Quest Recovery Manager for Active Directory Disaster Recovery Edition 10.2.2

Release Notes

Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.2.2

Release Notes

These release notes provide information about the Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.2.2 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 10.2.2

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 10.2.2 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 10.2.2.

Major Features

AWS S3 Cloud Storage

In Recovery Manager for Active Directory Disaster Recovery Edition, AWS S3 is now available to be added in the Cloud Storage.

In Recovery Manager for Active Directory Disaster Recovery Edition, RMAD PowerShell® cmdlets are available to add, edit and remove the AWS S3 Cloud Storage.

Pause Recovery for Remediation

A recovery in DSRM can now be paused during the recovery to allow user interaction with the recovery items for such actions as malware scanning of an image.

Secure Storage Server Maintenance

New support for Secure Storage server maintenance without unhardening via PowerShell® cmdlets.

New On Demand Recovery Integration and Deprecation of Recovery Manager Portal

Recovery Manager for Active Directory is introducing a new configuration UI for Integration with On Demand Recovery. Configuration is available with a new node, Hybrid Recovery, in the Recovery Manager console. To enable integration with On Demand Recovery, see the section on the Hybrid Connector in the RMAD User Guide for further information on settings. To support hybrid recovery and communication with On Demand Recovery a new service is available – Quest Recovery Manager Hybrid Connection. To install the new service, select the installer option Recovery Manager Hybrid Connection during installation of the Recovery Manager server and console.

The Recovery Manager Portal, which enabled intranet users to use a Web browser to access the search and restore functionality is being deprecated. By providing configuration for On Demand Recovery Integration in the Recovery Manager console, installation and setup of the Recovery Manager Portal is no longer required to have Hybrid recovery support. There will not be a 10.2.2 version of the Recovery Manager Portal. Backward compatibility will be supported to continue to use earlier versions of the portal with an upgraded Recovery Manager server.

The new Hybrid Connector can be configured via the RMAD PowerShell® API.

Microsoft .NET 4.8 Requirement

Recovery Manager for Active Directory needs Microsoft .NET 4.8 as a requirement for install. A check is performed during installation to confirm .NET 4.8 is install on the system. If not, a pop up dialog will appear requesting .NET 4.8 be installed on the system.

Full support for group Managed Service Accounts (gMSA)

Full support for gMSA accounts is now available for use in Recovery Manager for Active Directory, Recovery Manager for Active Directory Forest Edition and Recovery Manager for Active Directory Disaster Recovery Edition. This support includes but is not limited to, gMSA accounts to verify FE projects by schedule; use a gMSA account from one domain as the agent account for backing up DCs in a different domain; replication for console connection; gMSA for setting up replication; and gMSA to run PS custom scripts.

Enhancements

General

Enhancement	ID (old)	Azure DevOps
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
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

Forest Recovery Edition

Enhancement	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.2.1		
Automatically enable File and Printer Sharing on the clean OS machine when installing FR agent	RMADFE-2778	242106
RMAD Console and Forest Recovery Agent cannot read AD configuration with more than 1000 sites	N/A	274279
Recovery Manager for Active Directory 10.2		
Forest Recovery simulation mode available	RMADFE-920	218277
The 'View Recovery Report' action should be available as one of the post recovery dialog actions	RMADFE-3034	218413
Encrypt credentials in Forest Recovery project using AESCryptoServiceProvider instead of TripleDESCryptoServiceProvider	RMADFE-2199	220948
Allow RMAD backup to continue if forest recovery agent cannot be installed	N/A	221433
Set default global catalog handling option to "Keep GC Intact"	N/A	223871
Show 'object's tombstone is expired' detailed warning in the Online Restore Wizard	RMADFE-1613	223987
Default recovery method to the Repromotion phase should be "Install AD", not "ReinstallAD"	N/A	234195
Tool to update backup creation date in simulation projects	N/A	234197
Keep previous recovery methods when changing recovery mode like Forest Recovery --> Repromotion --> Forest Recovery	N/A	234201
Every DC in simulation project should have a backup created for this domain controller so all recovery methods are available	N/A	234203

Disaster Recovery Edition

Enhancement	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.2.2		
Allow UI to configure different criteria for BMR backups vs system state backups	N/A	318213
As a RMAD DRE user I have an option to add and remove an AWS S3 storage location under the storage node	N/A	329448
As a RMAD PowerShell user I can use a PowerShell cmdlet to add/remove/edit AWS S3 storage	N/A	329452

Enhancement	ID (old)	Azure DevOps
Ability to pause recovery in DSRM mode	N/A	333756
Secure Storage: support secure storage server maintenance without unhardening	N/A	353018
Forest level option to pause recovery in DSRM mode	N/A	358283
Recovery Manager for Active Directory 10.2.1		
Support console local storage as a primary storage for copying to Secure Storage server	N/A	280129
Smart instance type selection for Azure virtual machine creation with Restore to Clean OS feature	N/A	281406
In the Secure Storage node provide ability to sort/filter/group backups in the RMAD console	N/A	278538
As a part of server hardening check server and do not allow a domain joined server. Secure Storage agent will not be installed	N/A	258979
Ability to configure volume for backups on Secure Storage server. Default to copy backups to non system drives.	N/A	276487
Option to specify static IPs for Azure virtual machine creation	N/A	315595
Improvement for template selection in Restore to Clean OS	N/A	297078
Support verify for 'Restore to Clean OS' on live DCs, show warning when live DC is contacted	RMADFE-2933	218376
Show free disk space and warning when space is low for volumes on Secure Storage server	N/A	227980
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	218323
Document how to pre-configure clean external DNS server which is used for BMR or Clean OS recovery	RMADFE-3110	218435
Show computer collection type (system state/BMR) in the RMAD console collections grid	RMADFE-3228	218917
In "Restore to Clean OS" we need to disable Windows Updates before promoting machine to DC	N/A	229862
Recreate ISO when third-party drivers added or removed	N/A	230402
Log the recovery event with source disk configuration information	N/A	230457
Validate source and target disks layout match	N/A	230963

Resolved Issues

General Resolved Issues

Resolved Issues	ID (old)	Azure DevOps
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
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

Resolved Issues	ID (old)	Azure DevOps
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
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		

Resolved Issues	ID (old)	Azure DevOps
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
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

Forest Recovery Resolved Issues

Resolved Issue	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.2.2		
Installing Forest Recovery agent hangs if SMB shares are disabled	N/A	285225
Antivirus scanning failed with 'Path too long' error	N/A	324610
FRConsole broken due to undocumented new System Requirements for FR Console	N/A	325287
FR Console Crashes after recovery cancellation	N/A	363341
Recovery Manager for Active Directory 10.2.1 Hotfix 2		
Install AD/IFM operation may fail unable to bind replicationPartner parameter	N/A	356459

Resolved Issue	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.2.1 Hotfix1		
Forest Recovery Console takes a long time to apply backup selection criteria	N/A	322570
Online Restore Wizard cannot connect to Change Auditor database if the agent-based method is selected	N/A	325775
Verify Setting may fail at pre-recovery checking DSRM password	N/A	328446
Protect object from accidental deletion prevents Metadata Cleanup from removing DC computer object	N/A	330979
Recovery Manager for Active Directory 10.2.1		
Check Forest Health can get stuck on the second step	RMADFE-3041	218559
New recovery project, selecting a Backup display the adding time in the Backup Age column instead of backup age	N/A	237971
'There is no PREFERRED_DNS value' error occurs, if no DNS server is found on installing Active Directory	RMADFE-2437	242191
Feature loss in Forest Edition: Cannot skip a backup for non-authoritative DCs in Sysvol recovery mode	N/A	245551
'There is no PREFERRED_DNS value' error when a 'Select preferred DNS' agent operation did not return a result it causes product to halt and cannot be skipped or aborted	N/A	253457
Resume Forest Recovery show 'Password is incorrect'	N/A	254788
Installing Forest Recovery agent hangs if SMB shares are disabled	N/A	285225
Recovery Manager for Active Directory 10.2 Hotfix 1		
During upgrade a DBImport error occurs when antimalware status data exists. Caused by debug logging on by default.	N/A	274622
GPO Comparison Report is not working	N/A	278211
Recovery Manager for Active Directory 10.2		
Email notification template contains invalid text and status message	N/A	252659
Verification email contains incorrect backup data	N/A	252866
Creating ADVL fails when unable to access VConverter error	N/A	253382
Wrong replication partner is selected in IFM recovery on second phase. IFM failed	N/A	253681
IFM script does not automatically reboot DC after installed AD DS tools. IFM failed	N/A	253778

Resolved Issue	ID (old)	Azure DevOps
Install AD method on second phase may fail with "Unable to connect to the replication source"	N/A	225791
IPSec isolation policy was not removed successfully when previous forest recovery is aborted and left dirt data	N/A	237004
IPSec isolation policy was not removed successfully during restore	N/A	237049
The "Reset computer account" operation fails when some other recovery operation failed and retried earlier	RMADFE-2659	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	242679

Disaster Recovery Resolved Issues

Resolved Issue	ID (old)	Azure DevOps
Recovery Manager for Active Directory 10.2.2		
Online restore with agent failed with the error code "The operation completed successfully"	N/A	231815
Replication health check hangs if some replication neighbors cannot be contacted	RMADFE-2841	242201
The "Ensure that domain controller isolation is disabled" Clean OS operation might stuck	N/A	273396
Unisolate step hangs indefinitely during Clean OS recovery if FW turned on by GPO	N/A	320773
Azure VM creation fails on generating service principal with "cannot call method on a null-valued expression"	N/A	333691
Windows Server Backup (BMR) Verify doesn't work on non-English windows	N/A	355867
Unable to install Secure Storage Agent on non-English server	N/A	361135
Clean OS recovery. Ensure Sysvol replication engine is initialized completely before proceeding to backup recovery	N/A	363117
Mapping of same share takes a long time in sequential order if it has already been mapped under another user	N/A	364473
Azure VM creation: Unable to configure VPN connection if target network has multiple subnets	N/A	364504
Automatic boot of VMWare VM may fail on uploading ISO file to the datastore	N/A	364508
Recovery Manager for Active Directory 10.2.1 Hotfix 2		
Restore to clean OS may fail with "More data is available" error	N/A	323968

Resolved Issue	ID (old)	Azure DevOps
Verification fails with 80+ AD DCs in parallel	N/A	346048
Recovery Manager for Active Directory 10.2.1 Hotfix1		
RMAD VSS backup might be corrupted, no errors is reported	RMADFE-2794	242199
BMR recovery may fail at ISO image creation with "Access to the share path is denied" error	N/A	321726
Regression on 220573: Should allow Console Storage unselection immediately	N/A	324331
Wrong disk free space calculation in Clean OS verify and recovery workflows	N/A	324353
Secure Storage Server - copying multiple backups at same time to new secure storage server folder can lead to error	N/A	326044
"EFI secure boot could be enabled only on EFI firmware" error when creating VMWare virtual machine	N/A	329480
Fix "Including additional volumes to a BMR backup" documentation	N/A	348727
Recovery Manager for Active Directory 10.2.1		
Cache and reuse the extracted WinRE images	RMADFE-3206	218577
Health Check wizard should work after Restore to Clean OS	N/A	226971
Bare Metal Recovery backup does not work with SAN policy set to OfflineAll	RMADFE-1955	242174
Restore Clean OS failed if original DC has encrypted volumes	RMADFE-2857	242202
Recreate ISO when third-party drivers added or removed	RMADFE-2928	242204
Installing Active Directory may fail with access denied due to lack of permissions to write the objects into Computers OU. To workaround, user must set the *JoinDomainBeforeInstallAD* option to True in FRConsoleSettings.xml file. This will skip joining OU Computers during the promotion of the DC and join it directly to OU Domain Controllers.	RMADFE-3101	242598
Incorrect filtering of backups on the secure storage server	N/A	278874
Password showing in clear text for event id 403, showing PowerShell script name, the user name, and password	N/A	281399
Project verification with Zero touch configured reboots the working servers to WinRE mode	N/A	283230
Unable to verify settings if Azure virtual machine exists or is shut down	N/A	304177
Forest Recovery with VMWare machine creation fails if source has BIOS firmware and more than one critical disk	N/A	313724

Resolved Issue	ID (old)	Azure DevOps
Console crashes if storage server refresh fails when secure storage backups node is selected	N/A	315182
Failed to establish DNS configuration after recovery with Azure virtual machine	N/A	318396
Failed to prepare infrastructure on Azure VM with 'QuestSoftware.RecoveryManager.AD.ForestRecovery.LocalizableException: Cannot find path because it does not exist' message	N/A	318660
Change the warning which explains that the recovery ISO should be dismounted	N/A	318768
Error message prompting the user failed because the host program or the command type does not support user interaction, after failing to create VM in Azure and Retry All operations for a specific DC	N/A	319038
Cannot validate argument on parameter 'VM'. The argument is null or empty	N/A	319040
Unable to access the backup on Azure file share during Clean OS Restore to Azure VMs	N/A	304022
For Azure VM creation, a cloned Infrastructure platform template is not automatically selected on the infrastructure tab after Service Principle generation	N/A	259493
Azure VM creation does not work with Az Powershell module 7.0.0. API changes in Service principal management cmdlets used by RMAD.	N/A	323193
Recovery Manager for Active Directory 10.2 Hotfix 1		
Zero touch against Dell server not working. Forward slash in the ISO access credentials is required.	N/A	274417
Integrity check may fail if the storage server is registered using an IP address	N/A	274471
Double backslash in the backup path on the storage server causes failure	N/A	274472
Cannot perform BMR restore in 10.2 if the source machine is BIOS with a SCSI boot volume	N/A	277893
"System.ArgumentException: An item with the same key has already been added" error during BMR recovery when multiple DCs configured to boot using iLO	N/A	282728
Dell and HP ZeroTouch settings are converted to templates on upgrade	N/A	283208
Template selection and configuration usability improvements and clarification with better text	N/A	297078
Recovery Manager for Active Directory 10.2		
An error "Index(zero based) must be greater than" during BMR recovery on the Restore disks step	N/A	218575
When processing Bare Metal Active Directory recovery for Korean Windows, it created error message in 'Run pre-recovery checks' step	N/A	219702
During BMR recovery restart domain controller in normal mode hanging	N/A	227232

Resolved Issue	ID (old)	Azure DevOps
"Collection diagnostic data" tool fails to collect data from target machine in Clean OS and BMR modes	N/A	227427
Cannot bind parameter 'DomainMode' to the target error	N/A	232543
DC restored with 'Restore to Clean OS' method from backup without DNS partition should not be selected as Primary DNS server	RMADFE-3100	242133

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 10.2.1		
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
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
Online Restore Wizard (agent-based restore) does not work on Windows Server® 2016 and Windows Server® 2019 with Local Security Authority (LSA) protection and Secure Boot enabled.	RMADFE-1996	226670

Forest Recovery Known Issues

Known Issue	ID (old)	Azure DevOps
Recovery Manager for Active Directory Forest Edition (Disaster Recovery Edition) does not check version of Forest Recovery Agent inside the ISO image file.	N/A	226671
The start type of Windows Defender Firewall service cannot be restored in Windows Server® 2019.	N/A	226672
Online restore wizard does not work on Windows 2022 with agent based restore and with LSA protection enabled	N/A	367163

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.

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> **NOTE** 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: 2GB

Recommended: 4GB

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: 2.7GB of free disk space

In case all the prerequisite software is already installed: 260MB 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 .NET Framework version 4.8 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 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.

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
- HPE® ProLiant® iLO Management Engine (iLO) 3, 4 and 5
- VMware vCenter® / VMware ESX® Server 6.0, 6.5, 6.7 and 7.0
- Microsoft Hyper-V® Server 2012 or higher

Forest Recovery Agent requirements

Memory

1GB (2GB recommended)

Hard disk space

2GB or more

Operating system

One of the following operating systems:

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

Secondary Storage requirements

Secure Storage Server

- 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

- 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.
- Azure® subscription(s) to create and manage Azure® Storage accounts and containers.
- A method of creating and managing Azure® 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
AutoFixture 4.12.0	MIT 1.0
AutoMapper 4.1.1	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
Microsoft.Azure.Storage.Blob 11.2.3	MIT Template 2020
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
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
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

Component	License or acknowledgment
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

About us

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.