

Quest Recovery Manager for Active Directory
Disaster Recovery Edition 10.1

Release Notes



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Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.1

Release Notes

These release notes provide information about the Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.1 release.

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About Quest® Recovery Manager for Active Directory Disaster Recovery Edition 10.1

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 10.1 is a maintenance 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 10.1.

Major Features

Recovery Manager for Active Directory 10.1 HF2

- **FEATURE PREVIEW: Support for Broadcom Endpoint Security** Recovery Manager for Active Directory supports malware scan for BMR and Active Directory backups using Broadcom Endpoint Security (former name: Symantec Endpoint Protection 15).

Recovery Manager for Active Directory 10.1 HF1

- **Convert Windows Server Backup to RMAD BMR Backup**
Support for native Windows Server backups by converting them to RMAD BMR backups using PowerShell API.
- **Support for VMware vCenter/ESX version 6.7 in Active Directory Virtual Lab**
Recovery Manager for Active Directory supports VMware vCenter/ESX version 6.7 for creating virtual test environments in Active Directory Virtual Lab.
- **Scan Active Directory backups for viruses**
Malware scan is now supported for Active Directory backups.
- **FEATURE PREVIEW: Support for Symantec Endpoint Protection version 14.x**
From this version, Recovery Manager for Active Directory supports malware scan for BMR and Active Directory backups using Symantec Endpoint Protection.

Recovery Manager for Active Directory 10.1

- **Restore Active Directory on Clean OS recovery method**
This recovery method lets you restore the entire forest or any of its parts on the freshly installed Windows machines. This recovery method can be used, for example, when existing BMR backups contain the infected OS image, but Active Directory backups are clean.
- **Scanning BMR backups for viruses**
Recovery Manager for Active Directory offers an option to scan BMR backups for malware using Microsoft Windows Defender to ensure secure recovery. Currently, Windows Defender antivirus is available only for Windows Server 2016 or later.
- **Support of HP ProLiant iLO Management Engine (iLO) for booting the HP server with the ISO file**
Now the process of booting the HP server with Quest Recovery Environment image can be automated by HP ProLiant iLO Management Engine (iLO). This option is available on the Hardware tab in Forest Recovery Console.
- **Support of Dell iDRAC for booting the Dell server with the ISO file**
Now the process of booting the Dell server with Quest Recovery Environment image can be automated by Dell Remote Access Controller (iDRAC). This option is available on the Hardware tab in Forest Recovery Console.
- **Support of VMware ESXi for booting the VMware virtual machine with the ISO file**
Now the process of booting the VMware virtual machine with Quest Recovery Environment image can be automated by VMware ESXi. This option is available on the Hardware tab in Forest Recovery Console.
- **Support of Microsoft Hyper-V for booting the virtual machine with the ISO file**
Now the process of booting the virtual machine with Quest Recovery Environment image can be

automated by Microsoft Hyper-V. This option is available on the Hardware tab in Forest Recovery Console.

- Support of custom management systems for booting the custom server with the ISO file**
 Now the process of booting the custom server with Quest Recovery Environment image can be automated by a custom management system. This option is available on the Hardware tab in Forest Recovery Console.
- Phased restore**
 This feature lets you perform the initial forest recovery during the first phase to make the forest function as soon as possible. The second phase can be postponed, and the full forest structure can be restored later.
- Install AD and Reinstall AD recovery methods support read-only domain controllers and Install from Media (IFM)**
 Now the Install AD and Reinstall AD recovery methods support installing a read-only DC using a backup created from a read-only DC, or installing a writable DC using a backup created from a writable DC.
- Added support for SQL Server 2017 and 2019**
 From this version, Recovery Manager for Active Directory supports SQL Server 2017 and SQL Server 2019.

Enhancements

General

Enhancement	Story ID
Recovery Manager for Active Directory 10.1 HF2	
The computer collection type (System State and Bare Metal) is displayed in the Recovery Manager Console.	RMADFE-2133
The "PassedWithWarnings" antivirus scan status is shown if your antivirus database is older than the specified time limit. From this version, this limit is set to 3 days by default.	RMADFE-3230
Hide replication sessions older than X days shown under Replication > History in Recovery Manager Console Introduced a new registry key named "ReplicationSessionLimitDays" that allows you to specify the number of days (Default: 10). The new registry key only limits the replication history shown in the Recovery Manager Console, and it does not work with the relevant PowerShell cmdlets.	RMADFE-2910
Full replication: A user can view collection properties and global settings in the console that is used as a replication target. All of these settings are read-only, except Logging in global settings.	RMADFE-2874
Recovery Manager for Active Directory 10.1	
Alternative backup path An alternative backup location can be specified on the DC storage tab of the Collection Properties in Recovery Manager Console.	RMADFE-2280
Automatically refresh Computer Collections and Backups upon completion of replication The lists of Computer Collections and Backups can now automatically refresh in the target Recovery Manager Console when the replication completes	RMADFE-2872

Forest Recovery Edition

Enhancement	Story ID
Recovery Manager for Active Directory 10.1 HF2	
Opening large projects in the Forest Recovery Console is speeded up by running the DNS cache update in the background.	RMADFE-3107
Default states of checkboxes on the General tab now depend on the original DC type "Install the domain controller as a read-only" - This option is selected by default if the original DC was a read-only DC. Applicable methods include Install/Reinstall Active Directory, and Install/Reinstall Active Directory from Media. "Configure the domain controller as a global catalog server" - This option is selected by default if the original DC was a global catalog. Applicable methods include Install/Reinstall Active Directory, Install/Reinstall Active Directory from Media, and Restore Active Directory on Clean OS.	RMADFE-2904
Recovery Manager for Active Directory 10.1 HF1	
Auto-select a manually-registered backup for Install and Reinstall AD from Media recovery methods Now the Forest Recovery Console can automatically select a manually-registered backup for the recovery methods Install and Reinstall AD from Media.	RMADFE-2905
Active Directory backups for a DC with custom DNS suffix now contain correct domain names Now such Active Directory backups have correct domain names and can be selected for the recovery methods Install and Reinstall AD from Media in the Forest Recovery Console when performing forest recovery in an environment with disjoint namespace.	RMADFE-2850
Support for restore of custom Primary DNS suffixes for domain controllers from a disjoint namespace The Install Active Directory (including the Install from Media option) and Restore Active Directory on Clean OS recovery methods support restore of custom Primary DNS suffixes for domain controllers from a disjoint namespace.	RMADFE-2911
The Reset Passwords option is not available for the Repromotion mode The Reset Passwords dialog is not displayed during the Phase 2 recovery because this feature is not available for the Repromotion mode.	RMADFE-2903
Recovery Manager for Active Directory 10.1	
Support Windows Server 2019 domain controllers for System Center Virtual Machine Manager (SCVMM) Active Directory Virtual Lab supports Windows Server 2019 domain controllers only for SCVMM.	RMADFE-2171
Reset a password for domain users in privileged groups during forest recovery Recovery Manager for Active Directory now includes a new step "Reset Passwords" in the wizard after you start or resume a forest recovery. This step allows you to reset a password for domain users in privileged groups for security reasons.	RMADFE-1785

Disaster Recovery Edition

Enhancement	Story ID
Recovery Manager for Active Directory 10.1 HF1	
Search for BMR backups for an Active Directory with disjoint namespace works fine BMR backups for an Active Directory with disjoint namespace can be easily found in Forest Recovery Console.	RMADFE-2797

Enhancement	Story ID
Recovery Manager for Active Directory 10.1	
Third-party drivers can be added to Quest Recovery Environment This feature allows you to create the Quest Recovery Environment image supporting custom network cards and custom disks. This option is available on the Hardware tab in Forest Recovery Console.	RMADFE-2301
NIC teaming support Recovery Manager for Active Directory supports multiple network adapters.	RMADFE-2563

Resolved Issues

General Resolved Issues

Resolved Issue	Issue ID
Recovery Manager for Active Directory 10.1 HF2	
Cannot replicate a password from the E-mail tab in the Recovery Manager for Active Directory Settings dialog during full replication.	RMADFE-2999
Recovery Manager Console cannot replicate AD LDS (ADAM) instances from an untrusted domain in a collection.	RMADFE-3099
Recovery Manager Portal installation using SQL Server authentication fails with an error indicating the specified credentials do not have sufficient privileges on target SQL Server.	RMADFE-3064
Recovery Manager for Active Directory 10.1 HF1	
Now the backup collecting schedule can be configured for the selected day of the week.	RMADFE-3029
Recovery Manager for Active Directory does not restore GPO template files because they are considered as DFSR conflicts and are removed.	RMADFE-2800
The Group Policy Restore Wizard cannot connect to a domain controller because it mistakenly tries to connect to another domain controller that is not available.	RMADFE-2554
Full replication fails with the "No such host is known" error when the slave console has an unreachable DC in the Backup Agent Management list.	RMADFE-2625
The Online Restore Wizard cannot accept long paths (longer than 22 symbols) to the Change Auditor database.	RMADFE-2567
A list of registered backups opens with a delay in Online Restore Wizard.	RMADFE-2715
The text on the "Unpacked Backups" (global settings) tab in the "Settings" dialog box has been improved.	RMADFE-2775
Recovery Manager Console cannot replicate AD sites from an untrusted domain in a collection.	RMADFE-2844

Resolved Issue	Issue ID
Recovery Manager for Active Directory 10.1	
Recovery Manager for Active Directory uses the wrong credentials when applying a retention policy for backup storage on a domain controller.	RMADFE-2759
Now Recovery Manager for Active Directory opens the DIT database as Read/Write from backups made on other versions of the operating system.	RMADFE-2091
Online Restore Wizard does not work on Windows Server 2019 with LSA protection enabled.	RMADFE-2182
Recovery Manager Console may show empty license violation warning if licenses overused count is small.	RMADFE-2249
Unable to change the account name used for the restore operation.	RMADFE-2259
The specified port does not work for Offline Restore Agent.	RMADFE-2289
Now Recovery Manager for Active Directory does not show 'Boot Files' and 'IIS Metabase' backup components.	RMADFE-2343
Recovery Manager for Active Directory cannot process large .dit files.	RMADFE-2349
Recovery Manager for Active Directory does not restore attributes because of matching them as cloud attributes.	RMADFE-2499
Recovery Manager for Active Directory cannot backup a DC if SYSVOL is placed on a deduplicated volume.	RMADFE-2582
Recovery Manager for Active Directory cannot perform a lot of simultaneous backup sessions.	RMADFE-2732
Hybrid restore may not work on several versions of Azure AD Connect.	RMADFE-2750
Full replication fails when a DC is selected for the option 'Unpack each backup upon its creation' in the master console.	RMADFE-1858
Full replication fails with the error "No such host is known" when the slave console has an unreachable DC in the Backup Agent Management list.	RMADFE-2625

Forest Recovery Resolved Issues

Resolved Issue	Issue ID
Recovery Manager for Active Directory 10.1 HF2	
Restore to Clean OS does not restore SYSVOL contents if custom SYSVOL path was specified in the project settings.	RMADFE-3231

Resolved Issue	Issue ID
The "Verify selected DCs" operation shows zero progress for all other domain controllers.	RMADFE-2649
The "Elapsed time" counter in the Forest Recovery Console stops after DC failure even when the verify operation continues.	RMADFE-2925
When every DC in the domain is marked as "Do not recover" it implies that the domain will be removed during the recovery process. But it is a forest-wide operation and should be prohibited in the "Domain Recovery" mode.	RMADFE-2988
Forest Recovery Console cannot open a project file saved with UTF-8 BOM.	RMADFE-3083
Forest Recovery console mistakenly performs user authentication during health check for a read-only domain controller.	RMADFE-2015
Opening a saved project in Active Directory Virtual Lab fails with the "This implementation is not part of the Windows Platform FIPS validated cryptographic algorithms" error when FIPS compliance is enabled in the server where Recovery Manager Console is installed.	RMADFE-3060
DC access credentials cannot be reset if they are specified in the "domain\username" format on the General tab or on the Recovery Mode tab in the Recovery Project Settings dialog.	RMADFE-3104
If the domain access account is entered in the "domain\username" format on the General tab, this account will not be automatically excluded from the password reset operation when the "Reset password for domain users in privileged groups" option is enabled in the Reset Passwords dialog.	RMADFE-3189
Recovery Manager for Active Directory 10.1 HF1	
Forest Recovery scheduled verification fails if Persistence is enabled but the Persistence SQL server is not accessible.	RMADFE-2831
Reinstall of read-only DC may not work.	RMADFE-2996
Install Active Directory may fail due to the Select DNS operation cannot restart the Netlogon service.	RMADFE-3031
Forest Recovery Console correctly displays a type of scanned backup in warnings if the backup is infected.	RMADFE-3008
Recovery Manager for Active Directory should clean the 'selected backup' field in the Forest Recovery Console when no backups pass the backup selection criteria filter.	RMADFE-2932
Do not validate a backup password if the backup is not specified for the Install Active Directory or Reinstall Active Directory method.	RMADFE-2987
Cannot select the "Do nothing" option for a read-only domain controller (RODC) in the second phase.	RMADFE-2915
DNS A record of a domain may not be deleted during DNS cleanup.	RMADFE-2860
The "Install from Media" option on the General tab of the Forest Recovery Console gets unchecked when you check or uncheck the "Use backup criteria to automatically select a backup" option.	RMADFE-2906

Resolved Issue	Issue ID
In the "Adjust to Active Directory changes" recovery method only credentials in the Normal mode should be available.	RMADFE-2843
The CD-ROM device must be added (if it is absent on the source machine) to an instance converted with ADVL to install VMware Guest Tools on the target machine.	RMADFE-2786
It is required to limit the maximum number of automatically selected DNS servers on the domain controller.	RMADFE-2608
Automatic DNS configuration can choose an unrestored DNS server.	RMADFE-2714
Recovery Manager for Active Directory 10.1	
Settings verification may fail with "the same backup path specified" error while changing the recovery method from Install Active Directory from Media to Install/Reinstall/Uninstall Active Directory.	RMADFE-2137
NIC teaming is not supported in case of RMAD bare metal recovery to the same machine.	RMADFE-2139
Recovery Manager for Active Directory does not send the SMTP notification after the Verify settings operation is complete.	RMADFE-2181
In some cases, Forest Recovery may get stuck when BitLocker is enabled.	RMADFE-2420
The "No DNS servers specified in your recovery project" error might appear before starting recovery.	RMADFE-2482
Forest recovery may hang at the "Restart domain controller in normal mode" step with a disabled network adapter.	RMADFE-2546
Recovery with Install Active Directory or Install Active Directory from Media method may fail with the "Unable to check forest upgrade status" error at "Install Active Directory" step.	RMADFE-2552
Forest recovery for Read-only Domain Controller fails if the 'Install Active Directory' recovery method is used.	RMADFE-2568
Forest recovery for Read-only Domain Controller fails if the 'Reinstall Active Directory' recovery method is used.	RMADFE-2571
Automatic DNS configuration cannot handle loopback addresses in the DNS client settings.	RMADFE-2605
Automatic DNS selection can choose the wrong DNS server.	RMADFE-2633
Reboot to DSRM or reboot to Normal mode takes about 15 minutes doing nothing.	RMADFE-2655
Cannot recover Read-only DC using Reinstall Active Directory method on Windows Server 2012 R2 or higher systems.	RMADFE-2693
Cannot recover writable DC using Install Active Directory or Install From Media recovery method.	RMADFE-2703

Resolved Issue	Issue ID
DNS delegation does not work if it was configured before the forest recovery.	RMADFE-2789
The Forest Recovery Console refreshes status for all DCs in the "Manage Domain Controllers" dialog box when only one of them is selected to refresh.	RMADFE-2950

Disaster Recovery Resolved Issues

Resolved Issue	Issue ID
Recovery Manager for Active Directory 10.1 HF2	
The "An item with the same key has already been added" error may occur while verifying the recovery project with Bare Metal Active Directory Recovery.	RMADFE-3092
The "Another task is already in progress" error occurs when starting the VMWare virtual machine.	RMADFE-3229
Bare Metal Recovery project verification fails to process DNS IP addresses delimited with a comma followed by space.	RMADFE-3223
Restore to Clean OS may fail on the "reboot to Normal mode" operation.	RMADFE-3225
Server booting using Dell iDRAC fails with the "No suitable authentication method found to complete authentication" error.	RMADFE-3177
HP iLO server cannot be booted automatically.	RMADFE-3196
You may get "Object reference is not set to an instance of an object" error on the "Getting information about computer from backup" step.	RMADFE-3186
The IP address of the wrong NIC is used in the "Get information about computer from backup" verification step.	RMADFE-3112
The recovery method 'Restore AD on Clean OS' mistakenly uses the domain credentials to install Forest Recovery Agent while verifying project settings.	RMADFE-3033
Forest Recovery Console cannot use network credentials (non-Administrative) for a backup share due to malware scan of Active Directory backup.	RMADFE-3082
If the DC name is too long, the resulting path to the temporary folder that is used to extract backup files during the malware scan may exceed the limit and the backup files cannot be extracted.	RMADFE-3081
Scheduled BMR project verification does not use the latest backup.	RMADFE-3053
Malware scan result icon and tooltip are not refreshed in case of manual selection of BMR backup.	RMADFE-3039
Recovery Manager for Active Directory 10.1 HF1	

Resolved Issue	Issue ID
The UI controls that are associated with the Restore Active Directory on Clean OS recovery method are not disabled if the Disaster Recovery Edition license is not applied.	RMADFE-3054
Scheduled BMR project verification does not use the latest backup.	RMADFE-3044
When the "Use backup criteria to automatically select a backup" option is selected and you change the current recovery method to "Restore on Clean OS", the auto-selected backup will disappear.	RMADFE-3045
Recovery to Clean OS could fail for Windows Server 2012 DCs with FRS replication.	RMADFE-3037
The VM is not booted from the ISO file if the machine was previously restored using BMR recovery.	RMADFE-2942
The ISO file is not deleted from the VM storage location after recovery (Hyper-V, VMWare).	RMADFE-2941
Ensure that Windows Defender is not mentioned in the UI.	RMADFE-2887
Some passwords are logged in clear text for ZeroTouch operations (VMWare, Hyper-V).	RMADFE-2940
Unable to cancel the "waiting for recovery media" operation when the agent does not respond.	RMADFE-2837
The ISO file access credentials are not applied when booting a Hyper-V virtual machine.	RMADFE-2916
Bootting of a VMWare virtual machine may fail if the virtual machine name contains special symbols (e.g. dot).	RMADFE-2907
Parallel upload of the ISO file to the VMWare datastore may fail.	RMADFE-2899
Now Recovery Manager for Active Directory checks the required Windows version (2016 or higher) and returns an error message if needed during the antimalware scan.	RMADFE-2852
The Hardware settings in Forest Recovery Console must be disabled if there is no DRE license.	RMADFE-2848
Recovery Manager for AD generates too many progress logs in the event of a failure in creating a Bare Metal Recovery backup.	RMADFE-2439
Now BMR backups are read-only to ensure that they cannot be unintentionally modified during a malware scan.	RMADFE-2771
You may get a confusing event "Information about the computer was read from backup. Original IP address: N/A..." when the target network settings are explicitly specified.	RMADFE-2583
The misleading "Start-RMADFileSystemScan did not return a job" error may occur when scanning a BMR backup on Windows 2012 R2 - based DC or earlier.	RMADFE-2854
Recovery Manager for Active Directory 10.1	

Resolved Issue	Issue ID
There was the "Unable to rename backup media file..." error when something went wrong while creating the BMR backup.	RMADFE-2118
Now the 'wait for network' operation is retried automatically in Bare Metal Recovery Console.	RMADFE-2237
Disaster Recovery project verification fails if several DHCP name servers are configured for the domain controller.	RMADFE-2266
Forest Recovery Console shows the full path to the backup instead of the file name for Bare Metal Active Directory Recovery.	RMADFE-2272
Bare Metal Recovery Console cannot initialize the network adapter for unknown reasons. The "Waiting for connection on 0.0.0.0..." message is displayed.	RMADFE-2277
The "system cannot find the file specified" error occurs when extracting SYSVOL with long paths from the BMR backup.	RMADFE-2290
Now the Quest Recovery Environment image is updated automatically if the version of Forest Recovery Agent is newer.	RMADFE-2309
Bare Metal Recovery hangs on the "Restart DC in DSRM mode" step when DHCP is enabled on NICs.	RMADFE-2335
Bare Metal Recovery Console crashes on Windows Recovery Environment from Windows Server 2008 R2 Build 7600.	RMADFE-2401
BMR backup creation may fail with the "bad allocation" error.	RMADFE-2435
A blue screen with the 0xc00002e2 error can appear after bare metal recovery and restore from Active Directory backup.	RMADFE-2495
SYSVOL share and NETLOGON share can be missing after Bare Metal Active Directory Recovery, Install Active Directory or Install Active Directory from Media.	RMADFE-2506
The 'Authoritative SYSVOL restore' flag is ignored during bare metal recovery.	RMADFE-2530
SYSVOL replication does not work on a domain controller that has been restored from a Bare Metal backup and a Active Directory backup.	RMADFE-2533
The manual configuration of NIC settings in Bare Metal Recovery Console does not work.	RMADFE-2563
Forest recovery might be stuck due to not configured IP address configuration on the disabled network adapter.	RMADFE-2569
The "Get information .. from backup" steps fails with the "Invalid IP address" error when static DNS configured for DHCP-enabled network adapter	RMADFE-2641
The 'Backup Password' field for the encrypted Active Directory backup is disabled for the Bare Metal Active Directory Recovery method.	RMADFE-2650
The Backup Agent can now collect Bare Metal Backups if any third-party Anti-Spyware software is installed on the Domain Controller.	RMADFE-2653

Resolved Issue	Issue ID
Validate that names of the VMs that are created during the recovery process are unique.	RMADFE-2809
The Verify operation removes existing VM from the ESXi/HyperV host.	RMADFE-2818
Autoset of virtual machine name does not work properly if you use multiselection and the Create virtual machine option is checked.	RMADFE-2840
The custom IP settings do not work for BMR restore.	RMADFE-2879
Now Recovery Manager for Active Directory checks the required Windows version (2016 or higher) and returns an error message if needed during the antimalware scan.	RMADFE-2852

Known Issues

General Known Issues

Known Issue	Issue ID
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
Recovery Manager for Active Directory does not show changes to GPO administrative templates in the GPO comparison report.	RMADFE-805
Cannot perform RMAD upgrade if the SQL Server Always On group is enabled for the reporting database.	RMADFE-1146
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
Customer can add a few instances of the same RMAD console (by domain name and by IP).	RMADFE-1276
Cannot disable replication schedule when there is no replication console (the replication console was deleted).	RMADFE-1283
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
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

Forest Recovery Known Issues

Known Issue	Issue ID
SYSVOL may not work correctly if a domain controller that was selected for the authoritative SYSVOL restore cannot be restored.	RMADFE-1111
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
The start type of Windows Defender Firewall service cannot be restored in Windows Server 2019.	RMADFE-2228

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.

Display

SVGA at 1024 x 768 or higher

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 Server 2008 R2 without Service Pack or with Service Pack 1
- Microsoft Windows Server 2008 x64 with Service Pack 1 or Service Pack 2
- Microsoft Windows 10 x64
- Microsoft Windows 8.1 x64 with or without any Service Pack
- Microsoft Windows 8 x64 with or without any Service Pack
- Microsoft Windows 7 x64 without Service Pack or with Service Pack 1
- Microsoft Windows Vista x64 with Service Pack 2

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)
- Microsoft Windows Server 2008 R2 without Service Pack or with Service Pack 1 (including Server Core installation)
- Microsoft Windows Server 2008 x64 with Service Pack 1 or Service Pack 2 (including Server Core installation)

The Windows Server Backup feature is supported for Windows Server 2008 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 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)

NOTE | For Microsoft Windows Server 2008 R2, you should manually install the appropriate version of SQL Server. This operation cannot be performed automatically using the Setup Wizard.

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) 2012, 2014, 2016, and 2019.

Microsoft Windows PowerShell

Microsoft Windows PowerShell version 3.0 or later

Microsoft Windows Installer

Microsoft Windows Installer 4.5

Microsoft Management Console

Microsoft Management Console 3.0

Integration with ChangeAuditor for Active Directory

Supported versions of Change Auditor for Active Directory: from 6.x to 7.0.1.

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 and 6.7
- Microsoft Hyper-V Server 2012 or higher

Forest Recovery Agent requirements

Processor

450 MHz or faster

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)
- Microsoft Windows Server 2008 R2 without Service Pack or with Service Pack 1 (including Server Core installation)
- Microsoft Windows Server 2008 x64 with Service Pack 1 or Service Pack 2 (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 without Service Pack or with Service Pack 1

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:

- Microsoft SCVMM Agent

Supported operating systems for the Hyper-V host:

- Microsoft Windows Server 2008/2008 R2

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

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 or higher.

VMware vCenter/ESX Server 6.0, 6.5 and 6.7

- 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

- **x64 system:** 2 GB or more

Display

SVGA at 1024 x 768 or higher

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
- Microsoft Windows Server 2008 R2 with Service Pack 1 or later
- Microsoft Windows Server 2008 with Service Pack 2 or later

Microsoft .NET Framework

Microsoft .NET Framework version 4.5.2 or higher

Microsoft Internet Information Server (IIS)

Microsoft Internet Information Services (IIS) 8.5, 8.0, 7.5, or 7.0.

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 9.0.1 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 master 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	7-ZIP 19.0
AeroWizard 2.2.3	MIT 1.0
Boost 1.34.1	Boost 1.0
Fody 1.29.3	MIT
FontAwesome.WPF 4.7.0.9	MIT
Microsoft.Dism 2.1.4	MIT
RazorEngine 2.1	Apache 2.0
Newtonsoft.Json.dll 6.0.6	MIT
PropertyChanged.Fody 1.50.3	MIT
TaskScheduler 2.8.18	MIT
Task Scheduler Managed Wrapper 2.8.18	MIT
TimeSpan Helper Library 2.2	New BSD 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

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Mark Adler madler@alumni.caltech.edu

*/

MinHook - The Minimalistic API Hooking Library for x64/x86

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