

# Quest® Recovery Manager for Active Directory® Forest Edition 9.0.1

## Release Notes

### March 2018

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

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## About Recovery Manager for Active Directory Forest Edition

Recovery Manager for Active Directory Forest Edition is designed to recover the entire Active Directory forest or specific domains in the forest.

The use of Recovery Manager for Active Directory Forest Edition helps you minimize the downtime caused by the corruption or improper modification of Active Directory forest and data.

Recovery Manager for Active Directory Forest Edition simplifies and automates the process of Active Directory forest or domain recovery: It automates the manual tasks involved in the recovery, remotely quarantines corrupt

domain controllers, and restores domain controllers to speed up the overall recovery and restore business operation quickly.

Recovery Manager for Active Directory Forest Edition is based on patented technology.

Recovery Manager for Active Directory Forest Edition 9.0.1 is a maintenance release, with new features and functionality. See [New features](#) and [Resolved issues](#).

## New features

New features and enhancements in Recovery Manager for Active Directory Forest Edition 9.0.1:

New Feature	Request ID
<b>Limited edition of Quest Recovery Manager for Active Directory SCOM Pack</b> Limited RMAD Management Pack for SCOM monitors the backup and restore operations performed by Recovery Manager for Active Directory, but the number of monitored properties is limited to reduce network load. For more details, see the <i>Monitoring Recovery Manager for Active Directory</i> section in <i>User Guide</i> .	RMADFE-1220
<b>Support for environments where TLS 1.0 is disabled</b> From this version, Recovery Manager for Active Directory supports environments where TLS 1.0 is disabled.	RMADFE-1386
<b>Support for VMware vCenter Converter Standalone version 6.2</b> Recovery Manager for Active Directory Forest Edition 9.0.1 supports VMware vCenter Converter Standalone 6.2. For more details about how to enable TLS 1.2 for managed applications like Active Directory Virtual Lab, see the following articles: <ul style="list-style-type: none"><li><a href="https://docs.microsoft.com/en-us/security-updates/SecurityAdvisories/2015/2960358">https://docs.microsoft.com/en-us/security-updates/SecurityAdvisories/2015/2960358</a></li><li><a href="https://kb.vmware.com/s/article/2145796">https://kb.vmware.com/s/article/2145796</a></li></ul>	RMADFE-1395
From this version, <b>Export certificates</b> and <b>Import certificates</b> options are moved to <b>Tools   Fault Tolerance</b> in Forest Recovery Console.	RMADFE-1396
A list of domain controllers from a Forest Recovery project can be exported to the Remote Desktop Connection Manager file (.RDG).	RMADFE-1348

# Resolved issues

The following is a list of issues addressed in this release.

**Table 1: General resolved issues**

Resolved Issue	Issue ID
Upgrade of Recovery Manager Portal does not fix broken Hybrid PowerShell scripts.	RMADFE-1223
If multiple objects are selected for restore and there is Directory Synchronization Service Account among them, now the restore operation will fail for all objects with the warning "Failed on-premise restore. Error: Value cannot be null". <b>Fix:</b> Now the Directory Synchronization Service Account is skipped with the warning "Failed to find the on-premises object <object name> with invalid SID" and the restore operation will be completed successfully.	RMADFE-1256
Upgrade to version 9.0 does not remove the <b>Dell.RecoveryManager.AD.PowerShell</b> snap-in.	RMADFE-1305
Recovery Manager for Active Directory (Forest Edition) setup does not check the PowerShell 3.0 or later prerequisite.	RMADFE-1330
RMAD shortcut may not work if different accounts are used to launch Recovery Manager Console and to install the product.	RMADFE-1353
Replication does not work if the Recovery Manager for Active Directory (Forest Edition) installation path in the master and slave console are different.	RMADFE-1371
The "Invalid Pointer" error may occur when the scheduled task (used to configure backup schedule) has been modified.	RMADFE-1373
The Group Policy Restore Wizard shows differences to the Group Policy objects which do not have any changes.	RMADFE-1383
Now Recovery Manager for Active Directory supports LSA Protection on servers with the latest "Meltdown" hotfix. For more details, see <a href="https://support.microsoft.com/en-us/help/4057142/windows-10-update-kb4057142">https://support.microsoft.com/en-us/help/4057142/windows-10-update-kb4057142</a> .	RMADFE-1388
If you select the <b>Do not unpack backups</b> option on the <b>Unpacked Backups</b> tab in Collection Properties, the option is not applied. If you reopen the dialog, the <b>Use global settings</b> option will be selected.	RMADFE-1390
Now the Recovery Manager Remote API Access service is optional. To install it, you need to select <b>Recovery Manager Remote API Access</b> in the Setup Wizard.  This feature enables the following Recovery Manager for Active Directory functionality: integration with Recovery Manager Portal, Recovery Manager Console fault tolerance and support for hybrid environment.	RMADFE-1413
Recovery Manager Console cannot be launched from Forest Recovery Console.	RMADFE-1434

**Table 2: Forest Recovery Console and Forest Recovery Agent resolved issues**

Resolved Issue	Issue ID
The forest recovery operation may stuck on "Ensure SYSVOL is available" steps (or other steps) if time on workstation where Forest Recovery Console is installed and on domain controllers differs.	RMADFE-935
The forest recovery operation can fail when Distributed File System Replication (DFSR) service configuration files (like C:\System Volume Information\DFSR\Config\Replica_DEAF6BCC-F685-4778-9FDE-FCBE996607B6.XML etc.) are missing on the domain controllers to be restored.	RMADFE-1250
The recovery plan incorrectly shows " Wait for Krbtgt account replication" steps.	RMADFE-1287
Fault Tolerance: User may edit project settings on the second instance of Forest Recovery Console.	RMADFE-1291
Changes to the "GC rebuild" option do not affect recovery method for other domain controllers.	RMADFE-1316
Fault Tolerance: Unable to resume the recovery process for paused domain controllers on the secondary instance of Forest Recovery Console.	RMADFE-1317
Fault Tolerance: Unable to proceed the recovery operation after saving the project on the secondary instance of Forest Recovery Console.	RMADFE-1318
Fault Tolerance: Unable to change the Fault Tolerance settings after providing wrong SQL Server connection data for the persistence database.	RMADFE-1322
The forest recovery process stops on the step "Ensure SYSVOL is available" with the error in environments where FRS (File Replication Service) is running.	RMADFE-1328
Unable to recover a child domain if a backup file was not provided for the parent domain.	RMADFE-1370
Fault Tolerance: The forest recovery operation cannot be resumed on the secondary instance of Forest Recovery Console if: <ul style="list-style-type: none"> <li>• primary console cannot resolve the DNS name of the secondary console</li> <li>• "domain controller isolation" step cannot be performed</li> </ul>	RMADFE-1377
The 'Invalidate RID pool' operation can fail during forest recovery if Active Directory Service Interfaces (ADSI) does not work under the Local System account on a domain controller. <b>Fix:</b> Now Recovery Manager for Active Directory Forest Edition uses LDAP API for all agent operations.	RMADFE-1381
Recovery Manager Console does not notify a user about the running recovery process right after the console has been launched.	RMADFE-1394
The "trusts validation" step can be incorrectly skipped during the forest health check.	RMADFE-1401
Cannot create a new Forest Recovery project from a backup with the error "Insufficient disk space".	RMADFE-1406

**Table 3: Active Directory Virtual Lab resolved issues**

<b>Resolved Issue</b>	<b>Issue ID</b>
Now the agent operation timeout can be set in Active Directory Virtual Lab using the registry setting <i>AgentResponseMaxAttempts</i> . Timeout is specified in seconds.	RMADFE-1339
The Virtual Lab creation process on Microsoft System Center Virtual Machine Manager 2012 R2 or later writes Host credentials in clear text to the Forest Recovery Agent log file on the source computer.	RMADFE-1380
Cannot enable network adapters during creation of virtual machines.	RMADFE-1405

# Known issues

The following is a list of issues, including those attributed to third-party products, known to exist at the time of release.

**Table 4: Forest Recovery Console and Forest Recovery Agent known issues**

Known Issue	Issue ID
<p>Unexpected behavior of the Forest Recovery Console when you update a recovery project created from a backup file: The "FSMO Roles" column in the right pane remains empty, although it should display information about FSMO roles of the DCs in the project.</p> <p>WORKAROUND: Update the project: On the "Menu Bar", click Tools, and then click "Update Project with Changes in Active Directory".</p>	65946
<p>Unexpected behavior in the Forest Recovery Console: When you group domain controllers by recovery method, some domain controllers may be included in the wrong group. This issue only occurs when you perform the following steps:</p> <ol style="list-style-type: none"><li>1. Group domain controllers in the Forest Recovery Console by recovery method.</li><li>2. Change recovery method for some of the domain controllers.</li></ol> <p>WORKAROUND: Change the grouping criteria for the domain controllers, and then again group the domain controllers by recovery method.</p>	177600
<p>Unexpected behavior when you print out the Recovery Plan or Recovery Report: Your attempt to use the Portrait page orientation may have no effect, and the plan or report is printed out in the Landscape orientation.</p> <p>WORKAROUND: This is a limitation in the Microsoft Report Viewer. Use the Landscape orientation since this is the orientation where everything fits.</p>	274520
<p>Unexpected result of a forest recovery operation: Some member servers may erroneously appear as domain controllers in Active Directory. This issue may occur if the backups you used for the recovery were made before the computers in subject were demoted from domain controllers to member servers.</p> <p>WORKAROUND 1: Run metadata cleanup to remove the unnecessary domain controllers from Active Directory.</p> <p>WORKAROUND 2: Recover your forest by using more recent backups that correctly reflect the forest topology.</p>	285237
<p>SYSVOL may not work correctly if a domain controller that was selected for the authoritative SYSVOL restore cannot be restored.</p>	RMADFE-1111

**Table 5: Active Directory Virtual Lab known issues**

Known Issue	Issue ID
<p>Your attempt to install the SCVMM agent on a source computer by using the Active Directory Virtual Lab console may fail with the error "&lt;ComputerName&gt; has an unsupported version of</p>	315009

Known Issue	Issue ID
<p>the Virtual Machine Manager agent installed." This behavior may occur if a virtual machine was previously created from the source computer by using some other Microsoft SCVMM server, and the SCVMM agent remained on the source computer after that.</p> <p>WORKAROUND: Uninstall the SCVMM agent, and then install the agent by using the Active Directory Virtual Lab console.</p> <ol style="list-style-type: none"> <li>1. Log on to the source computer and uninstall the agent manually from the list of installed programs (appwiz.cpl).</li> <li>2. In the Active Directory Virtual Lab console, right-click the source computer, and then use the "Manage Agents   Install SCVMM agent" command to install the agent.</li> </ol>	
<p>The Active Directory Virtual Lab console may erroneously state that the SCVMM agent is installed on a source computer added to the virtual test lab project, when in fact the agent is not installed. This behavior may occur if a virtual machine was previously created from the source computer by using some other Microsoft SCVMM server.</p> <p>WORKAROUND: In the Active Directory Virtual Lab console, use the shortcut menu on the source computer to uninstall the SCVMM agent, and then install it back again.</p>	315349
<p>The "Select preferred DNS server" recovery step may fail with the error "The process terminated unexpectedly." This issue only occurs on domain controllers that:</p> <ul style="list-style-type: none"> <li>• Are being recovered with the "Restore from backup" method.</li> <li>• Had a pending reboot when you started the recovery.</li> </ul> <p>WORKAROUND: Retry last operation on the target domain controller.</p>	315534
<p>Unexpected behavior: The Active Directory Virtual Lab may not automatically delete an unusable virtual machine whose creation has failed from the target virtual host.</p> <p>WORKAROUND: Delete the virtual machine manually. To do so, you can use the native tools supplied with the third-party virtualization software with which you attempted to create the virtual machine.</p>	318003
<p>When creating or opening a virtual lab project, you may encounter the error "Converter does not support agents of this version (&lt;VersionNumber&gt;)." This error shows up if any of the source computers in the virtual lab project have a VMware agent preinstalled and the agent version is earlier than the VMware vCenter Converter version you are using.</p> <p>WORKAROUND: Update the VMware agent on the source computer to the latest version:</p> <ol style="list-style-type: none"> <li>1. In the Active Directory Virtual Lab console, right-click the source computer in question.</li> <li>2. From the context menu, select "Manage Agent   Install VMware agent".</li> </ol>	335151
<p>The verify settings operation does not check whether the target virtual host supports the number of CPUs specified in the virtual lab project settings. As a result, if the number of CPUs is not supported, the virtual lab creation may fail with the error "The destination you selected does not support &lt;Number&gt; CPUs."</p> <p>WORKAROUND: Before creating your virtual lab, ensure that the target virtual host supports the number of CPUs you have specified in the virtual lab project.</p>	338800
<p>Active Directory Virtual Lab on SCVMM 2012 R2 may fail on domain controllers running</p>	134166335

Known Issue	Issue ID
Windows Server 2008 R2 Core. WORKAROUND: This issue arises due to lack of vssapi.dll and vsstrace.dll in the %SystemRoot%\SysWOW64 folder. You should copy these DLL files from a machine running Windows Server 2008 Standard Edition.	

**Table 6: Recovery Manager for Active Directory known issues**

Known Issue	Issue ID
Cannot perform RMAD upgrade if the SQL Server Always On group is enabled for the reporting database.	RMADFE-1146
Unexpected behavior when you upgrade operating system on the domain controller that has the Backup Agent installed from Windows Server 2003 to Windows Server 2008: After the upgrade, the Backup Agent may not work properly. WORKAROUND: Reinstall the Backup Agent on the domain controller.	163384
You may encounter the following unexpected behavior on the Backup Data Preparation step of the Online Restore Wizard: The wizard may not respond to any user action while it is processing a backup. WORKAROUND: Wait until the backup processing is finished.	167416
When you select the "Backup Agent Management" node in the Recovery Manager Console, you may observe the following issue: The Recovery Manager Console stops responding, showing the status "Discovering Backup Agent instances, please wait". WORKAROUND: Wait until the Backup Agent discovery completes.	183965
Unexpected behavior on the Reporting Options step in the Online Restore Wizard: When you select the "Include ChangeAuditor data in reports" check box, select a ChangeAuditor database, and click Next, you may encounter the error "Unable to connect to the ChangeAuditor database: <database>. Details: Login failed for user '<current user>'." This error shows up if the current user account does not have sufficient permissions to access the ChangeAuditor database. The expected behavior in the described situation is that the Online Restore Wizard should prompt you for credentials to access the ChangeAuditor database. WORKAROUND: Run the Online Restore Wizard under an account that has sufficient permissions to access the target ChangeAuditor database.	192269
You may encounter the following unexpected behavior while using the "Backup Agent Management" view in the Recovery Manager Console to view a list of Backup Agents: The list of Backup Agents may be incomplete. The cause of this behavior is that when you apply a filter on one or more columns in the "Backup Agent Management" view, there is no indication that the filter is applied. WORKAROUND: Check to see if a filter is applied on any columns in the "Backup Agent Management" view. Remove the filter if necessary.	200274
A compare operation performed in the Online Restore Wizard may take a significant time to complete (30+ minutes). Also, the compare operation may consume a significant amount of RAM. This issue only occurs if the number of objects being compared is 100,000+.	340796



Known Issue	Issue ID
WORKAROUND: Wait for the compare operation to complete.	
<p>The Online Restore Wizard cannot find an object if the object name contains 1-9 digits when searching by the full object name, but can find it by the common mask, for example: 'u01' object can be found by 'u' and cannot by 'u01'.</p> <p>This issue may arise if the operating system version of a domain controller is greater or different from the RMAD Console machine operating system.</p> <p>WORKAROUND: Copy the <b>esent.dll</b> file from the domain controller where the backup was created to the product installation folder on the Recovery Manager Console machine.</p>	88020172
<p>You may receive the "ASR Error: Fail to exclude disk#1" error when performing the Backup or Restore operation on Windows Server 2008/2008R2-based domain controller.</p> <p>WORKAROUND: This error can be safely ignored because it does not affect the backup or restore process.</p>	91020268
<p>After the upgrade on the network isolated machine, the Recovery Manager Console is loaded too slowly.</p> <p>WORKAROUND: Uncheck the <b>Check for publisher's certificate revocation</b> option on the <b>Advanced</b> tab in the <b>Internet Option</b> dialog in Microsoft Internet Explorer.</p>	92444398
<p>Pre-installed Backup Agent can be upgraded during the backup creation.</p> <p>WORKAROUND: Do not upgrade Backup Agent if the backup operation is not finished.</p>	91682822
<p>When a user cancels the data replication process by Ctrl + C, by logoff, etc, the status of the replication session is stuck at "Running".</p>	RMADFE-1271
<p>Customer can add a few instances of the same RMAD console (by domain name and by IP).</p>	RMADFE-1276
<p>Cannot disable replication schedule when there is no replication console (the replication console was deleted).</p>	RMADFE-1283

**Table 7: Recovery Manager Portal known issues**

Known Issue	Issue ID
<p>Unexpected behavior when you use the Recovery Manager Portal to delegate restore or undelete permissions to a user or group that is not assigned any role in the Recovery Manager Portal: The delegation operation completes successfully. The expected behavior in this situation is that the Recovery Manager Portal should not allow you to delegate permissions to a user or group that has not been assigned any role in the portal.</p> <p>WORKAROUND: Before delegating restore or undelete permissions, ensure that the target user or group is assigned the appropriate role in the Recovery Manager Portal. For more information about assigning roles to portal users, see the "Using Recovery Manager Portal" chapter in the User Guide.</p>	308044
<p>The Recovery Manager Portal uninstallation may fail if Microsoft .NET Framework 4.5 is not installed on the Recovery Manager Portal computer.</p> <p>WORKAROUND:</p>	314390

Known Issue	Issue ID
<ol style="list-style-type: none"> <li>1. Install Microsoft .NET Framework 4.5.</li> <li>2. Uninstall the Recovery Manager Portal.</li> <li>3. Uninstall Microsoft .NET Framework 4.5.</li> </ol>	
<p>The Recovery Manager Portal fails to show the result of a restore or undelete operation if while the restore or undelete is still running you switch to some other tab, and then return to the Recovery tab.</p> <p><b>WORKAROUND:</b></p> <p>To ensure that all objects have been successfully restored or undeleted:</p> <ol style="list-style-type: none"> <li>1. On the Recovery tab, click the button with the name of the operation you have just performed.</li> <li>2. See the "Objects to restore" or "Objects to undelete" list. This list contains the objects whose restore has failed.</li> </ol>	317314
<p>When selecting a backup the Recovery Manager Portal, you may encounter the error "No backup found for the last backup session." This issue occurs if the backup is located on the domain controller and in the Recovery Manager Console its storage location is specified using a UNC path.</p> <p><b>WORKAROUND:</b> Select a backup stored locally on the Recovery Manager for Active Directory computer.</p>	340814
<p>Cannot access the Recovery Manager Portal if the portal is installed in the child domain.</p> <p><b>WORKAROUND:</b> In the portal settings file C:\Program Files (x86)\Quest\Recovery Manager Portal\Enterprise.Portal.Console\bin\EnterprisePortalSettings.xml &lt;add key="SimulateLogonForWebDelegation" value="false" /&gt; (default = true)</p>	91616200

# System requirements

Before installing Recovery Manager for Active Directory Forest Edition 9.0.1, ensure that your system meets the following minimum hardware and software requirements.

**i** | **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.

## Recovery Manager for Active Directory Forest Edition requirements

**Table 8: Recovery Manager for Active Directory Forest Edition system requirements**

Requirement	Details
Processor	<b>Minimum:</b> 1.4 GHz <b>Recommended:</b> 2.0 GHz or faster
Memory	<b>Minimum:</b> 1 GB <b>Recommended:</b> 2 GB These figures apply only if the Active Directory domains managed by Recovery Manager for Active Directory Forest Edition include 1 million objects or less. Increase RAM size by 512 MB for every additional 1 million objects.
Hard disk space	<b>x86 system</b> Full installation including the prerequisite software: 1.5 GB of free disk space In case all the prerequisite software is already installed: 250 MB of free disk space <b>x64 system</b> 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 <b>NOTE:</b> Additional storage space is required for a backup repository, at least the size of the backed-up Active Directory database file ( <b>Ntds.dit</b> ) and the <b>SYVOL</b> folder plus 40MB for the transaction log files.
Display	SVGA at 1024 x 768 or higher
Operating system	<b>NOTE:</b> 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 restore operations cannot be performed via the console.

**Requirement****Details****Installation**

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

**Targets for backup, restore, or compare operations**

- 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 with Service Pack 1 or Service Pack 2 (including Server Core installation)
- Microsoft Windows Server 2003 R2 without Service Pack or with Service Pack 2
- Microsoft Windows Server 2003 without Service Pack or with Service Pack 1 or Service Pack 2

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Microsoft .NET Framework

- Microsoft .NET Framework version 4.5 or higher

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Microsoft SQL Server and its components

**Microsoft SQL Server versions**

One of the following version is required:

- 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)

Requirement	Details
	<ul style="list-style-type: none"> <li>Microsoft SQL Server 2012 with or without any Service Pack (Enterprise, Business Intelligence, Standard, Express, Web, or Developer Edition)</li> </ul> <p><b>Microsoft SQL Server components</b></p> <ul style="list-style-type: none"> <li>Microsoft System CLR Types for SQL Server 2012 If this component is not installed, it will be installed automatically by the RMAD setup.</li> </ul> <p><b>Microsoft SQL Server Reporting Services</b></p> <p>To display reports, Recovery Manager for Active Directory Forest Edition can integrate with Microsoft SQL Server Reporting Services (SRSS) 2012, 2014 and 2016.</p>
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	To provide information on who modified particular Active Directory objects, Recovery Manager for Active Directory can integrate with ChangeAuditor for Active Directory from version 4.5 to 6.9.

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

## Forest Recovery Agent requirements

**Table 9: Component requirements**

Requirement	Details
Processor	450 MHz or faster
Memory	256 MB (1 GB recommended)
Hard disk space	<p><b>x86 system:</b> 850 MB or more</p> <p><b>x64 system:</b> 2 GB or more</p>
Display	50 MB or more
Operating system	<p>One of the following operating systems:</p> <ul style="list-style-type: none"> <li>Microsoft Windows Server 2016 including Server Core installation</li> <li>Microsoft Windows Server 2012 R2 with or without any Service Pack (including Server Core installation)</li> <li>Microsoft Windows Server 2012 with or without any Service Pack (including Server Core installation)</li> </ul>

Requirement	Details
	<ul style="list-style-type: none"> <li>• Microsoft Windows Server 2008 R2 without Service Pack or with Service Pack 1 (including Server Core installation)</li> <li>• Microsoft Windows Server 2008 with Service Pack 1 or Service Pack 2 (including Server Core installation)</li> <li>• Microsoft Windows Server 2003 R2 without Service Pack or with Service Pack 2</li> <li>• Microsoft Windows Server 2003 without Service Pack or with Service Pack 1 or Service Pack 2</li> </ul>
Prerequisite software	Microsoft Windows Installer 4.5 or later must be installed.

## Active Directory Virtual Lab requirements

**Table 10: Component requirements**

Supported virtualization infrastructure	Requirements
Microsoft System Center Virtual Machine Manager (SCVMM) 2012 without Service Pack or with Service Pack 1	<p>Software that must be installed on the Active Directory Virtual Lab computer:</p> <ul style="list-style-type: none"> <li>• Microsoft SCVMM Console (supplied with the SCVMM version you plan to use)</li> </ul> <p>Software that is installed on the source computer by Active Directory Virtual Lab console:</p> <ul style="list-style-type: none"> <li>• Microsoft SCVMM Agent</li> </ul> <p>Supported operating systems for the Hyper-V host:</p> <ul style="list-style-type: none"> <li>• Microsoft Windows Server 2008/2008 R2</li> </ul>
Microsoft System Center Virtual Machine Manager (SCVMM) 2012 R2 or 2016	<p>Software that must be installed on the Active Directory Virtual Lab computer:</p> <ul style="list-style-type: none"> <li>• Microsoft SCVMM Console (supplied with the SCVMM version you plan to use)</li> </ul> <p>Software that is installed on the source computer by Active Directory Virtual Lab console. For more details, see <a href="#">here</a>:</p> <ul style="list-style-type: none"> <li>• Disk2vhd v2.01 utility</li> </ul> <p>Supported operating systems for the Hyper-V host:</p> <ul style="list-style-type: none"> <li>• Microsoft Windows Server 2012 or higher</li> </ul>
VMware vCenter/ESX Server 5.0, 5.1, 5.5, 6.0 and 6.5.	<ul style="list-style-type: none"> <li>• vCenter Converter must be installed in your environment using the Client-Server installation setup option.</li> </ul>

## Supported virtualization infrastructure

## Requirements

- 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

Table 11: Component requirements

Requirement	Details
Processor	1 GHz or faster
Memory	512 MB or more
Hard disk space	<b>x86 system:</b> 850 MB or more <b>x64 system:</b> 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 operating systems (both x86 and x64 platforms are supported): <ul style="list-style-type: none"><li>• Microsoft Windows Server 2016</li><li>• Microsoft Windows Server 2012 R2 with or without any Service Pack</li><li>• Microsoft Windows Server 2012 with or without any Service Pack</li><li>• Microsoft Windows Server 2008 R2 with Service Pack 1 or later</li><li>• Microsoft Windows Server 2008 with Service Pack 2 or later</li></ul>
Web browser	To access the Recovery Manager Portal, you can use Microsoft Internet Explorer 8 or higher.
Microsoft .NET Framework	Microsoft .NET Framework version 4.5 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	<b>Microsoft SQL Server versions</b> One of the following versions is required:

**Requirement****Details**

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- 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 Forest Edition 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 Forest Edition 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 Forest Edition.

### *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 Forest Edition 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 Forest Edition 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 with Recovery Manager for Active Directory Forest Edition

## Upgrade and installation instructions

Recovery Manager for Active Directory Forest Edition 9.0.1 supports upgrade from version 8.6.1 or higher.

Starting from version 8.8, it is recommended to manually upgrade pre-installed Backup Agents to the latest version on every domain controller. For versions prior to 8.8, the upgrade of Backup Agents is required.

You have the option to perform the Forest Recovery operation using the latest product version together with Forest Recovery Agents version 8.8.1 without agents upgrade. To do this, take the following steps:

1. Set the **HKLM\SOFTWARE\Wow6432Node\Quest\Recovery Manager for Active Directory\DisableAgentVersionCheck (DWORD)** registry key to **1**.
2. Make sure that the NTLM authentication is enabled in your environment.
3. Switch the Forest Recovery Agents version 8.8.1 to the Negotiate authentication mode by removing the certificate (.pfx file) from the agent installation directory.
4. Restart the agents.

**i** **IMPORTANT:** Upgrade from Recovery Manager for Active Directory Forest Edition version 8.6 is not supported due to specific installation and upgrade issues found in version 8.6. Those issues are resolved in versions since 8.6.1.

Therefore, if version 8.6 is installed, perform the following steps:

1. Export the necessary scheduled backup creation tasks.
2. Remove Recovery Manager for Active Directory Forest Edition 8.6 from your computer.  
Note that all your settings and data are preserved, except for scheduled backup creation tasks.
3. Install Recovery Manager for Active Directory Forest Edition 9.0.1.
4. Create new or import existing scheduled backup creation tasks.

Recovery Manager for Active Directory Forest Edition is fully compatible with FIPS-compliant algorithms: You can install the product on computers and use it to back up domain controllers that have FIPS-compliant algorithms enabled.

**i** **IMPORTANT:** Recovery Manager for Active Directory Forest Edition 9.0.1 does not support encrypted backups of domain controllers that have FIPS algorithms enabled and were created by Recovery Manager for Active Directory Forest Edition version 8.5.2 or earlier. After upgrading to version 9.0.1, back up all such domain controllers again.

## Additional resources

Additional information is available from the following:

- Online product documentation:  
<http://documents.quest.com/recovery-manager-for-ad-forest-edition>
- Recovery Manager Community  
<https://www.quest.com/community/products/recovery-manager/fforum>

# 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.

# About us

## We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation.

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## Contacting Quest

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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>.

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# 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>.

**Table 12: List of third-party contributions**

Component	License or acknowledgment
Boost 1.34.1	Boost 1.0
ZLib 1.1.4	zlib 1.2.3
MinHook 1.3.2.1	MinHook 1.3.2.1 Copyright 2009 Tsuda Kageyu All rights reserved.
Task Scheduler Managed Wrapper 2.5.8	MIT

## **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

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Jean-loup Gailly [jloup@gzip.org](mailto:jloup@gzip.org)

Mark Adler [madler@alumni.caltech.edu](mailto:madler@alumni.caltech.edu)

```
*/
```

## **MinHook - The Minimalistic API Hooking Library for x64/x86**

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### Legend

**WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.

**CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

An information icon indicates supporting information.

Recovery Manager for Active Directory Forest Edition Release Notes

Updated - March, 2018

Version - 9.0.1