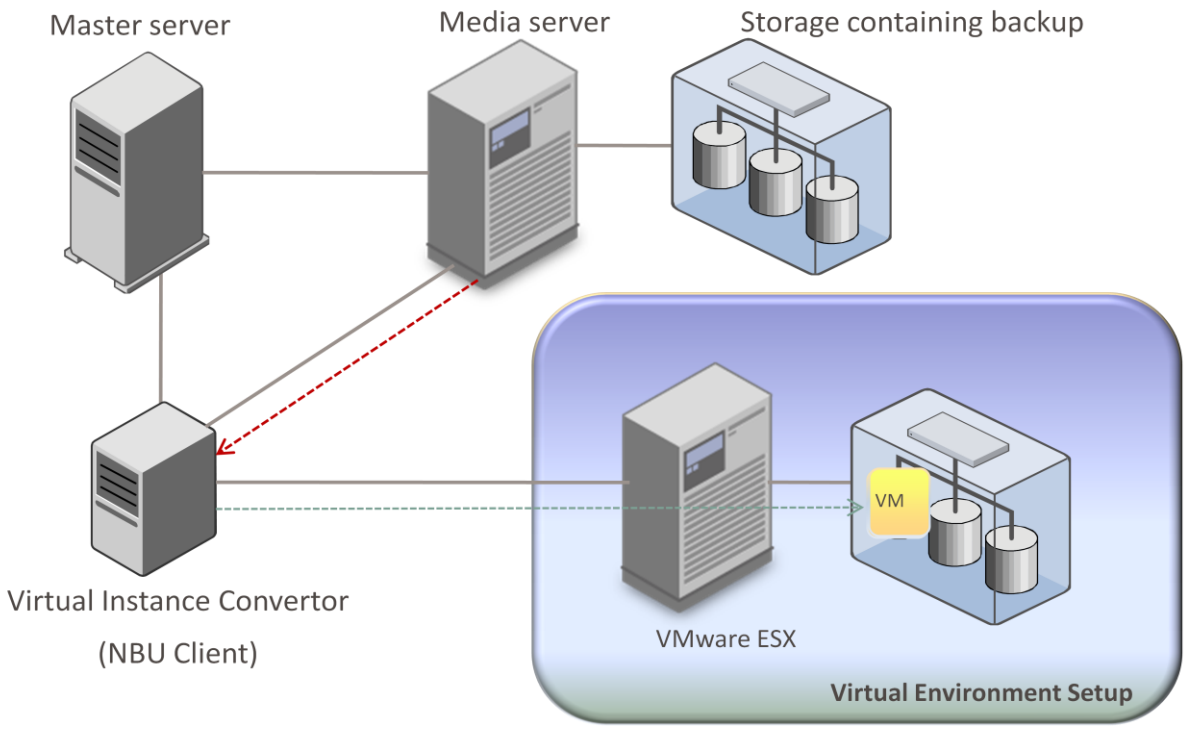

Figure 1 - physical to virtual conversion process

Figure 1 above shows the key components used during the recovery process. An empty virtual machine container is created on the ESX server and presented to Virtual Instance Converter which formats the virtual machine's disks and restores the backup from the physical machine to them. The virtual machine is then automatically started and made available to users.

Guided Tour

The conversion and recovery process can either be driven from the command line, using the `nbrestorevm` command, or from the Bare Metal Restore Management section of the master server administration interface. Using the command line allows the backup administrator to script and schedule "bulk" conversions of virtual machines or disaster recovery testing purpose.

This “guided tour” provides examples from the administration interface “GUI driven” conversion method.

Clients suitable for conversion to virtual machines are displayed under “VM Conversion Clients” (see Figure 2) and conversion can be initiated by right clicking on the required client and selecting the option “Convert to Virtual Machine”.

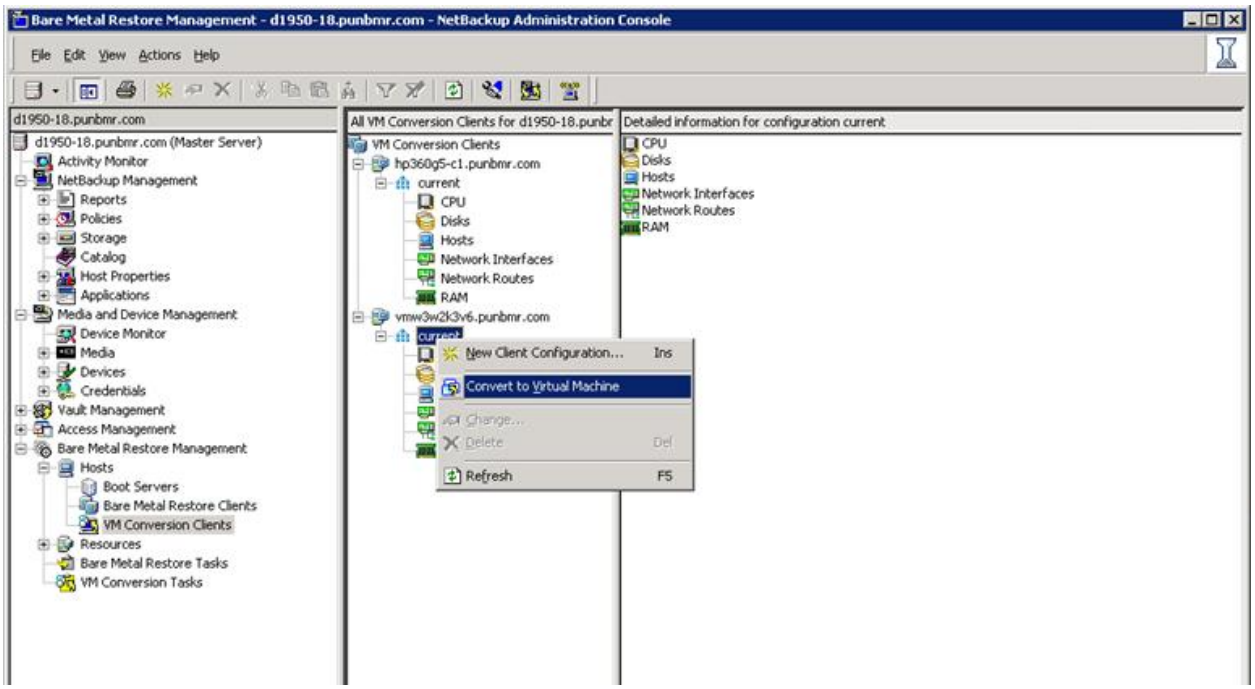

Figure 2 – VM conversion clients

One initiated the conversion wizard prompts for a number of inputs including the name of the NetBackup Recovery Host

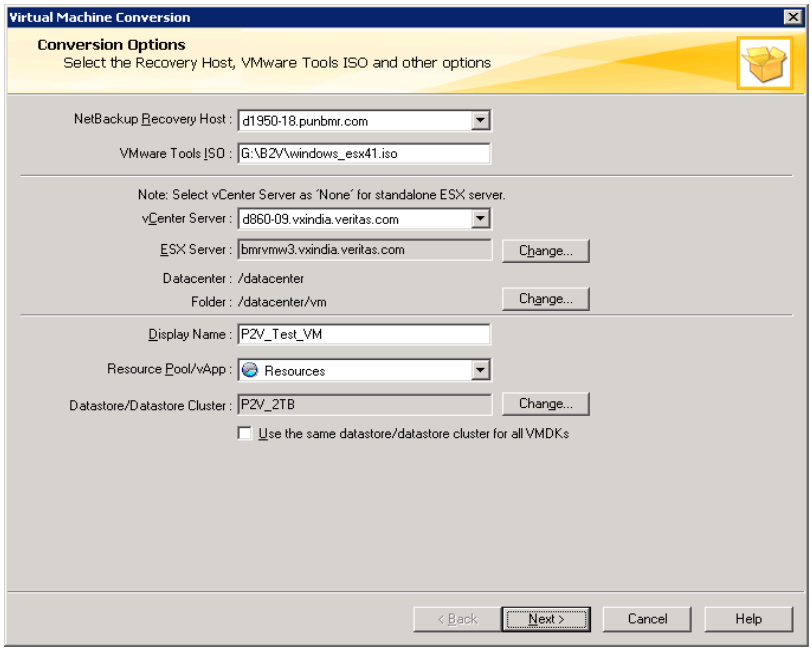

Figure 3 – Conversion Options

Once this information has been enter the next screen prompts for restore options including whether any existing VM should be overwritten and whether the new VM should automatically power on after recovery (Figure 4)

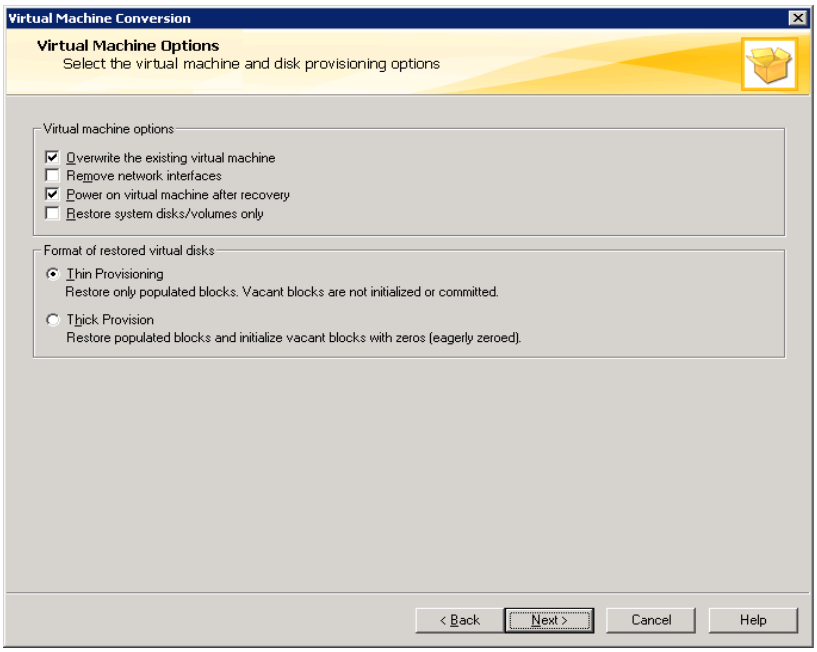

Figure 4 – Virtual Machine Options

The next screen prompts for the datastore where the VMDK file will be created (Figure 5):

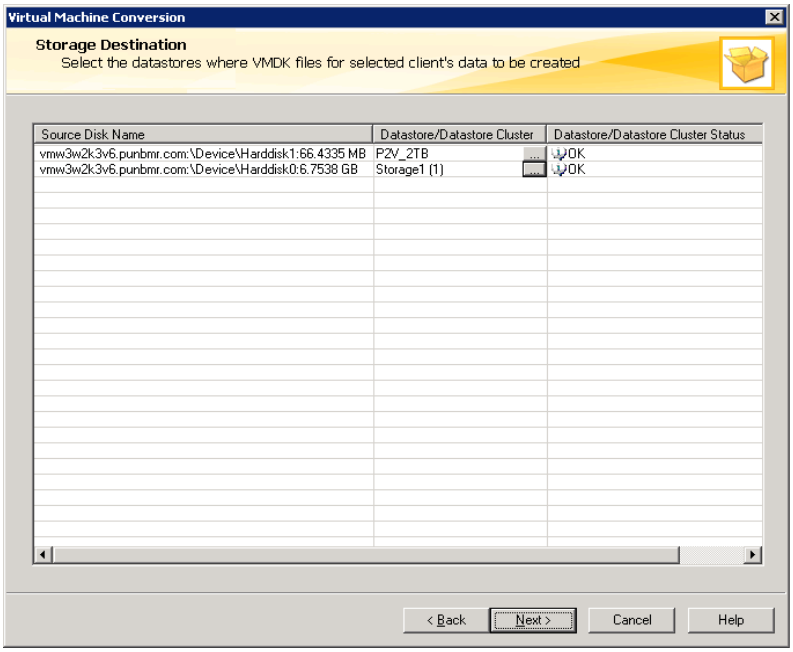

Figure 5 - Storage locations

Finally the network to be used is selected (Figure 6):

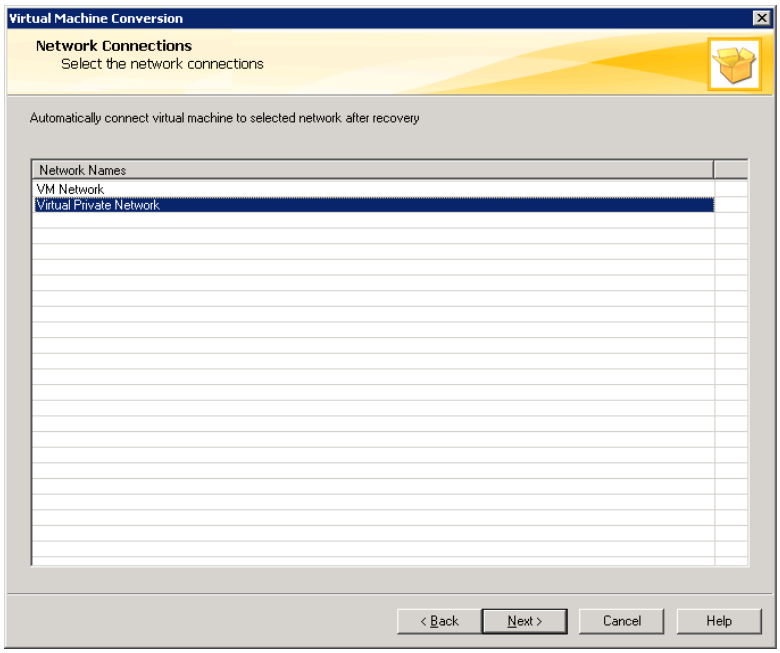

Figure 6- Network connections

Once all the required information has been enter a summary screen is provided with the ability to run a pre-conversion check (Figure 7).

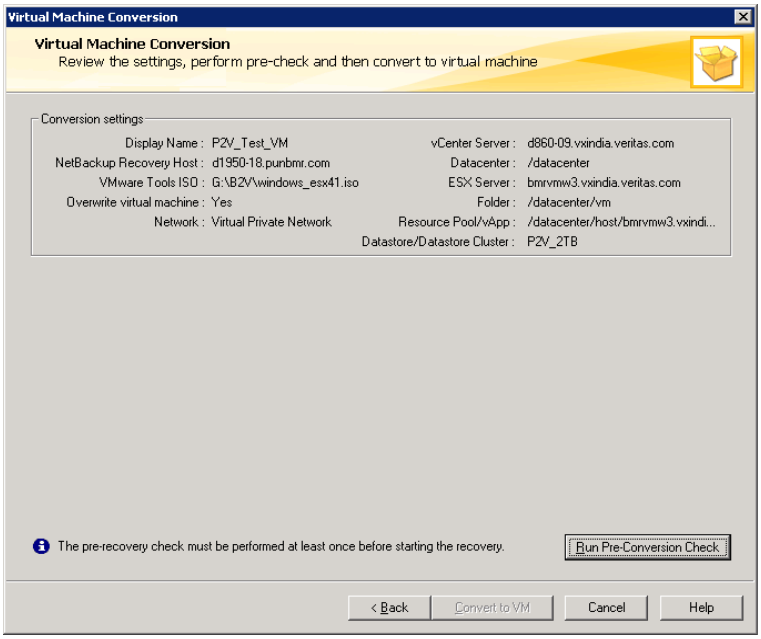

Figure 7 - Conversion settings summary

The pre-conversion check validates the selected options and allows the conversion to be initiated (Figure 8).

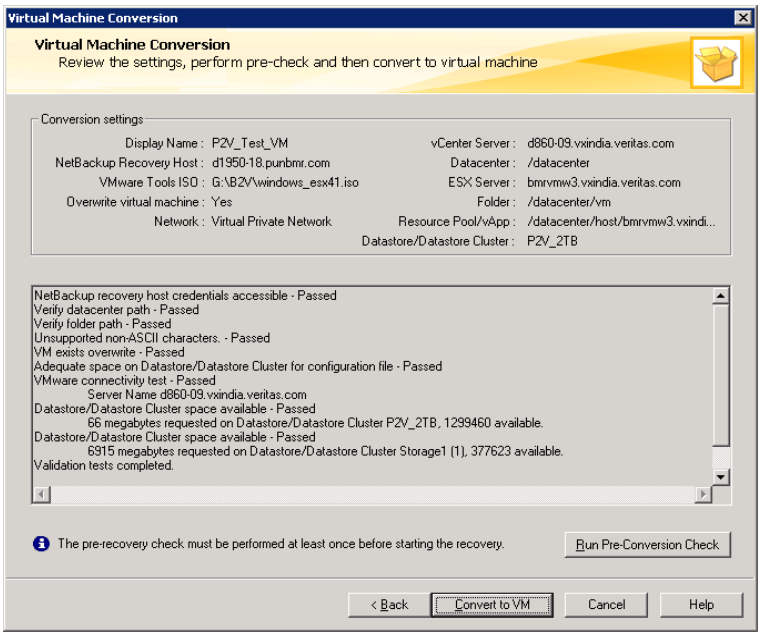

Figure 8 - Pre-conversion check output

If the pre-conversion check is successful the conversion can be started by hitting “Convert to VM”, the progress of the conversion can be seen through the VM conversion tasks tab (Figure 9) and via the NetBackup activity monitor.

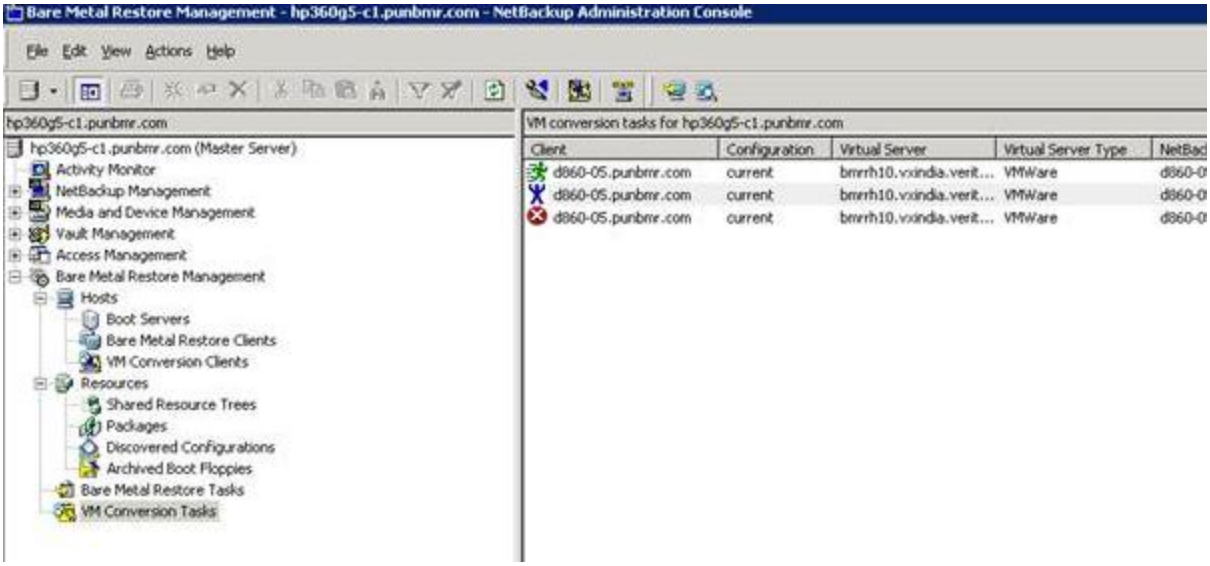

Figure 9 – Conversion progress displayed through VM Conversion Tasks

Licensing and support considerations

No special licenses are required for the BMR Physical to Virtual recovery feature. However a full NetBackup VMware backup configuration is required for the recovery process. The server that acts as the Virtual Instance Converter must be a Windows server and must have access to a copy of the VMware tools ISO from the ESX server.

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