Recovery Assurance
with Cristie Recovery Software

cristie software TBMR for TSM

Bare Machine Recovery for TSM

Product Release History

For Windows

April 2016

Version 7.3.2

Cristie Software Ltd.
New Mill
Chestnut Lane
Stroud GL5 3EH
United Kingdom
Tel:+44(0)1453 847000
Fax:+44(0)1453 847001
support@cristie.com

Cristie Data Products GmbH
Nordring 53-55

63843 Niedernberg
Germany
Tel: +49 (0) 60 28/97 95-0
Fax: +49 (0) 60 28/97 95 7-99
cbmr@cristie.de

Cristie Nordic AB
Knarrarnäsgatan 7
164 40 Kista
Sweden
Tel:+46(0)8 718 43 30
cbmr@cristie.se

IBM Tivoli Storage Manager (TSM), *AIX* and *TIVOLI* are trademarks of the IBM Corporation.

IBM Spectrum Protect is a trademark of the IBM Corporation.

IBM Virtual I/O Server (VIOS) is a trademark of the IBM Corporation.

NetWorker and *Avamar* are trademarks of the EMC Corporation.

vSphere, *vCenter* and *vCloud* are trademarks of VMware Inc.

Hyper-V is a trademark of Microsoft Corporation.

Azure is a trademark of Microsoft Corporation.

Amazon Web Services (AWS) and *Amazon Elastic Compute Cloud (EC2)* are trademarks of Amazon.com, Inc.

CloneManager® is a registered trademark of Cristie Software Ltd..

Cristie Management Console (CMC), PC-BaX, UBax, Cristie Connect, Cristie Storage Manager (CSM), SDB, ABMR (Bare Machine Recovery for EMC Avamar), NBMR (Bare Machine Recovery for EMC NetWorker), TBMR (Bare Machine Recovery for Spectrum Protect/TSM), CBMR (Cristie Bare Machine Recovery), Recovery Simulator (RS) and CRISP (Cristie Recovery ISO Producer) are all trademarks of Cristie Software Ltd.

Contents

1 TBMR (Bare Machine Recovery for TSM) Readme

Welcome to the TBMR™ software. This file contains late breaking information. If it conflicts with any information in other printed documents supplied with the product, this should be deemed as more accurate.

It contains the following sections:

What's new?

Overview

Current Limitations

Requirements

Known Issues

What's new?

Select product version to see what's new:

Version	Release Date
7.3.2	18 April 2016
7.3	22 February 2016
7.2.6	21 December 2015
7.2.5	9 November 2015
7.2.4	26 October 2015
7.2.3	25 September 2015
7.2.2	18 May 2015
7.2.1	1 December 2014
7.1.3	4 June 2014
7.1.2	26 March 2014
7.1	17 January 2014
6.5.2	8 November 2013
6.5	9 April 2013
6.4.2	31 October 2012
6.4.1	2 May 2012
6.3.3	30 May 2011
6.3.2	3 October 2010
6.3	15 July 2010
6.2.2	18 November 2009
6.2.1	31 July 2009
6.1.2	3 April 2009
6.1.1	13 March 2009
5.3.2	18 July 2008

Overview

TBMR allows quick recovery of a server or workstation running Microsoft Windows desktop Vista, 7, 8.1, 10 and Server 2008, 2008 R2, 2012 or 2012 R2 operating systems, in the unfortunate event of a system failure or human error. **Note TBMR supports recovery from IBM Tivoli Storage Manager (TSM) only.**

Current limitations

i) Backupset DR is not supported by TSM Clients versions 6.2.0.0 to 6.2.1.2 inclusive in combination with TSM servers 5.x.x.x. This is a TSM issue caused by a problem with version 5 servers when creating the backupset from a version 6 client backup. However, non-backupset DRs (i.e. file and image based) will work in this scenario.

ii) TSM offline backupset recovery is not supported in this release. However, online backupsets

are fully supported with the exception of the above note.

iii) Encrypted backups are not currently supported for Automated DR. Encrypted backups are fully supported in normal interactive DR.

iv) It is not possible to boot a Windows PE5 64-bit DR ISO on a physical or virtual system using a 32-bit EFI BIOS. A 64-bit EFI BIOS is required.

v) The Cristie Automated DR Answerfile Creator is only supported on Windows Vista/2008 or later.

vi) The PE Network Configurator tool has limited IPv6 support in the Windows PE2 DR environment. For example, the IPv6 address release/renew feature does not work. Also the IPv6 default gateway is not shown and also the sequence IPv6 DHCP change to static back to DHCP does not work. Note these features work correctly in the Windows PE5 version of the DR environment.

vii) Supports Cristie's Recovery Simulator product release 5.1 or later. In Spectrum Protect recovery mode only Windows 2008x64 or later is supported.

viii) TBMR does not support Windows 'Core' systems.

Requirements

i) Either Windows desktop Vista SP2, 7 SP1, Windows 8.1, Windows 10, server 2008 SP2, server 2008R2 SP1, server 2012 or server 2012 R2 is required. Both 32 and 64-bit versions are supported where relevant. Note the OS must meet minimum Service Pack levels where applicable.

ii) Requires administrator privilege to install and run.

iii) The TSM BA Client must be installed prior to the installation of TBMR. This is mandatory.

iv) On x86/x64 systems, TSM Client 5.5.0.6 or above is required to support open file management (which must be enabled). Select LVSA or VSS as appropriate.

v) At the time of release the TSM Server versions supported are 5.5.x.x to 7.1.3.0.

vi) At the time of release the TSM/Spectrum Protect Client versions supported are 5.5.x.x to 7.1.4.1.

vii) Windows 7 and 2008 R2 require a minimum TSM Client version of 6.1.2.0 or greater.

viii) Windows 2012 requires a minimum Client version of 6.4.0.0 or greater.

ix) Windows 8.1 and 2012 R2 require a minimum Client version of 6.4.0.14 or later.

x) Windows 10 requires a minimum Client version of 7.1.3.0 or later

xi) A minimum memory of 2 GB of RAM is required for booting the Windows PE2 and Windows PE5 recovery environments.

xii) About 50MB of free disk space is required to install the Agent. If installed, the CRISP package requires 14MB plus a further 870MB for the TBMR Windows PE2 fileset or 1GB for the TBMR Windows PE5 fileset. Note only one fileset needs to be installed at any given time and can be uninstalled when the ISO creation is complete.. The filesets are required to generate the Windows PE2 and Windows PE5 based recovery environments.

xiii) Upgrades from versions of TBMR earlier and including 6.x.x will need to be re-licensed. Please contact Cristie Support or use the Cristie Licensing Portal.

Known Issues

None.

1.1   7.3.2

New in 7.3.2

i) Substantially reduced the run-time duration of TBMRCfg.exe when creating the configuration on Windows 8.1/2012 or later OS's.

Bug Fixes

i) Fixed a problem where TBMRCfg.exe was not saving the system hard link information correctly on Windows 10.

ii) Fixed a problem where the suite installer would not install the product on Windows 2012.

iii) Fixed a problem where the Spectrum Protect feature of Cristie's Recovery Simulator (RS) product would not recover a Windows system that did not have a separate Microsoft Reserved partition. This required a fix to the TBMR Windows PE5 fileset and therefore a new DR ISO image must be created. If you do not use RS then no action is required.

1.2   7.3

New in 7.3

i) Added Windows 10 32 and 64-bit support (first release and the November 2015 TH2 update).

ii) Added a rental licensing option. The End User License has been amended to cover rental licenses.

iii) Only a single activation code is now required to license the product.

iv) The Windows PE5 DR environment now supports booting on both UEFI (64-bit only) and legacy BIOS's.

v) The Windows PE5 DR environment now supports UEFI(GPT) to BIOS(MBR) and BIOS to UEFI boot conversion on recovery. Note only UEFI 64-bit is supported.

vi) Added IPv6 support for accessing a TSM server.

vii) Added IPv6 support for mapping network shares in the Windows PE2 and Windows PE5 Network Configurator tool.

viii) It is now possible to change a recovered system's IPv6 IP address during an unattended DR sequence (only). It is not currently possible to do this interactively.

ix) The suite installer now checks for the installed service pack level and disallows installs on Windows OS's without the required minimum service pack.

x) The Microsoft C++ 2015 redistributables are now installed by the suite installer. This allows the pre-requisite to prompt the user for a reboot if required. In earlier versions the pre-requisite was installed silently sometimes causing a reboot without prompting the user first.

xi) The Microsoft Universal C Run Time (UCRT) KB2999226 update is now installed on the host system by the suite installer. This is a dependency of the Microsoft C++ 2015 redistributables above.

xii) All TBMR installers and file components are now digitally signed with a SHA-256 based digital certificate.

xiii) This release no longer supports Windows desktop XP x86/x64 and Windows server 2003 x86/x64 platforms.

xiv) Documentation updated for this release.

Bug Fixes

i) Windows XP 32-bit/64-bit were not recovered correctly. This has now been fixed.

ii) Fixed a problem where a warning for TSM APAR IC72446 in conjunction with HP OpenView continued to be included in the TBMRCfg log file even after upgrading the TSM client to 7.1.x later. This warning message is now suppressed if the client version is 7.1.x or later.

iii) Corrected some minor problems in the Automated DR Answer File Creator tool.

iv) A recovery of a Windows 2012R2 server containing a PVSCSI device would give a BSOD on boot. This was even though a driver for the device was installed during the recovery. This is now fixed.

1.3   7.2.6

New in 7.2.6

i) For the 7.2.6 suite release the Windows Agent remains at version 7.2.2.

ii) CDS updated to version for 4.5.4 for compatibility with RS 4.2.1.

iii) Windows PE2 and Windows PE5 filesets updated (used for creating the DR ISOs) for compatibility with RS 4.2.1.

iv) Documentation updated for this release.

Bug Fixes

None.

1.4   7.2.5

New in 7.2.5

i) Added support for IBM Spectrum Protect (version 7.1.3.0) client/server.

ii) Documentation updated for this release.

Bug Fixes

None.

1.5   7.2.4

New in 7.2.4

i) For the 7.2.4 suite release the Windows Agent remains at version 7.2.2.

ii) CDS updated to version for 4.5.3 for compatibility with RS 4.1.2.

iii) Windows PE2 and Windows PE5 filesets updated (used for creating the DR ISOs) for compatibility with RS 4.1.2.

iv) Added pending reboot detection to the suite installer. If a pending reboot is detected (because of recent system updates for example) a warning dialogue is displayed offering the user the opportunity to abort the install or continue.

v) The Microsoft C++ 2008 SP1 pre-requisites are now installed by the suite installer instead of

the stand-alone TBMR installer. This allows the pre-requisite to prompt the user for a reboot if required. In earlier versions the pre-requisite was installed silently sometimes causing a reboot without prompting the user first

vi) Documentation updated for this release.

Bug Fixes

None.

1.6   7.2.3

This version was a fileset (i.e. DR ISO) only release only for compatibility with RS 4.1.1.

1.7   7.2.2

New in 7.2.2

i) Added support for TSM client version 7.1.2.0.

i) Microsoft Security Update KB2918614 (issued August 2014) no longer prevents TBMR and CDS upgrading (mostly observed on Windows 2003).

ii) Enhanced the installer to show a meaningful warning message during installation on a system that already contains an expired trial license. As a result the initial run of TBMRCfg fails. It showed a plain error number before.

iii) Enhanced the Crisp command line program to be able to add an answerfile and a Certificate for SSL/TLS encryption support.

iv) If a user included a TSM certificate in the DR ISO using CRISP, when the recovery is run there was no indication that the certificate file is present. A wanrning message is now shown to indicate the presence of the certificate.

ii) Documentation updated for this release.

Bug Fixes

i) An extended disk partition marked as "OEM" caused the disk partitioning phase to fail during DR. This occurred when disk scaling was required. This is now fixed.

ii) Scaling disks before allowing a user to select whether to partition a disk was causing an issue. This is now fixed.

iii) An OFM_Snapshot_Failure error was reported when running TBMRCfg.exe on a system containing IBM TotalStorage support for Windows Volume Shadow Copy service. This is now fixed.

iv) A Windows Core system was not indicated correctly in the DR configuration. This is now fixed.

v) A recovery failed with a TCP/IP connection error if a TSM Server hostname is used instead of the IP address. This is now fixed.

vi) The error "CNM::IsDhcpEnabled (IPv6) failed" was sometimes reported when configuring an IPv6 network in the DR environment. This is now fixed.

vii) Recovering a German Windows 2012-R2 system using TBMR 7.2.1 with a later TSM client causes the C:\Programme SYMLINKD to be removed. This is now fixed.

viii) When you set a network to use DHCP inside a DR Answer file and then run the recovery, it was ignored and the original static IP was used on the original machine instead. This is now fixed and DHCP will be used correctly.

ix) During an upgrade from earlier versions the Licensing Help eBook was not updated. This is

now fixed.

1.8   7.2.1

New in 7.2.1

    i) Added support for TSM client/server version 7.1.1.0.

    ii) Now supports Windows 2012R2/8.1 natively using the new WinPE 5 based DR environment.

    iii) Added support for TSM SSL/TLS encrypted recoveries by allowing the certificate to be added to the DR ISO image. This feature is also supported by unattended DR operations.

    iv) The result of the TBMRCfg configuration creation (success or failure) is now recorded in the Windows Application Event Log.

    v) Now supports the Cristie License Activation Manager 1.1.

    vi) Added support for Cristie Recovery Console 3.2.

    vii) Added a feature to disable the automatic dissimilar hardware step during an unattended DR sequence.

    viii) Added the ability to run post recovery scripts (for Cristie Recovery Console support).

    ix) Documentation updated for this release.

Bug Fixes

    No bugs fixed in this release.

1.9   7.1.3

New in 7.1.3

    i) Add compatibility with Cristie Recovery Simulator (RS) version 2.2.

    ii) Documentation updated for this release.

Bug Fixes

    No bugs fixed in this release.

1.10   7.1.2

New in 7.1.2

    No new functionality in this release.

Bug Fixes

    i) Fixed a problem where systems with separate MSR or similar boot partitions are given the temporary driver letter "A:" if no floppy drive is present. This then resulted in a later failure during the DR sequence.

1.11   7.1

New in 7.1

i) Now supports TSM version 7.0.1 clients and servers.

ii) The disaster recovery (DR) environment is now available in both WinPE2 (32-bit) and WinPE4 (64-bit) versions.

iii) CRISP is now available in both 32-bit and 64-bit versions. These are used to create the WinPE2 and WinPE4 DR environments respectively.

iv) The product licensing method has changed in this release. Rather than use a license file as in version 6.x.x and earlier new contract and activation codes are used instead. A new License Manager tool is now provided to enable the new codes to be entered, viewed and activated. Upgrades from existing installations of TBMR 6.x.x or earlier will also need to be re-licensed.

v) The Driver Validation tool now checks hardware compatibility for both WinPE2 and WinPE4 versions.

vi) During the dissimilar hardware phase of the recovery sequence any missing mass storage or network drivers for the new hardware are first looked for in the recovered system driver-set and loaded from there if matching drivers are found.

vii) The WinPE2 and WinPE4 DR environments now boot up into the locale that the ISO's were created in with CRISP. For example if CRISP was installed on a host system set to English UK locale then the generated ISOs will boot with English UK keyboard and time display format.

viii) Documentation updated for this release.

Bug Fixes

i) Fixed a problem where TBMRCfg.exe runs at 100% CPU utilisation during a run on a single core VM system in vSphere.

1.12   6.5.2

New in 6.5.2

i) Adds support for Recovery Simulator 1.3, 2.1 and later.

Bug Fixes

i) None.

1.13   6.5

New in 6.5

i) TBMR now supports Windows 2012 and Windows 8 when used in conjunction with the IBM BA client version 6.4.

ii) Windows 8 and Windows 2012 Storage Spaces (SS's) or Storage Pools (SP's) recoveries are supported in a 'passive' way. Any SS/SP disk/partitions backed up to the TSM server will not be restored during the DR process. The SS's/SP's must be re-created manually when booted back into Windows and the contents then recovered manually from the TSM server.

Note any existing SS's/SP's detected on any of the target disks used during recovery will not be disturbed. So if recovering to the original disks the contents will already be in place and the SS's/SP's will not therefore need to be recreated manually.

iii) A different username and password may be used as an alternative to the standard Node

password when supplying credentials to access the backup node. So for example the Server Administrator credentials could be used.

iv)The IBM TSM client version 6.4.0.0 has been added to the DR WinPE2 environment to support Windows 8 and Windows 2012 DRs.

v)The TBMR Suite installer now disables TBMR installation if no TSM client is detected during the installation.

vi)CRISP has been updated to version 6.5.1. A few minor issues have been fixed. Note CRISP and the TBMR fileset will no longer install on Windows 8 or Windows 2012 because the Microsoft WinPE2 WAIK is not supported on those OS's.

vii) Added PE2 driver support for LSI SAS2 and Dell PERC H200 disk controllers.

viii) Added PE2 driver support for HP NC370, NC371, NC373, NC374, NC380, NC382, NC530, NC532, NC57712 and Broadcom BCM57711 NICs.

ix) Documentation updated for this release.

Bug Fixes

i) Fixed an obscure bug where TBMR installation would fail with no obvious error on x86 systems without the Windows Scheduler service installed.

1.14 6.4.2

New in 6.4.2

i) The TBMR Suite installer now warns the User if no TSM client is detected during the installation.

ii) The suite installer also checks that the user account running the installation has Administrator privilege. This is fatal and after warning the user will prevent the installation proceeding any further.

iii) It is now possible to deploy TBMR and manage recoveries in conjunction with CMC version 3.1.1 or later.

iv) CRISP has been updated to version 6.4.3. A few minor issues have been fixed.

v) The IBM TSM client version 6.3.0 in the DR WinPE2 environment has been updated from 6.3.0.0 to 6.3.0.18.

vi) Added new and updated driver support for the following HP NICs:
NC320i, NC320m, NC325i, NC325m, NC326m, NC324i, NC326i,
NC7771, NC7781, NC7782, NC7761, NC1020, NC320T, NC105T,
NC105i, NC107i, NC150T, NC329a, NC329T, NC329I, NC328T,
NC331FLR, NC331T, NC331i, NC332T, NC330i

vii) Added driver support for the Emulex 10Gb OneConnect range of NICs.

viii) Updated driver support for Intel Gigabit 82580, I350 NICs.

ix) Updated driver support for IBM MegaRAID SAS disk controllers.

Bug Fixes

i) In the WinPE2 DR environment the disk scaling code for non-System Dynamic GPT disks wrongly corrected the MSR minimum size. In some cases this meant that the restored disk layout would not fit on the target disk if it had the original size. This is now fixed.

ii) In the WinPE2 DR environment recovering a system that had a non-System MBR Dynamic disk back on to the original hardware would not let the recovery progress unless the non-System MBR Dynamic disk was partitioned, as it incorrectly identified the INI disk and ACT disk as being different. This is now fixed.

iii) When using the Cristie Network Configurator tool in the WinPE2 DR environment to add a static IP address and then selecting "Apply" an error was produced. This is now fixed.

iv) When TBMR is installed under the System account the initial configuration is now created correctly.

v) An issue whereby the WinPE 2 recovery environment was not finding the correct IDE driver during dissimilar recovery has been fixed. A new InstallIDE.inf file has now been provided and will be used automatically by the Dissimilar Hardware Wizard.

vi) When attempting to install TBMR on a native German system via the suite installer the default install folder is shown as "*Program Files*" instead of "*Programme*". This has been fixed for Windows XP and Windows 2003. By default on Windows Vista and later "*Program Files*" exists and this is still shown as the default install folder. "*Programme*" is a link to "*Program Files*" in this case.

vii) A run of the configuration generator program TBMRCfg.exe did not create OFM.LOG when run from outside the TBMR installation folder. This has now been fixed.

viii) If a filespace is renamed (e.g. *\\W2003-32\c$ -> \\W2003-32\joboutput*), the new name is displayed in the list of filespaces that can be restored. If the user then selected the filespace to be restored then the recovery would fail, since we didn't know where to recover it to. This is now fixed.

1.15   6.4.1

New in 6.4.1

i) **IMPORTANT!** Because of recent (May 2012) Microsoft licensing changes, Cristie can no longer distribute the WinPE based DR environment directly to end users. The WinPE2 DR environment must now be created by end users using tools provided by Cristie and Microsoft. Please refer to the documentation provided with the Cristie ISO Producer (CRISP) product.

ii) TBMR now supports client/servers 6.3. Please refer to the Requirements section in this Readme for exact versions supported.

iii) It is now possible to change the recovered system's Hostname and/or IP address.

iv) The product license agreement has been revised to clarify the use of the product for system migration or cloning.

v) The Online Help and manual has been updated for this release.

vi) The new version of the setup program allows the Readme (i.e. this document) and the Installation Guide to be displayed before installing the program.

vii) Minor enhancements to the WinPE based DR GUI.

viii) Added the following new driver support to the WinPE DR environment:

HP NC364m NIC
Broadcom NetLink NIC
LSI 3ware 9750 RAID Controller

ix) Added new Win2003/2008 IDE drivers for use with the DHW when recovering to VMware.

Bug Fixes

i) Selecting Italian for the TimeZone was not indicated with a 'tick' mark.

ii) In some situations a System Reserved partition was left with a permanent drive letter allocated after a DR sequence. This has been fixed.

1.16   6.3.3

New in 6.3.3

i) A WinPE1 based DR environment is no longer provided for TBMR. The WinPE2 DR environment now fully supports pre-Vista OS's (i.e. WinXP and Win2003).

ii) No longer needs to modify the *SYSTEM\CurrentControlSet\Control\BackupRestore\FilesNotToBackup* registry key during installation. This caused some problems on clustered systems.

iii) The VMware LSI_SAS drivers used for injecting into dissimilar systems during DR have been updated. Separate drivers are now included for Windows 2003 x86/x64 and Windows 2008 x86/x64.

iv) The root folder containing VM drivers used by the Dissimilar Hardware Wizard (DHW) during dissimilar recovery has been changed to X:\VMDrivers.

v) Extended the timeout for running the configuration generation tool (*TBMRCfg.exe*) at install time from 10 mins to 20 mins.

vi) The WinPE2 DR environment can now be synchronised with a Network Time Protocol (NTP) server.

vii) The TBMR installer dialog now contains a shortcut to the Readme document (i.e. this document).

viii) The Cristie Network Configurator tool provided in the WinPE2 DR environment now displays help when the Help button is clicked.

ix) Added IDE Hyper-V drivers to the PE2 DR environment.

x) Documentation updated for this release.

xi) The following new WinPE2 drivers have been added:

RealTek OEM NIC driver set.
Emulex/ServerEngine 10Gb NIC drivers.
HP NC550SPF Dual Port 10GbE NIC driver.
Adaptec I2O RAID driver.

xii) The following WinPE2 drivers have been updated:

Broadcom NetXtreme and NetXtreme II monolithic drivers.

Bug Fixes

i) Fixed a problem where the Dissimilar Hardware Wizard (DHW) would not recognise Hyper-V drivers in the registry during the recovery of a VM. The effect of this was to cause the recovery to fail when in fact this was not the case.

ii) Fixed a DSMC.EXE crash at the end of the 2nd SystemState recovery phase during DR in WinPE2.

iii) Log file contents are now time-stamped consistently with local time.

1.17   6.3.2

New in 6.3.2

i) No new features. This is a bug fix release only.

Bug Fixes

i) Contents of MSR are not copied back after W2008-R2 image only restore. This is now corrected.

ii) In a TBMR WinPE2 recovery it is possible to resize a partition to be larger than the disk containing it. This is now fixed.

iii) It is not possible to install MS SQL Server 2008 on a machine that was recovered from a TBMR backup. This is now fixed.

iv) When dynamic EMC SAN disks are connected, the restore hangs after the configuration is retrieved. This is now fixed.

v) Disk scaling doesn't work on a GPT disk when the disk is smaller than the minimum size necessary to accommodate the smallest partition sizes (by occupancy). This is now corrected.

vi) When restoring a 2008R2 system "Network Service" is removed from HKEY_USERS\S-1-5-20 registry key permissions. This is now corrected.

vii) User profile files were not being backed up properly on Windows 2003 x64 systems. This is now fixed.

viii) When a Windows 2003 x64 cluster server is recovered using TBMR, the cluster service doesn't start. This is now corrected.

1.18   6.3

New in 6.3

i) TBMR has successfully completed the *Ready for IBM Tivoli* software validation process and is now listed in the *IBM Tivoli Open Process Automation Library (OPAL)*.

ii) TBMR now supports TSM client and server versions 6.2.x.x.

iii) Recovery of systems with UEFI BIOS and GPT partitions is now supported.

iv) TBMR now supports recovery from TSM online backupsets.

v) The setup program displays a list of post-installation actions for configuring TSM.

vi) The initial TBMR configuration is created silently at the end of the installation. Any failure will be reported.

vii) The WinPE1 and WinPE2 DR environments no longer require acceptance of a License Agreement during the boot process. By accepting the Cristie License Agreement during the installation of the Windows TBMRCFG component the Customer also accepts any special WinPE licensing terms and conditions.

viii) It is now possible to start the UltraVNC server process from the Tools menu of the DR Main Menu.

ix) The Windows PE recovery environment now shows progress for both number of files and bytes recovered for each stage.

x) TBMR no longer modifies the DSM.OPT file to remove certain EXCLUDE statements.

xi) A path to the driver files will be requested if new drivers are required for the recovered system. The new drivers will be installed automatically at the end without the need for running the Dissimilar Hardware Wizard.

xii) Automated recoveries without any user intervention are now possible with an answer file. A new user guide describing how to prepare for and run automated recoveries has been added to the documentation set.

xiii) Added a check at the end of the restore and before reboot to determine if all boot files are present. This will indicate whether the system has a good chance of booting correctly.

xiv) Added VMware PVSCSI mass storage and VMXNET3 NIC driver support to the Windows PE1 and PE2 DR environments. The 32/64-bit PVSCSI drivers are also made available for injecting into systems during dissimilar DR.

xv) The WinPE2 DR environment is now compatible with Hyper-V VMs. Also provided are 32/64-bit drivers on the CD for dissimilar hardware recovery to Hyper-V VMs. Inject these drivers into the VM prior to re-boot. Note that WinPE1 is not compatible for recovery to a Hyper-V VM. Always use the WinPE2 DR environment with Hyper-V

Bug Fixes

i) Setup now handles the insufficient disk space condition correctly.

ii) The option to modify the installation from the Control Panel has now been disabled - there is nothing to modify.

iii) It is now possible to change the timezone in Windows PE2 environment.

iv) Fixes a problem in the PE recovery environment when deleting a partition and extending the size of an adjacent partition can produce a an incorrect very large new partition size.

v) Online Help is now available from the main menu in the Windows PE2 recovery environment - it was missing before.

1.19 6.2.2

New in 6.2.2

i) DR environment now available in Windows PE version 2 form as an alternative to PE version 1.

ii) Command line version of the Driver Validation Tool now included.

iii) CBMR Hardware Wizard is now renamed as Dissimilar Hardware Wizard (DHW). The existing GUI is changed for clarity and the rarely used 'Test mode' is removed.

iv) Added a check to ensure the machine architecture specified in the DR configuration matches that of the recovering system.

v) Now supports Windows 7, Server 2008 R2 and Server 2008 Core R2.

Bug Fixes

i) Fixed problem installing Windows 2008 SP2 on a restored system.

ii) Fix a crash when trying to abort a recovery of SystemState.

iii) Fix a problem whereby a client-side client options file was preventing the recovery of the DR configuration.

iv) Fixed a problem trying to recover a mounted partition when the base partition isn't being restored (e.g. trying to restore a partition mounted on E:\MountPoint when E: hasn't been restored).

1.20 6.2.1

New in 6.2.1

i) Now supports 32 and 64-bit editions of Windows Server 2008 Core.

ii) Now supports TSM 6.1.x.x servers.

iii) Reference to remote use removed from the HW Wizard.

iv) Now supports backup and restore of files with path names up to 32,767 characters.

v) Added support for advanced option "Omit LDM database reservation". This means that during Basic disk scaling, no space is reserved for the LDM database.

vi) Changes to support GPT disks on Itanium recoveries. Resets partition unique GUIDs in the EFI partition table back to their original values as specified in disrec.ini.

vii) Added support for the full recovery of an EFI partition. This should create and format the EFI partition (if required) and leave it with an assigned drive letter that BMRWizard can use to restore its contents.

viii) Added VMware 64-bit mass storage drivers to the x86 version of the WinPE recovery

environment.

ix) Windows 2000 support has now been dropped.

x) WinPE Intel Pro100, Pro1000 and ProXGB NIC drivers updated.

xi) WinPE Marvell Yukon NIC driver updated.

xii) Added 3Ware 7x, 8x and 9x SCSI drivers to WinPE environment.

xiii) Added 3Com 3C2000-T NIC driver to WinPE environment.

Bug Fixes

i) Correct problem where configuration did not contain a drive letter for GPT partitions.

ii) Fixed a bug where a User had an MBR partition type 0x1B (Hidden Win95 FAT32) which caused problems with DiskPart as it created the partition OK, but didn't associate a volume with it as the partition is hidden. This behaviour is changed now so that if a user has a partition type 0x1B we instead create 0x0B and 0x1C becomes 0x0C.

iii) Corrected a problem modifying the MSDTC files not to backup list in the registry. Now correctly terminates the list with 2 NULL bytes.

iv) Corrected a problem where the HW Wizard tool did not pick up Mass Storage and NIC devices correctly. It also missed MS devices in basic mode which has also been corrected.

1.21   6.1.2

New in 6.1.2

i) Creating an initial TBMR configuration at the end of the installation is now mandatory.

Bug Fixes

ii) Fixed a problem with the recovery of systems containing the string "**ASR**" in their hostname.

iii) Added a section to the User Guide describing points to consider when using TSM image backups.

1.22   6.1.1

New in 6.1.1

i) Installation of Microsoft VC++ 2005 SP1 prerequisite now automatic.

ii) Native 64-bit version is now available. It is no longer possible to install a 32-bit version of TBMR on a 64-bit system.

iii) Existing 32-bit installations of TBMR on a 64-bit OS will be upgraded to the equivalent 64-bit version of TBMR.

iv) Installation warns if less than 512MB memory is available for WinPE recovery.

v) Added Advanced Options dialog – accessible from the Tools option to specify options to automatically map disks and to automatically update boot.ini during DR.

vi) Installation warns if TSM LVSA or OFS is not detected.

vii) At the end of the installation TBMR, by default, will create an initial default configuration. This default configuration contains the Windows system disk only.

viii) Reference to remote use removed from the HW Wizard.

ix) TSM image backups now supported.

x) Added further WinPE driver support.

xi) Recovery logs now saved automatically to recovered system.

xii) Icons used to indicate status of disks/partitions to be recovered during DR now enhanced.

xiii) TBMR configuration now saved in folder %SystemDrive%\TBMRCFG instead of %SystemDrive%\CBMRCFG.

xiv) Now supports 32 and 64-bit editions of Windows Vista and Server 2008 (including the Core version).

xv) Logging trace levels during the DR can now be set using trace.ini

xvi) The TBMR 64-bit registry key *HKEY_LOCAL_MACHINE\Software\Cristie\TBMR\6.1.1* and its sub keys is now reflected in the 32-bit section of the registry (i.e. *HKEY_LOCAL_MACHINE\Software\Wow6432node\Cristie\TBMR\6.1.1*). This allows existing 32-bit applications to detect the presence of the TBMR installation on 64-bit Windows.

xvii) Added basic BIOS and SCSI information to the dump tables log file.

Bug Fixes

i) Fixed a problem with 64-bit recoveries. When creating the parent directory for a file in the root directory (e.g. C:\NTDETECT.COM) it tries to create a parent directory of "C:" instead of "C:\".

ii) Fixed a problem during recovery where CBMRCFG files were too large to fit into the RAM filesystem.

iii) Fixed a recovery issue where a customer system was upgraded from Windows 2000 to Windows 2003 and the Windows folder was \WINNT instead of the expected \WINDOWS.

iv) Now correctly handles the situation where the TSM node password has expired when trying to recover the system.

v) Added support for the recovery of MBR partition types 0x1B (hidden Win95 FAT32).

vi) WinPE DR now uses a temporary drive letter of "Y:" instead of "B:" as on some customer systems B: and A: are linked. This caused a problem if the configuration was loaded from a floppy.

vii) WinPE DR no longer attempts to assign a driver letter to a drive marked as "foreign". Normally, at WinPE boot time, any volume discovered without a drive letter is automatically assigned one.

viii) Changed the create MBR partition logic as a result of a bug reported on an IBM X-series where it was impossible to create a single primary partition on a disk because WinPE indicated insufficient disk space (though there was).

ix) Corrected a problem in the remap of drive letters during a recovery when choosing not to partition a data disk. This sometimes caused the remap to fail.

x) When assessing whether DR target disks are multi-path, the disk signature as well as the location is used to determine duplicates.

xi) Enhanced the way dynamic disks are initialised if Windows boots from a dynamic volume.

xii) Correct problem where configuration did not contain a drive letter for GPT partitions.

xiii) Remove erroneous documentation references to TBMR start up 'splash' screen.

xiv) Now installs correctly on systems where TSM is installed on a non-system disk.

xv) Correct "Unable to initialise CBAC" error during automatic DR. This occurred after specifying the TSM server details, selecting "Next" and then backing up a step to specify the TSM details again.

xvi) TBMRCfg.exe now contains the correct manifest to allow it to request Admin privileges on Vista with UAC enabled.

1.23 5.3.2

i) WinPE - Recovery logfiles are now stored in a zip archive with the name "Cristie_logs_ddmmyy_hhmmss.zip".

ii) Added WinPE SmartArray 6400 driver.

Bug Fixes

i) Correct registry setting upon installation to fix MSDTC restart problem on some systems after DR.

ii) During the configuration of target disks and partitions, arguments are disk numbers rather than disk indexes.