



Quest Recovery Manager for Active Directory
10.3

Release Notes



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Quest Software Inc.

Attn: LEGAL Dept

4 Polaris Way

Aliso Viejo, CA 92656

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Updated – March 2023

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Quest® Recovery Manager for Active Directory 10.3

Release Notes

These release notes provide information about the Quest® Recovery Manager for Active Directory 10.3 release.

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About Quest® Recovery Manager for Active Directory 10.3

Recovery Manager for Active Directory enables fast, online recovery. Comparison reports highlight what objects and attributes have been changed and deleted in Active Directory enabling efficient, focused recovery at the object or attribute level. Accurate backups and a quicker recovery enable you to reduce the time and costs associated with AD outages and reduce the impact on users throughout your organization.

Recovery Manager for Active Directory is based on patented technology.

Recovery Manager for Active Directory 10.3 is a release with new features and functionality. See [New Features and Enhancements](#).

New Features and Enhancements

This section covers new features and enhancements in Quest® Recovery Manager for Active Directory 10.3.

Major Features

Console Configuration Backup and Restore

New feature to backup your Recovery Manager for Active Directory (RMAD) Console settings and project files, allowing you to quickly reinstall the product and restore its configuration to the last backed up state in case

RMAD becomes inoperable due to a failure. Additionally with a backed up RMAD console configuration file you can install a new Recovery Manager for Active Directory Disaster Edition Forest Recovery console on a new host. This is useful for adding another RMAD console.

Pause Recovery Enhancements

The Directory Services Restore Mode (DSRM) can be paused during recovery. Recovery Manager for Active Directory now has advanced actions that can be performed during the pause step, including an option to run a script, quarantine files and define custom rules for handling of malicious files.

Integrity Checks for AD Backups

Recovery Manager for Active Directory now supports integrity checks for Active Directory® backups. This new capability in Recovery Manager for Active Directory ensures that integrity checks are automatically performed when a backup is registered and integrity checks can be configured to be performed after a scheduled backup.

Automatic DNS Selection

Before starting a forest recovery operation, you should specify a method for selecting a preferred DNS server for each domain controller in your recovery project. Recovery Manager for Active Directory 10.3 has enhanced these methods and how the preferred DNS server is automatically detected.

Hybrid Connector

Recovery Manager for Active Directory integration with On Demand Recovery enables the restoration and undelete of on-premises objects that are synchronized with Azure Active Directory. The RMAD Hybrid Connector service has been updated to no longer use SQL Server® for Hybrid configuration and the TLS v1.2 protocol is now being enforced when communicating with On Demand Recovery.

NOTE | With the removal of the SQL Server® for the Hybrid configuration, after upgrade to 10.3 it is required to re-enter credentials for each domain listed under Discovered Domains.

Computer Collection Properties and Using Preinstalled Backup Agent

Recovery Manager for Active Directory 10.3 has updated the default properties for all new computer collections. The option to **Use preinstalled Backup Agent** is now selected by default as this is the recommended practice for management of the backup agent. The option **Automatically configure Windows Firewall** and **Ensure Forest Recovery Agent is deployed** are not selected by default. It is highly suggested to review selected options on existing computer collections.

Windows 2022

Support for agent based restore with LSA protection for Windows 2022.

Support OAuth for Email Notifications

Full support for OAuth2 authentication method for email notifications. Required due to deprecation of basic authentication for Exchange Online.

Enhancements

General

Enhancement	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.3		
Salting mechanism for forest recovery project password hashes	N/A	412667
Show AD tombstone lifetime settings somewhere in a product UI	N/A	353685
Allow for password complexity	N/A	253917
BackupAgent does not respect global logging setting 'Create a new set of log files: Never' on the DC side.	N/A	381957
TLS 1.2 - Enforce in Hybrid Connect Service for communication to On Demand	N/A	384624
Recovery Manager for Active Directory 10.2.2 Hotfix 2		
Support for OAuth2 authentication method for email notifications. Required due to deprecation of basic authentication for Exchange Online	N/A	384541
Recovery Manager for Active Directory 10.2.2		
Improve message the error while creating remote DCOM object failed because "Access is denied"	N/A	263396
Cannot restore a user from a backup that requires credentials for accessing it	N/A	267022
Support GMSA account type to run PS custom script (Agent side only)	N/A	317648
Installation option for hybrid service in the main product setup	N/A	346507
New hybrid configuration Powershell API	N/A	346513
Installer check updated for .NET 4.8	N/A	349988
Full support for GMSA accounts for RMAD DRE/FE/Standard	N/A	352707
Support for Windows 2022 with exceptions. See User Guide	N/A	363862
Recovery Manager for Active Directory 10.2.1		
Usability improvements to the Computer Collections Properties dialog including removal of Logging tab and introduction of new tab for Secondary Storage	N/A	283362
Creation of Management Shell Guide which lists all available PowerShell® cmdlets, with examples. Appendix removed from User Guide	N/A	275100
Recovery Manager for Active Directory 10.2		
Rename system state backups to Active Directory® backups	RMADFE-3009	218405

Enhancement	ID (old)	Azure DevOps
Hide the "Components" tab in computer collection settings	RMADFE-3042	218415
SCOM 2019 support	N/A	219783
Pass through Synchronize across time zones from windows task scheduler to RMAD	RMADFE-952	220703
Create Logs Daily to be on by default	N/A	223980
Display operating system version for all backups	N/A	228741

Resolved Issues

General Resolved Issues

Resolved Issues	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.3		
Online Restore Wizard: Reporting on Unchanged Objects	N/A	377277
Incorrect email subject message after unsuccessful/incomplete recovery	N/A	406720
Computer Column - Timing column for the backup jobs to assist users in estimating job lengths	N/A	351058
When the Additional path is offline, then a job that's only using local-storage completes with a warning. With Remote Storage, the job fails with an error.	N/A	370690
ISO boot fails with a BSOD on Windows 2022 lab. To fix the issue, you need to add the latest cumulative update (any update after 7C-KB5015879) into WinRE.wim. Download the LCU September 13, 2022 — KB5017316 (OS Build 20348.1006) (microsoft.com). See the Quest Knowledge Base article KB4368806 for commands that need to be run.	N/A	376632
Online Restore Wizard Directory object not found when restoring with old 2012 R2 backup to 2019 DC	N/A	380226
Issue with install - invalid SQL hostname during install/upgrade	N/A	388182
FSMO Roles are not displayed in the recovery report after restore	N/A	376235
Tab order on SQL Installer page is wrong	N/A	397266
Recovery Manager for Active Directory 10.2.2 Hotfix 3		
RMAD fails to perform backups when using GMSA account after Microsoft Patch applied KB5022289 \ KB5022286	N/A	406231

Resolved Issues	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.2.2 Hotfix 2		
Include product name and version to the self-extracted installation package	N/A	367930
Remove Autorun from build, CD package	N/A	380288
Email notifications to O365 email is not supported when Basic Authentication disabled on tenant	N/A	386176
RMAD Console crashes when recovering SYSVOL from a backup using Repair Wizard	N/A	388796
SCOM: computer collection and RMAD instances are in not monitored health state	N/A	393392
Option to "Repair" an installation is grayed out	N/A	383571
Online restore wizard does not work on Windows 2016 with LSA protection and Secure Boot enabled	N/A	226670
Online restore wizard does not work on Windows 2022 with agent based restore and with LSA protection enabled	N/A	367163
Recovery Manager for Active Directory 10.2.2 Hotfix 1		
Restore-RMADDeletedObject cmdlet crashes when it's used without explicitly specified credentials	N/A	382646
Domains that are not synced with Azure AD should be present in the list of discovered domains but should not cause error (require credentials) while saving the configuration	N/A	380628
Cannot save ODR integration settings in RMAD due to an old forest/dc listed in discovered domains	N/A	380625
Offline Restore Wizard fails with Access Denied to install Offline Restore Agent	N/A	375451
Setup folder does not include .NET 4.8 after changing product requirement	N/A	373180
Full replication between two consoles is failing with 'The given key was not present in the dictionary' error	N/A	322095
Recovery Manager for Active Directory 10.2.2		
RMAD replication doesn't work with Group Managed Service Account (gMSA) configured for console connection	RMADFE-2594	242195
gMSA cannot be used when setting up replication	RMADFE-2519	242560
Use a gMSA account from one domain as the agent account for backing up DCs in a different domain does not work	N/A	265197
RMAD not finding backups requested by ODR in different timezones	N/A	316404
BackupAgent does not respect global logging setting "Create a new set of log files: Never"	N/A	322747

Resolved Issues	ID (old)	Azure DevOps
Update DisksInfoProvider to be more current and ignore unnecessary drive types	N/A	323924
ERDiskAD.mdb does not get imported, gets overwritten by blank rmad.db3 when installing the new version.	N/A	352421
A v10.2.1 pre-installed backup agent fails when backup is requested by a v10.1.1 console	N/A	353765
Updating backup agent fails if custom port is configured.	N/A	354851
Global settings dialog has a slightly broken layout on several tabs	N/A	358457
RMAD Console - Replication: Backup information is not being cleaned out of the console when it no longer exists on source	N/A	359553
RMAD Console: Diagnostic Logging drop-down reverts to Global Settings when enabled within Advanced settings of Computer Collection	N/A	363140
Installer log messages are truncated	N/A	364258
Recovery Manager for Active Directory 10.2.1 Hotfix 2		
RMAD Console Replication error (XML error) during replication when backup runs on master console	N/A	351462
Cleanup of metadata during restore of an unprotection object failed from accidental deletion	N/A	354567
RMAD Console: Diagnostic Logging drop-down reverts to Global Settings when enabled within Advanced settings of Computer Collection	N/A	363140
RMAD build 10.2.1.36279 will not install and triggers MS Defender notification	N/A	366313
Recovery Manager for Active Directory 10.2.1 Hotfix1		
Error with diagram explaining Change Auditor integration	N/A	323348
GMSA workflow in the documentation is reportedly missing steps	N/A	325726
Cannot retry a snapshot if certain errors occurred while creating a backup	N/A	330733
Recovery Manager for Active Directory 10.2.1		
Allow to unselect Console storage immediately as alternative has been configured	N/A	220573
Large number of scheduled tasks can cause Console, Replication and PowerShell cmdlets to be extremely slow	RMADFE-1837	242166
Remove a BOM prefix from the script file	N/A	257798
Unpacking the backup and the retention policy may fail if the DC cannot be accessed via LDAP from the RMAD console machine	N/A	279431
RPC calls to Backup Agent are not retried on RPC_S_SERVER_TOO_BUSY error	N/A	314812

Resolved Issues	ID (old)	Azure DevOps
Misleading 'Unable to map the network share IPC\$ on the computer' error message on attempt to map UNC share	N/A	316902
Installation fails with an invalid error message when using a local windows credential to connect to the remote SQL server	N/A	317818
Online Restore Wizard cannot undelete an object using a non-administrative account. Restoring an object in Online Restore Wizard using a non-administrative account may result in the following error for NT-Security-Descriptor attribute: "Cannot retrieve attribute value(s) from Active Directory. Possible reason: Insufficient access rights." To ignore this error, the NT-Security-Descriptor attribute can be excluded from the list of restored attributes.	N/A	293311
Recovery Manager for Active Directory 10.2 Hotfix 1		
Installation of Quest personal certificates to the local certificate store failed. Receive error message to install Quest certificates later. This should not be required.	N/A	274643
Computer Collection scheduled tasks removed after upgrade to 10.2 if gMSA used as the scheduled task account	N/A	280854
rmad.db3 file gets overwritten during an uninstall -> install of version 10.2	N/A	283069
Cannot retain the uncheck "Global Catalog Servers" option in the Advanced tab of the Computer Collection properties window	N/A	230397
It will display 'Network access is denied' error in Win2016/2019 if specify account to restore GPO with "domain\username" format	N/A	233623
Cannot see some advanced objects in the object picker in Online Restore Wizard	N/A	275027
Recovery Manager for Active Directory 10.2		
Security Vulnerability - Sensitive comments embedded within client-side code sent to an end user machine	RMADFE-3244	218142
Security Vulnerability - Runtime hardening (SEP, ASLR and other)	RMADFE-3248	218146
Full replication fails when a DC is selected for the option 'Unpack each backup upon its creation' in the master console	RMADFE-1858	218500
Storage agent settings are not applied on install	N/A	219910
No progress/wait indication after clicking 'OK' on the 'Add Console...' dialog	N/A	224321
Backup fails if the Domain Controllers OU has a AzureADKerberos computer object in it as part of Azure AD FIDO deployment	N/A	227903
Improve documentation with information on number of scheduled computer collections for optimal performance	N/A	232614
Access Violation in the ProcessRequest function and crashes service	N/A	232682

Resolved Issues	ID (old)	Azure DevOps
Remove mutual exclusion mechanism between replication process and restore process	RMADFE-1575	237972
Display correct backup info and support restore for Collections with containers (not DCs)	N/A	240580
Retriable VSS error causes undefined behavior in Backup Agent on retry	N/A	241825
Modify the configuration to remove collision problems with SHA1, moved to SHA256	N/A	253913
Retention policy ignores collection and consider backups of all collections	N/A	259645

Security Information

Recovery Manager for Active Directory fully supports Transport Layer Security (TLS) 1.2. It is recommended that you upgrade to TLS 1.2 for secure communications.

Security Resolved Issue	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.3		
Salting mechanism for forest recovery project and ADVL project password hashes	N/A	412667
Enforce password complexity on Forest Recovery project	N/A	253917
TLS 1.2 - Enforce in Hybrid Connect Service for communication to On Demand	N/A	384624
Recovery Manager for Active Directory 10.2.1		
Do not use SHA1 for key derivation function to generate hash for creation of AES-256 key for backup encryption	---	---

Known Issues

General Known Issues

Known Issue	ID (old)	Azure DevOps
Backups may contain invalid FQDNs that are registered automatically, so they cannot be selected in the Forest Recovery Console. Workaround: Use the Active Directory browse method to add the DCs to a collection when creating backups, or perform backup creation for the DCs (with correct FQDN) directly. To use the Active Directory® browse method, click All Domain Controllers in the console tree, right-click a domain controller on the right pane and press Add to Collection .	RMADFE-2851	220570

Known Issue	ID (old)	Azure DevOps
Recovery Manager for Active Directory does not show changes to GPO administrative templates in the GPO comparison report.	RMADFE-805	220632
Group Policy restore might fail with the error "Network access is denied" if you run the RMAD console under a local account, and this account has the same username and password as the domain account you use to restore Group Policy in the domain.	RMADFE-2162	226664

System Requirements

Before installing Recovery Manager for Active Directory, ensure that your system meets the following minimum hardware and software requirements.

NOTE | Recovery Manager for Active Directory supports only IPv4 or mixed IPv4/IPv6 networks.

Recovery Manager for Active Directory requirements

Processor

Minimum: 1.4 GHz

Recommended: 2.0 GHz or faster

CPU Cores

Minimum: 2 CPU cores

Recommended: 4 CPU cores

Memory

Minimum: 2 GB

Recommended: 4 GB

These figures apply only if the Active Directory domains managed by Recovery Manager for Active Directory include 1 million objects or less. Increase RAM size by 512MB for every additional 1 million objects.

Hard disk space

Full installation including the prerequisite software: 2.7 GB of free disk space

In case all the prerequisite software is already installed: 260 MB of free disk space

NOTE | Additional storage space is required for a backup repository, at least the size of the backed-up Active Directory® database file (**Ntds.dit**) and the **SYSVOL** folder plus 40 MB for the transaction log files.

Operating system

NOTE | Machine that hosts the Recovery Manager for Active Directory console must have same or higher version of Windows operating system than the processed domain controllers. Otherwise, the online

compare and object search in a backup during the online restore operation may fail.
32-bit operating systems are not supported.

Installation

- Microsoft Windows Server® 2022, 2019, 2016, 2012 R2, and 2012
- Microsoft Windows® 11, 10 x64, 8.1 x64

Targets for backup, restore, or compare operations

- Microsoft Windows Server® 2022, 2019, 2016, 2012 R2 and 2012 (including Server Core installation)

The Windows Server Backup feature is supported for Windows Server® 2012 R2 or higher. Make sure that the feature is installed on all domain controllers in your environment.

NOTE Windows Server® 2012 requires Microsoft .NET Framework version 4.8 or higher installed. See the following Microsoft article for instructions on installation: [Microsoft .NET Framework 4.8 for Windows Server 2012](#)

Microsoft .NET Framework

Microsoft .NET Framework version 4.8 or higher

Microsoft SQL Server and its components

Microsoft SQL Server® versions

Microsoft SQL Server® is required for the following Recovery Manager for Active Directory features: Comparison Reporting and Forest Recovery Persistence.

Supported SQL Server® versions:

- Microsoft SQL Server® 2019, 2017, 2016, 2014 and 2012 (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)

Microsoft SQL Server® components

Microsoft System CLR Types for SQL Server® 2012

If this component is not installed, it will be installed automatically by the RMAD setup.

Microsoft SQL Server Reporting Services

To display reports, Recovery Manager for Active Directory can integrate with Microsoft SQL Server® Reporting Services (SRSS) 2016, 2017 and 2019.

Microsoft Operations Manager

Supported Microsoft Operations Managers for the RMAD Management Pack for Microsoft Center Operations Manager (SCOM):

- Microsoft System Center Operations Manager 2022, 2019, 2016, 2012 R2, and 2012

Microsoft Windows PowerShell

Microsoft Windows PowerShell® version 5.0 or later

Integration with Change Auditor for Active Directory

Supported versions of Change Auditor for Active Directory: from 6.x to 7.x.

If any prerequisite software is not installed, the Setup program automatically installs it for you before installing Recovery Manager for Active Directory. If the prerequisite software to be installed is not included in this release package, it is automatically downloaded.

Continuous recovery: From version 10.0.1, Recovery Manager for Active Directory together with Change Auditor can restore the deleted object(s) and continuously restores the last change (if any) that was made to the object attributes after creating the backup, using the data from the Change Auditor database.

Forest Recovery Agent requirements

Memory

1 GB (2 GB recommended)

Hard disk space

2 GB or more

Operating system

One of the following operating systems:

- Microsoft Windows Server® 2022, 2019, 2016, 2012 R2, and 2012 (including Server Core installation)

Secure Storage Server requirements

Processor

Minimum: 1.4 GHz

Recommended: 2.0 GHz or faster

CPU Cores

Minimum: 2 CPU Cores

Recommended: 4 CPU Cores

Memory

Minimum: 2 GB

Recommended: 4 GB

- Operating system: Microsoft Windows® 2016 or higher
- A stand-alone server to be used as your Secure Storage server. This server should be a workgroup server and not joined to an Active Directory domain.
- An account that will be used to deploy the Storage Agent on the Secure Storage server. This account must also be a local Administrator on the Secure Storage server.
- Physical access to the Secure Storage server. Once the server is hardened access with regular methods will be disabled.
- Sufficient storage space on the Secure Storage server for all backup files. For one backup file, the space required is at least the size of the backed-up Active Directory® database file (Ntds.dit) and the SYSVOL folder plus 40 MB for the transaction log files.

Cloud Storage requirements

- Internet access available on the Recovery Manager for Active Directory console. A standard outbound HTTPS port 443 is used to upload data to Azure® Blob and Amazon S3 Storage.

- Azure and Amazon S3 subscription(s) to create and manage Azure and Amazon S3 Storage accounts and containers.
- A method of creating and managing Azure and Amazon S3 Storage accounts, containers, and policies for the storage account (lifecycle, immutability and replication policies).

Active Directory Virtual Lab requirements

Microsoft System Center Virtual Machine Manager (SCVMM) 2012 R2, 2016, 2019 or 2022

- Software that must be installed on the Active Directory Virtual Lab computer:
 - Microsoft SCVMM Console (supplied with the SCVMM version you plan to use)
- Software that is installed on the source computer by Active Directory Virtual Lab console:
 - Disk2vhd v2.01 utility
For more details, see the *Working with SCVMM 2012 R2 or higher* section in User Guide.
- Supported operating systems for the Hyper-V® host:
 - Microsoft Windows Server® 2012 R2 or higher.

VMware vCenter® / VMware ESX® Server 6.0, 6.5, 6.7 and 7.0

- Active Directory Virtual Lab does not support conversion of Windows Server® 2019 Domain Controllers using VMWare ESXi™ / VMware vCenter® server.
- Active Directory Virtual Lab does not support VMware ESXi™ 6.0.
- VMware vCenter® Converter™ 6.2 must be installed in your environment using the Client-Server installation setup option.
- VMware vCenter® Converter™ must be accessible to the Active Directory Virtual Lab.
- If the TLS 1.0 protocol is disabled on VMware vCenter® Converter™ and VMware vCenter® servers, then switch to TLS 1.2 on the ADVL server. For more details, see the following KB articles:
 - [Status of TLSv1.1/1.2 Enablement and TLSv1.0 Disablement across VMware products \(2145796\)](#).
 - [Microsoft Security Advisory 2960358](#)

Password and SIDHistory Recoverability Tool

You can only use the Password and SIDHistory Recoverability Tool if Microsoft's Active Directory Recycle Bin is not enabled in your environment.

Product Licensing

The Recovery Manager for Active Directory(RMAD) license specifies the licensed number of user accounts in the Active Directory domains protected with the product. If the actual number of user accounts exceeds the licensed number, RMAD does not stop functioning but displays a warning message each time you back up data. In this case, you need to purchase and install a new license key file allowing you to back up a greater number of user accounts or revoke licenses from the domains whose backups you no longer need.

To view information about and manage the installed license key file, you can use the License tab in the **About** dialog box: in the Recovery Manager Console, right-click the Recovery Manager console tree root, and then click **About**.

Installing license key file

You need to supply a valid license key file when installing Recovery Manager for Active Directory.

To install a license key file

1. In the Setup Wizard, on the **User Information** page, click **Browse license** to display the **Select License File** dialog box.
2. Locate the Quest license file (*.dlv) and click **Open**.

Updating license key file

If you have purchased a new license key file, use the Recovery Manager Console to update the license key file.

To update the license key file

1. In the Recovery Manager Console, right-click the **Recovery Manager for Active Directory** console tree root, and then click **About**.
2. In the **About** dialog box, click the **License** tab, and then click **Install License File**.
3. In the **Update License** dialog box, enter the path and name of the license key file, and then click **OK**.

Revoking licenses

When the actual number of user accounts exceeds the licensed number, Recovery Manager for Active Directory returns a warning message each time you back up data. In this case, you can revoke licenses from the domains whose backups you no longer need. The revoked licenses are returned to the pool of available licenses and you can allocate them to a different domain.

CAUTION | When you revoke licenses from a domain, all backups created by Recovery Manager for Active Directory for that domain get deleted. You should only revoke licenses from a domain if you no longer need backups created for that domain.

To revoke licenses from a domain

1. In the console tree, right-click the root node, and then click **About**.
2. In the About dialog box, click the **License** tab.
3. On the **License** tab, select the domain from the **License Usage** list, and then click **Revoke**.
4. In the confirmation message box, click **Yes**.

Getting Started

Upgrade and installation instructions

NOTE | For Recovery Manager for Active Directory 10.1 or higher: Make sure that you use the Backup Agent version supplied with this release of Recovery Manager for Active Directory.

Recovery Manager for Active Directory (RMAD) supports a direct upgrade from version 10.0 and higher. If you have an earlier version of RMAD, the best practice is to upgrade the product to any of the supported versions, and then upgrade it to the latest version.

Alternatively, you can install the latest version of RMAD on a new clean machine and perform a full replication. The Full replication feature allows you to create a full copy of the primary Recovery Manager console settings on the new console instance. This option is supported starting from Recovery Manager for Active Directory version 9.0.1. For details, see the *Full Replication* section in User Guide.

For Recovery Manager for Active Directory Disaster Recovery Edition, after upgrade of Recovery Manager for Active Directory it is recommended to upgrade the Secure Storage agent on the Secure Storage server to the

same version. With a hardened Secure Storage server, Recovery Manager for Active Directory does not automatically upgrade the agent and this must be completed with console (physical) access to the server.

NOTE | The Secure Storage server agent will continue to function when its version does not match the version of the RMAD console but new functionality may be lost.

Additional resources

Additional information is available from the following:

- Online product documentation [Support Portal](#)
- Recovery Manager Community <https://www.quest.com/community/products/recovery-manager/f/forum>

Globalization

This section contains information about installing and operating this product in non-English configurations, such as those needed by customers outside of North America. This section does not replace the materials about supported platforms and configurations found elsewhere in the product documentation.

This release is Unicode-enabled and supports any character set. In this release, all product components should be configured to use the same or compatible character encodings and should be installed to use the same locale and regional options. This release is targeted to support operations in the following regions: North America, Western Europe and Latin America, Central and Eastern Europe, Far-East Asia, Japan.

Third-Party Contributions

This product contains the third-party components listed below. For third-party license information, go to <https://www.quest.com/legal/third-party-licenses.aspx>. Source code for components marked with an asterisk (*) is available at <http://opensource.quest.com>.

List of third-party contributions

Component	License or acknowledgment
7-ZIP 19.0	Copyright 1999-2019 Igor Pavlov Copyright 2015-2016 Apple Inc. All rights reserved.
AeroWizard 2.2.3	MIT 1.0
AWSSDK.Core 3.7.9.2	Apache 2.0
AWSSDK.S3 3.7.8.12	Apache 2.0
Azure.Storage.Common 11.2.3	MIT Template 2020
Boost 1.72.0	Boost 1.0
EntityFramework 6.4.4	Apache 2.0
Fody 4.2.1	MIT
FontAwesome.WPF 4.7.0.9	MIT

Component	License or acknowledgment
Group Controls 1.8	Apache 2.0 Copyright Notice - Group Controls 1.5.3
Microsoft.Azure.Storage.Blob 11.2.3	MIT Template 2020
Microsoft.Dism 2.0.20	MIT
Microsoft.PowerShell.3.ReferenceAssemblies 1.0.0	MIT
Microsoft.Xaml.Behaviors.Wpf 1.1.19	MIT
MinHook 1.3.2.1	MinHook 1.0 Copyright 2009 Tsuda Kageyu All rights reserved.
MinHook 1.3.3	MinHook 1.0 Copyright 2009 Tsuda Kageyu All rights reserved.
Newtonsoft.Json.dll 6.0.6	MIT
PropertyChanged.Fody 2.6.1	MIT
RazorEngine 3.10.0	Apache 2.0
SQLiteCodeFirst 1.7.0.34	Apache 2.0
SSH.Net 2016.1.0.2016.1.0	MIT
System.Management.Automation 6.2.2	MIT Template 2020
System.ValueTuple 4.5.0	MIT 1.0
TaskScheduler 2.8.18	MIT
Task Scheduler Managed Wrapper 2.8.18	MIT
TimeSpan Helper Library 2.2.2.0	New BSD N/A
Windows Installer XML Toolset (aka WiX) 3.14	Microsoft Reciprocal License (MS-RL) N/A af-ComputerCollections
ZLib 1.1.4	Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

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