

Quest Recovery Manager for Active Directory
Disaster Recovery Edition 10.2

Release Notes



© 2021 Quest Software Inc.

ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.

Attn: LEGAL Dept

4 Polaris Way

Aliso Viejo, CA 92656

Refer to our Web site (<https://www.quest.com>) for regional and international office information.

Patents

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <https://www.quest.com/legal>.

Trademarks

Quest, the Quest logo, and Join the Innovation are trademarks and registered trademarks of Quest Software Inc. For a complete list of Quest marks, visit <https://www.quest.com/legal/trademark-information.aspx>. All other trademarks and registered trademarks are property of their respective owners.

Updated – July 28, 2021

Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.2

Release Notes

These release notes provide information about the Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.2 release.

- [New Features and Enhancements](#)
- [Resolved Issues](#)
- [Security Fixes](#)
- [Known Issues](#)
- [System Requirements](#)
- [Product Licensing](#)
- [Getting Started with Recovery Manager for Active Directory](#)
- [Globalization](#)
- [Third-Party Contributions](#)

About Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.2

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 10.2 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 10.2.

What's New

Recovery Manager for Active Directory 10.2

Secure Storage Server

Recovery Manager for Active Directory now has the ability to harden a server and securely store backups on it for use in a disaster recovery scenario.

Microsoft® Azure Virtual Machine Creation

Recovery Manager for Active Directory now supports the creation of Microsoft® Azure resources including virtual machines during a Forest Recovery.

Enhancements

General

Enhancement	ID (old)	ID (new)
Recovery Manager for Active Directory 10.2		
Rename system state backups to Active Directory backups	RMADFE-3009	ADO-218405
Hide the "Components" tab in computer collection settings	RMADFE-3042	ADO-218415
SCOM 2019 support	N/A	ADO-219783
Pass through Synchronize across time zones from windows task scheduler to RMAD	RMADFE-952	ADO-220703
Create Logs Daily to be on by default	N/A	ADO-223980
Display operating system version for all backups	N/A	ADO-228741
Recovery Manager for Active Directory 10.1.1		
Support LDAP over SSL (LDAPS) to encrypt Active Directory connection for online restore of backups. This includes full support for both agent-based and agentless online restores of Active Directory objects and a new global option to specify SSL connection (select the Use Secure Socket Layer (SSL) to encrypt the connection check box in the Recovery Manager for Active Directory Settings dialog).	RMADFE-823	ADO-222475
Run PowerShell scripts before and after creating a backup. This option allows you to customize your environment by running PowerShell scripts before and/or after creating a backup. Custom scripts can be launched either on the Recovery Manager for Active Directory Console machine or on the domain controller side.	RMADFE-2281	ADO-218304

Forest Recovery Edition

Enhancement	ID (old)	ID (new)
Recovery Manager for Active Directory 10.2		
Forest Recovery simulation mode available	RMADFE-920	ADO-218277
The 'View Recovery Report' action should be available as one of the post recovery dialog actions	RMADFE-3034	ADO-218413
Encrypt credentials in Forest Recovery project using AESCryptoServiceProvider instead of TripleDESCryptoServiceProvider	RMADFE-2199	ADO-220948
Allow RMAD backup to continue if forest recovery agent cannot be installed	N/A	ADO-221433
Set default global catalog handling option to "Keep GC Intact"	N/A	ADO-223871
Show 'object's tombstone is expired' detailed warning in the Online Restore Wizard	RMADFE-1613	ADO-223987
Default recovery method to the Repromotion phase should be "Install AD", not "ReinstallAD"	N/A	ADO-234195
Tool to update backup creation date in simulation projects	N/A	ADO-234197
Keep previous recovery methods when changing recovery mode like Forest Recovery --> Repromotion --> Forest Recovery	N/A	ADO-234201
Every DC in simulation project should have a backup created for this domain controller so all recovery methods are available	N/A	ADO-234203
Recovery Manager for Active Directory 10.1.1		
ADVL automatic DNS selection doesn't work if no target item has preferred DNS.	RMADFE-3250	ADO-218271
Support LDAP over SSL (LDAPS) for Forest Recovery Edition, including the ability to select SSL connection when connecting to a forest in the Recovery Manager console.	RMADFE-823	ADO-218354
Creating Recovery Media (ISO) enhancement - use custom WinRE.wim image	RMADFE-3126	ADO-218437

Disaster Recovery Edition

Enhancement	ID (old)	ID (new)
Recovery Manager for Active Directory 10.2		
The current image file is not recreated if the file is not older than X days and the version of the Forest Recovery agent and network settings are not changed	N/A	ADO-218323

Enhancement	ID (old)	ID (new)
Document how to pre-configure clean external DNS server which is used for BMR or Clean OS recovery	RMADFE-3110	ADO-218435
Show computer collection type (system state/BMR) in the RMAD console collections grid	RMADFE-3228	ADO-218917
In "Restore to Clean OS" we need to disable Windows Updates before promoting machine to DC	N/A	ADO-229862
Recreate ISO when third-party drivers added or removed	N/A	ADO-230402
Log the recovery event with source disk configuration information	N/A	ADO-230457
Validate source and target disks layout match	N/A	ADO-230963

Resolved Issues

General Resolved Issues

Resolved Issue	ID (old)	ID (new)
Recovery Manager for Active Directory 10.2		
Security Vulnerability - Sensitive comments embedded within client-side code sent to an end user machine	RMADFE-3244	ADO-218142
Security Vulnerability - Runtime hardening (SEP, ASLR and other)	RMADFE-3248	ADO-218146
Full replication fails when a DC is selected for the option 'Unpack each backup upon its creation' in the master console	RMADFE-1858	ADO-218500
Storage agent settings are not applied on install	N/A	ADO-219910
No progress/wait indication after clicking 'OK' on the 'Add Console...' dialog	N/A	ADO-224321
Backup fails if the Domain Controllers OU has a AzureADKerberos computer object in it as part of Azure AD FIDO deployment	N/A	ADO-227903
Improve documentation with information on number of scheduled computer collections for optimal performance	N/A	ADO-232614
Access Violation in the ProcessRequest function and crashes service	N/A	ADO-232682
Remove mutual exclusion mechanism between replication process and restore process	RMADFE-1575	ADO-237972

Resolved Issue	ID (old)	ID (new)
Display correct backup info and support restore for Collections with containers (not DCs)	N/A	ADO-240580
Retriable VSS error causes undefined behavior in Backup Agent on retry	N/A	ADO-241825
Modify the configuration to remove collision problems with SHA1, moved to SHA256	N/A	ADO-253913
Retention policy ignores collection and consider backups of all collections	N/A	ADO-259645
Recovery Manager for Active Directory 10.1.1 HF1		
RMAD console crashes while building comparison report.	N/A	ADO-240300
Recovery Manager for Active Directory 10.1.1		
Agent-based online restore can result in Isass process crash.	RMADFE-3233	ADO-218222
Unable to restore AD object when user provides smart card PIN and username hint.	RMADFE-3132	ADO-218574
Configuring a backup schedule is disabled when creating a backup from Recover Manager for Active Directory > Create Backup .	RMADFE-3260	ADO-219136
SCOM pack Get Collections call results in Access denied errors.	RMADFE-3025	ADO-220574
Increasing number of scheduled tasks makes Console, Replication, and Cmdlets extremely slow.	RMADFE-1837	ADO-223040
RMAD console crashed due to missing DLL Microsoft.Xaml.Behaviors.dll.	N/A	ADO-226682
After restore a User Object Member Of is different than in Active Directory	N/A	ADO-230090

Forest Recovery Resolved Issues

Resolved Issue	ID (old)	ID (new)
Recovery Manager for Active Directory 10.2		
Email notification template contains invalid text and status message	N/A	ADO-252659
Verification email contains incorrect backup data	N/A	ADO-252866
Creating ADVL fails when unable to access VConverter error	N/A	ADO-253382

Resolved Issue	ID (old)	ID (new)
Wrong replication partner is selected in IFM recovery on second phase. IFM failed	N/A	ADO-253681
IFM script does not automatically reboot DC after installed AD DS tools. IFM failed	N/A	ADO-253778
Install AD moethd on second pahse may fail with "Unable to connect to the replication source"	N/A	ADO-225791
IPSec isolation policy was not removed successfully when previous forst recovery is aborted and left dirt data	N/A	ADO-237004
IPSec isolation policy was not removed successfully during restore	N/A	ADO-237049
The "Reset computer account" operation fails when some other recovery operation failed and retried earlier	RMADFE-2659	ADO-242197
After upgrade from 10.1 to 10.1.1, the Verify Settings in Forest Recovery console send emails with some kind of strange status messages	N/A	ADO-242679
Recovery Manager for Active Directory 10.1.1 HF1		
Forest Recovery fails if the only drive encrypted with BitLocker is removed.	N/A	ADO-222308
Recovery Manager for Active Directory 10.1.1		
IPv6 based UNC Path support.	RMADFE-3232	ADO-218913
Scanning of all backups does not stop when one of the processes ends urgently.	N/A	ADO-219145
Errors when trying to restore SYSVOL: Need to improve the RPC stability.	N/A	ADO-228250
ADVl converter returns 500 error.	N/A	ADO-230091
Error when booting VM: "Invalid location type. Location accepts only VIDatastore objects."	N/A	ADO-233811

Disaster Recovery Resolved Issues

Resolved Issue	ID (old)	ID (new)
Recovery Manager for Active Directory 10.2		
An error "Index(zero based) must be greather than" during BMR recovery on the Restore disks step	N/A	ADO-218575
When processing Bare Metal Active Directory recovery for Korean Windows, it created error message in 'Run pre-recovery checks' step	N/A	ADO-219702

Resolved Issue	ID (old)	ID (new)
During BMR recovery restart domain controller in normal mode hanging	N/A	ADO-227232
"Collection diagnostic data" tool fails to collect data from target machine in Clean OS and BMR modes	N/A	ADO-227427
Cannot bind parameter 'DomainMode' to the target error	N/A	ADO-232543
DC restored with 'Restore to Clean OS' method from backup without DNS partition should not be selected as Primary DNS server	RMADFE-3100	ADO-242133
Recovery Manager for Active Directory 10.1.1 HF1		
Restore to clean OS fails if original DC has encrypted volumes.	RMADFE-2857	ADO-232951
Recovery Manager for Active Directory 10.1.1		
Impossible to collect an encrypted BMR backup when Bitlocker was hardened by GPOs.	RMADFE-3212	ADO-218269
Cannot create BMR backup for the domain controller with Data Duplication enabled on a non-critical volume.	RMADFE-3211	ADO-218929
Impossible to collect an encrypted BMR backup when GPO "Choose drive encryption method and cipher strength (Windows 10 [Version1511] and later)" is set.	RMADFE-3213	ADO-219148
Error when processing Bare Metal Active Directory Recovery in Forest Recovery Console.	N/A	ADO-222538
"Invalid server certificate" error occurs when connecting to vCenter.	N/A	ADO-227404
Bare Metal Recovery fails with error "The process terminated unexpectedly" if the target disk is too small.	N/A	ADO-230712
Permissions applied based on current documentation and BMR restore does not work - no access to list data stores.	N/A	ADO-232623

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)	ID (new)
Recovery Manager for Active Directory 10.2		
Eliminate SHA1 signing certificates and only accept SHA256 certificates.	RMADFE-2896	ADO-218357

Security Resolved Issue	ID (old)	ID (new)
FIPS: Encrypt credentials stored in Forest Recovery project using AESCryptoServiceProvider instead of TripleDESCryptoServiceProvider.	RMADFE-2199	ADO-220948

Known Issues

General Known Issues

Known Issue	ID (old)	ID (new)
Cannot perform RMAD upgrade if the SQL Server Always On group is enabled for the reporting database.	RMADFE-1146	ADO-220503
When a user cancels the data replication process by Ctrl + C, by logoff, etc, the status of the replication session is stuck at "Running".	RMADFE-1271	ADO-220508
Customer can add a few instances of the same RMAD console (by domain name and by IP).	RMADFE-1276	ADO-220509
Cannot disable replication schedule when there is no replication console (the replication console was deleted).	RMADFE-1283	ADO-220511
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	ADO-220570
Recovery Manager for Active Directory does not show changes to GPO administrative templates in the GPO comparison report.	RMADFE-805	ADO-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	ADO-226664
Online Restore Wizard (agent-based restore) does not work on Windows Server 2016 with Local Security Authority (LSA) protection and Secure Boot enabled.	RMADFE-1996	ADO-226670
Recovery Manager Portal upgrade fails when upgrading from 10.1 HF1 or earlier to 10.1 HF2 or later. You must reinstall the Recovery Manager Portal when upgrading instead.	RMADFE-3122	ADO-229151

Forest Recovery Known Issues

Known Issue	ID (old)	ID (new)
SYSVOL may not work correctly if a domain controller that was selected for the authoritative SYSVOL restore cannot be restored.	RMADFE-1111	ADO-220501
Recovery Manager for Active Directory Forest Edition (Disaster Recovery Edition) does not check version of Forest Recovery Agent inside the ISO image file.	RMADFE-2220	ADO-226671
The start type of Windows Defender Firewall service cannot be restored in Windows Server 2019.	RMADFE-2228	ADO-226672

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 Forest Edition can backup and restore domain controllers that are running on virtual machines in Amazon Web Services (AWS) or Microsoft Azure. Note that such domain controllers cannot be restored with the Bare Metal Active Directory Recovery method because there is no way to boot them from an ISO image.

Recovery Manager for Active Directory requirements

Processor

Minimum: 1.4 GHz

Recommended: 2.0 GHz or faster

Memory

Minimum: 1 GB

Recommended: 2 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 512 MB 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 40MB 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 2019
- Microsoft Windows Server 2016
- Microsoft Windows Server 2012 R2 with or without any Service Pack
- Microsoft Windows Server 2012 with or without any Service Pack
- Microsoft Windows 10 x64
- Microsoft Windows 8.1 x64 with or without any Service Pack

Targets for backup, restore, or compare operations

- Microsoft Windows Server 2019 including Server Core installation
- Microsoft Windows Server 2016 including Server Core installation
- Microsoft Windows Server 2012 R2 with or without any Service Pack (including Server Core installation)
- Microsoft Windows Server 2012 with or without any Service Pack (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.

Microsoft .NET Framework

Microsoft .NET Framework version 4.5.2 or higher

Microsoft .NET Framework version 4.7.2 or higher is required for use of Microsoft Azure virtual machines with Restore Active Directory to Clean OS recovery method

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, Forest Recovery Persistence and Recovery Manager Portal.

Supported SQL Server versions:

- Microsoft SQL Server 2019 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)
- Microsoft SQL Server 2017 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)
- Microsoft SQL Server 2016 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)
- Microsoft SQL Server 2014 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)

- Microsoft SQL Server 2012 with or without any Service Pack (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 2016
- Microsoft System Center Operations Manager 2012 R2
- Microsoft System Center Operations Manager 2012 SP1
- Microsoft System Center Operations Manager 2012

Microsoft Windows PowerShell

Microsoft Windows PowerShell version 5.0 or later

Microsoft Windows Installer

Microsoft Windows Installer 4.5

Microsoft Management Console

Microsoft Management Console 3.0

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.

Antivirus software that is supported for backup antimalware checks

The anti-virus checks are performed on the Forest Recovery Console machine running Windows Server 2016 or higher by means of antivirus software installed on the machine.

- Microsoft Defender
- Symantec Endpoint Protection 14.x
- Broadcom Endpoint Security (former name: Symantec Endpoint Protection 15)

Supported server management systems

- Integrated Dell Remote Access Controller (iDRAC) 8 and 9
- HP ProLiant iLO Management Engine (iLO) 3, 4 and 5
- VMware vCenter/ESX Server 6.0, 6.5, 6.7 and 7.0
- Microsoft Hyper-V Server 2012 or higher

Forest Recovery Agent requirements

Memory

256 MB (1 GB recommended)

Hard disk space

2 GB or more

Operating system

One of the following operating systems:

- Microsoft Windows Server 2019 including Server Core installation
- Microsoft Windows Server 2016 including Server Core installation
- Microsoft Windows Server 2012 R2 with or without any Service Pack (including Server Core installation)
- Microsoft Windows Server 2012 with or without any Service Pack (including Server Core installation)

Prerequisite software

Microsoft Windows Installer 4.5 or later must be installed.

Active Directory Virtual Lab requirements

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

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 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/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/vCenter server.
- Active Directory Virtual Lab does not support VMware ESXi 6.0.
- vCenter Converter 6.2 must be installed in your environment using the Client-Server installation setup option.
- vCenter Converter must be accessible to the Active Directory Virtual Lab.
- If the TLS 1.0 protocol is disabled on vCenter Converter and vCenter servers, then switch to TLS 1.2 on the ADVL server. For more details, see the following KB articles:
 - <https://kb.vmware.com/s/article/2145796>.
 - <https://docs.microsoft.com/en-us/security-updates/SecurityAdvisories/2015/2960358>

Recovery Manager Portal requirements

Processor

1 GHz or faster

Memory

512 MB or more

Hard disk space

2 GB or more

Operating system

You can install the Recovery Manager Portal on a computer running one of the following x64 operating systems:

- Microsoft Windows Server 2019
- Microsoft Windows Server 2016
- Microsoft Windows Server 2012 R2 with or without any Service Pack
- Microsoft Windows Server 2012 with or without any Service Pack

Supported Web Browsers

- Microsoft Internet Explorer
- Google Chrome

Microsoft .NET Framework

Microsoft .NET Framework version 4.5.2 or higher

Microsoft Internet Information Server (IIS)

Microsoft Internet Information Services (IIS) 8.5 or higher

Microsoft SQL Server and its components

Microsoft SQL Server versions

One of the following versions is required:

- Microsoft SQL Server 2019 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)
- Microsoft SQL Server 2017 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)
- Microsoft SQL Server 2016 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)
- Microsoft SQL Server 2014 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)
- Microsoft SQL Server 2012 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)

Required 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.

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 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, Recovery Manager for Active Directory 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 for Active Directory 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 supports a direct upgrade from version 10.0 and higher. If you have an earlier version of Recovery Manager for Active Directory, 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 Recovery Manager for Active Directory 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.

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 <http://quest.com/legal/license-agreements.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
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
Group Controls 1.8	Apache 2.0 Copyright Notice - Group Controls 1.5.3
Microsoft.Dism 2.0.20	MIT
Microsoft.PowerShell.3.ReferenceAssemblies 1.0.0	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
TaskScheduler 2.8.18	MIT
Task Scheduler Managed Wrapper 2.8.18	MIT

Component	License or acknowledgment
TimeSpan Helper Library 2.2	New BSD N/A
Windows Installer XML Toolset (aka WiX) 3.14	Microsoft Reciprocal License (MS-RL) N/A
ZLib 1.1.4	zlib 1.2.3

zlib 1.2.3 License

License

/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.3, July 18th, 2005

Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly jloup@gzip.org

Mark Adler madler@alumni.caltech.edu

*/

MinHook - The Minimalistic API Hooking Library for x64/x86

Copyright (C) 2009-2016 Tsuda Kageyu.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright

notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on

electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

1. You must give any other recipients of the Work or Derivative Works a copy of this License; and
2. You must cause any modified files to carry prominent notices stating that You changed the files; and
3. You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
4. If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Quest provides software solutions for the rapidly-changing world of enterprise IT. We help simplify the challenges caused by data explosion, cloud expansion, hybrid datacenters, security threats, and regulatory requirements. We are a global provider to 130,000 companies across 100 countries, including 95% of the Fortune 500 and 90% of the Global 1000. Since 1987, we have built a portfolio of solutions that now includes database management, data protection, identity and access management, Microsoft platform management, and unified endpoint management. With Quest, organizations spend less time on IT administration and more time on business innovation. For more information, visit www.quest.com.

Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product.