

Active Roles

Release Notes

Version 8.2.1

13 January 2025, 16:30

These release notes provide information about the Active Roles release. For the most recent documents and product information, see [Online product documentation](#).

About this release

Active Roles 8.2.1 is a patch release with new features and functionality. See [New features](#) on page 1 and [Enhancements](#) on page 2.

IMPORTANT: Starting from Active Roles 8.2.1, the Microsoft OLE DB Driver requirements have changed. These changes require additional configuration steps to perform before upgrading or installing Active Roles. Failure to complete these steps might result in the Active Roles Service not starting. For more information, see [Microsoft OLE DB Driver for SQL Server security impacts](#).

New features

Active Roles 8.2.1 has the following new features.

Azure Government tenant support

Active Roles and Active Roles Synchronization Service now support connecting to and managing the objects of Azure Government (GCC and GCC-H) tenants.

- In Active Roles, you can connect to Azure Government tenants via the Active Roles Configuration Center. After adding the Azure Government tenant and consenting Active Roles as an Azure application, you can manage the objects of the Azure Government tenant via the Active Roles Web Interface or the Managed Unit feature of the Active Roles Console.
- In Active Roles Synchronization Service, you can configure the Azure AD Connector, the Microsoft 365 Connector and Azure BackSync to synchronize the resources of Azure Government tenants.

For more information, see the following resources:

- For more information on Azure Government tenants, see [Compare Azure Government and global Azure](#) in the *Microsoft Azure documentation*.
- For more information on how to connect Active Roles to an Azure Government tenant and consent Active Roles as an Azure application through the Active Roles Configuration Center, see *Configuring a new Azure tenant and consenting Active Roles as an Azure application* in the *Active Roles Administration Guide*.
- For more information on how to configure Azure BackSync for Azure Government tenants, see *Configuring Azure BackSync* in the *Active Roles Synchronization Service Administration Guide*.
- For more information on how to configure the Azure AD Connector or the Microsoft 365 Connector for Azure Government tenants, see *Creating a Microsoft Azure Active Directory connection* or *Creating a Microsoft 365 connection* in the *Active Roles Synchronization Service Administration Guide*.

Azure BackSync replacement

Active Roles now supports the Azure BackSync feature via the associated BackSync Replacement built-in script and workflow, which are available in the Active Roles Console. This feature replaces the Azure BackSync operation of the Active Roles Synchronization Service.

For more information, see *About the BackSync Replacement workflow* in the *Active Roles Administration Guide*.

Related topics

- [Enhancements](#) on page 2.
- [Resolved issues](#) on page 5.
- [Known issues](#) on page 15.

Enhancements

The following is a list of enhancements implemented in Active Roles 8.2.1.

Table 1: General enhancements

Enhancement	Issue ID
<p>Federated authentication support in Active Roles received the following enhancements:</p> <ul style="list-style-type: none">Active Roles now also supports federated authentication using SAML 2.0, allowing users to access websites or sign in once with the single sign-on (SSO) option. <p>NOTE: Federated authentication is not supported and does not work on standalone Web Interface instances.</p> <ul style="list-style-type: none">Active Roles now also supports automatically refreshing expired certificates from the remote store, if federated authentication is configured for the Active Roles Web Interface, but the certificate gets expired and another identity provider, such as Microsoft Entra ID replaces it. <p>NOTE: After upgrading Active Roles, always ensure that Active Roles automatically refreshes expired certificates. To do so:</p> <ul style="list-style-type: none">If using WS-Federation, in the Active Roles Configuration Center, in Web Interface > Authentication, reconfigure federated authentication.If using SAML 2.0 authentication, in the Active Roles Configuration Center, in Web Interface > Authentication, configure federated authentication and make sure to load the federation metadata from a URL (instead of loading it from a file). <p>For more information, see <i>Configuring federated authentication</i> in the <i>Active Roles Administration Guide</i>.</p>	299431, 437706
<p>Active Roles 8.2.1 has been checked against the following Security Technical Implementation Guidelines (STIGs) of the Defense Information Systems Agency (DISA).</p> <ul style="list-style-type: none">Application Security and DevelopmentMS SQL Server 2016 DatabaseMS SQL Server 2016 Instance <p>The checks performed during STIG validation are compliant with the following National Institute of Standards and Technology (NIST) Special Publications (SP):</p> <ul style="list-style-type: none">NIST SP 800-53NIST SP 800-53ANIST SP 800-53 Revision 4	413546

Table 2: Active Roles Configuration Center enhancements

Enhancement	Issue ID
Security enhancements to SAML 2.0 configuration process.	465851
<p>The Active Roles Configuration Center received the following enhancements related to importing Management History:</p> <ul style="list-style-type: none"> Improved the performance of the Import Management History wizard. The speed of importing Management History data is significantly increased. Improved the Import Management History wizard user interface. Added retry policy for SQL exceptions. If the migration fails due to a network related or transient SQL exception, the process now restarts automatically, and the wizard attempts to import the current batch 3 times before canceling the operation. If the migration fails due to other SQL exceptions, the wizard only restarts the migration once. <p>For more information, see <i>Importing Management History data</i> in the <i>Active Roles Upgrade Guide</i>.</p>	433585

Table 3: Active Roles Console enhancements

Enhancement	Issue ID
<p>The Active Roles Console received the following enhancements related to Managed Units:</p> <ul style="list-style-type: none"> You can now create Managed Units from Azure distribution groups and Azure contacts with any "Include" or "Exclude" membership rules, not just with the Include Explicitly and Exclude Explicitly rules. If you create or update a Managed Unit query, the Find drop-down list now also lists Azure distribution groups and Azure contacts. <p>For more information, see <i>Configuring federated authentication</i> in the <i>Active Roles Administration Guide</i>.</p>	401787
Improved the performance of the Active Roles Console when listing Azure distribution groups in the Select Objects dialog.	387339

Table 4: Active Roles Synchronization Service enhancements

Enhancement	Issue ID
The Active Roles Synchronization Service Capture Agent component now supports Local Security Authority (LSA). For more information, see Configuring Additional LSA Protection in the <i>Microsoft Windows Server documentation</i> .	125828

Table 5: Active Roles Web Interface enhancements

Enhancement	Issue ID
Improved the performance of the Active Roles Web Interface when loading the list of Azure distribution groups.	387339

Resolved issues

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

Table 6: General resolved issues

Resolved Issue	Issue ID
Previously, when performing an in-place upgrade from Active Roles 8.2 to a newer version of Active Roles, the RSTS configuration did not transfer to the new Active Roles version, and the RSTS connection could fail. This issue is now resolved and the RSTS configuration is retained after the upgrade.	465344

Table 7: Add-on Manager resolved issues

Resolved Issue	Issue ID
Previously, attempting to load Active Roles Add-on Manager in the Active Roles Console resulted in the Active Roles Console hanging for several minutes, then failing to properly display Add-on Manager. The issue was caused by a character encoding problem during the Add-on Manager registration process, and was fixed by adjusting the related loading settings.	426052

Table 8: Active Roles Service resolved issues

Resolved Issue	Issue ID
Previously, if Synchronization Service mappings and synchronization workflows were used to synchronize data from an Active Roles 8.2 instance using an imported configuration, mappings and synchronization workflows using the Active Roles Connector might fail with the following error: Synchronization steps aborted. Details: An error occurred while import from 'DC=<dc-name>,DC=com	467585

Resolved Issue	Issue ID
This issue is now fixed.	
<p>Previously, in environments where multiple Active Roles service instances were configured, if the Execute on setting of the Dynamic Group Checker built-in scheduled task has been set to its default All servers value instead of a specific service in the Active Roles Console, then the value of the <code>edsaDGOriginatingService</code> attribute of dynamic groups was set to Unknown.</p> <p>Because of this:</p> <ul style="list-style-type: none"> • The Dynamic Group Updater built-in scheduled task could not update and rebuild the memberships of dynamic groups. • If the dynamic groups were updated so that their <code>edsaDGOriginatingService</code> attribute was set to a specific Active Roles service, the Dynamic Group Updater scheduled task reverted the value of the attribute to Unknown. <p>This issue is fixed, so that selecting All servers for the Execute on setting of the Dynamic Group Checker scheduled task now correctly assigns the Active Roles service instance running the scheduled task, allowing the Dynamic Group Updater scheduled task to correctly rebuild the membership list of dynamic groups.</p>	449923
<p>Previously, Active Roles kept the entries of deprovisioning and undo deprovisioning operations in the change history database indefinitely, even if a Change Tracking Cleanup scheduled task was configured to delete older change tracking log entries. Keeping Deprovision and UndoDeprovision entries indefinitely caused the leftover data to grow in size over time.</p> <p>This issue is now fixed, so the Deprovision and UndoDeprovision entries of the management history database are now also deleted during cleanup.</p>	399889
<p>Previously, if you had any temporal group membership changes (such as adding or removing a temporal member from a group) scheduled to occur, upgrading to a new version of Active Roles resulted in the scheduled temporal group membership change not being performed.</p> <p>This issue is now fixed, so starting from version 8.2.1, Active Roles will perform scheduled temporal group membership changes even after upgrading to a newer Active Roles version.</p>	319037

Table 9: Configuration Center resolved issues

Resolved Issue	Issue ID
Previously, the Management History import process could fail, because the maximum length of the <code>operationid</code> value was 10 characters. This caused an error for operation IDs that were longer than 10 characters.	467560

Resolved Issue	Issue ID
<p>This issue was fixed by increasing the maximum length of operation IDs to 40 characters.</p>	
<p>Previously, the Management History import process could fail, because Active Roles added a duplicate of the <code>completionTime</code> attribute in the XML file, causing an XML validation error.</p> <p>This issue is now fixed and the import process is completed successfully.</p>	466571
<p>Previously, the upgrade process could fail if you performed a gradual in-place upgrade using the Upgrade configuration wizard as follows:</p> <ol style="list-style-type: none"> 1. You performed an in-place upgrade to a full release version with Web Interface installed, for example Active Roles 8.1.5. 2. You initiated an in-place upgrade to a service pack release of the baseline release, for example Active Roles 8.1.5 SP1. <p>In such cases, the process might have failed with the following error message: Object reference not set to an instance of an object.</p> <p>This issue is now resolved and the in-place upgrade to a service pack release can be performed gradually.</p>	464334
<p>Previously, importing a configuration database from a previous Active Roles version created on a different computer resulted in the following error, when configuring the settings of the Source database step in the Import configuration wizard:</p> <p>Object reference not set to an instance of an object.</p> <p>This issue is now fixed.</p>	406609
<p>Previously, when importing an existing configuration, even if you specified an encryption key backup file in the Import of Encrypted Data step of the Import configuration wizard, the wizard displayed the following warning:</p> <p>Unable to retrieve the Active Roles data encryption key from the source database. If you have a backup of the encryption key for the source database, then, after data import is complete, you can use <code>Restore-AREncryptionKey</code> to restore the key from the backup to the destination database.</p> <p>This issue occurred because despite specifying the encryption key backup file, the wizard always tried to import the encryption key directly from the source database.</p> <p>This issue is now fixed, and the wizard reads the encryption key from the backup file when specified.</p>	315646

Table 10: Active Roles Collector and Report Pack resolved issues

Resolved Issue	Issue ID
Fixed a crash that previously occurred when launching the Active Roles Collector and Report Pack.	394394

Table 11: Console (MMC Interface) resolved issues

Resolved Issue	Issue ID
Previously, when trying to run an automation workflow that contained a password reset script, the workflow would fail. This was introduced by fixing another bug (432430). The issue was resolved by reverting the changes that were introduced by the 432430 bugfix.	466580
Previously, after configuring an Include by Query membership rule for a dynamic group, Active Roles replaced the query parameters of the saved membership rule with custom search parameters. This issue is now resolved, so the Include by Query configuration is now retained for newly-created dynamic groups. NOTE: For existing issues, this fix will only take effect if you re-create the affected dynamic groups.	468216
Previously, when using the Find Users, Contacts, and Groups view to search for a boolean attribute, the search returned no results. This issue is now fixed, so you can search boolean values successfully.	467292, 467252
Previously, when configuring a Policy Object, the list of directory objects for Azure tenant containers appeared empty. The following object types were affected: <ul style="list-style-type: none"> • Microsoft 365 Groups • Azure Users • Azure Contracts • Azure Guest Users • Shared Mailboxes • Resource Mailboxes • Security Groups • Distribution Groups • Dynamic Distribution Groups This issue is now resolved and the list is populated correctly with directory objects.	465796

Resolved Issue	Issue ID
<p>Previously, if a notification message for an automation workflow was configured and the notification message format was set as plain text, Active Roles failed to send the notification email after the workflow was run.</p> <p>This issue is now fixed, and Active Roles sends the notification email successfully.</p>	462976
<p>Previously, the Deleted Objects container did not appear if additional Active Directory features (for example, Privileged Access Management) were enabled.</p> <p>This issue is now fixed, and the Deleted Objects container appears regardless of the number of AD features enabled in your environment.</p>	455321
<p>Previously, during undo deprovisioning, if a virtual attribute could not be restored because it had been deleted and no longer existed, undo deprovisioning failed.</p> <p>The issue is now fixed: if a virtual attribute cannot be restored because it was deleted, in the undo deprovisioning report, an error message will appear for that virtual attribute. After the other virtual attributes are restored, the remaining undo deprovisioning actions will be performed.</p>	449231
<p>Previously, approving a workflow caused it to fail with the following error message:</p> <div> <p>Activity name: approvalActivity1 Activity type: ActiveRoles.Workflow.Activities.ApprovalActivity This activity has terminated this workflow instance. Approval rule activity has terminated this workflow instance. Administrative Policy returned an error. Specified method is not supported.</p> </div> <p>The issue was caused by the integrated Change Auditor. When an approver accepted a workflow request, the Active Roles Service attempted to set the dynamic directory control value of the Change Auditor in sub-requests (sent by the Active Roles Service) where they were not applicable, causing the workflow operation to run into an error.</p> <p>The issue is now resolved.</p>	447794
<p>Previously, when delegating any permission using an Access Template related to moving objects, permission precedence was not honored, which caused policy errors and did not reflect original Active Directory functionality.</p> <p>The issue is now fixed, and the following permission precedence is now honored, the first being the highest precedence:</p> <ol style="list-style-type: none"> 1. Explicit Deny 2. Explicit Allow 	440163

Resolved Issue	Issue ID
3. Inherited Deny 4. Inherited Allow	
<p>Previously, if an approval workflow was pending approval, assigning either the subject AD object or the approver group of the request to a different Organizational Unit resulted in the following error when attempting to approve the workflow:</p> <div>Administration Service encountered an error when retrieving properties of the object. Directory object not found.</div> <p>This error occurred because Active Roles always attempted to find the subject AD object or the approver group of the workflow via their DN, which changed if the object was moved to a different Organizational Unit.</p> <p>This issue was fixed by improving the fault tolerance of approver search operations.</p>	437535
<p>Previously, Active Directory users who had permissions to run Active Roles workflows could modify AD objects via workflows, even if they had no permission to any AD objects.</p> <p>This issue was fixed by adding a new check in the Access Check policy to verify the permissions of the workflow's parent initiator. Now, if the user has permission to run workflows but no permission to the objects that would be modified by running that workflow, the workflow activity will fail with an error message in the Active Roles Console and/or the Web Interface.</p>	432430
<p>To prevent potential memory leaks, the following built-in Script Modules in the Configuration/Script Modules/Builtin/ container were updated to use the <code>\$context.0365RemoveAllModulesSessions()</code> method:</p> <ul style="list-style-type: none"> • Create Office 365 Shared Mailboxes • Enabling Azure Roles • Sample Azure Hybrid Migration • Search Azure Users and Assign License 	432381
<p>Previously, when querying Azure users in a Managed Unit with the <code>edsvaOnPremisesSyncEnabled</code> attribute as the filtering condition, filtering did not work and the query did not return any results.</p> <p>The issue is now fixed.</p>	420919
<p>Previously, if a hybrid Azure user was added to cloud-only groups, the deprovisioning procedure did not remove the hybrid user from cloud-only distribution groups (and potentially from other subsequent cloud-only groups). However, all other deprovisioning steps (such as deactivating the Azure user) continued. The Active Roles Console and Web Interface also did</p>	424099

Resolved Issue

Issue ID

not notify users about the partial deprovisioning failure.

This issue is now fixed, and group membership removal now works correctly for all supported cloud-only Azure group types that were assigned manually to the user. The `edsvaAzureUserDeprovisionMemberOfList` attribute was also updated to include more structured information about the removed role assignments.

Previously, when configuring the membership rules of a Managed Unit, the **Include Group Members > Select objects** window incorrectly listed not just groups, but Azure users as well. Selecting an Azure user and saving your change then resulted in a `This Managed Unit has invalid membership rules` error.

402761

This issue was fixed by making sure that Azure users are no longer listed in the **Include Group Members > Select objects** window, and that you can only select groups.

Previously, when adding members to a room mailbox with the **Properties > Resource Information > Resource in-policy requests > Selected recipients** setting, deleting an added user either via Active Roles or system-provided Active Directory tools resulted in Active Roles failing to load the list of added users.

390095

This issue occurred because Active Roles Console could not load the list of assigned users due to the null value of deleted users, and was fixed by filtering out deleted users from the list.

Previously, if you linked one or more Access Templates to an Azure tenant, changing the Azure tenant type in the Active Roles Configuration Center resulted in the Access Templates losing all their directory object links to the modified Azure tenant.

386340

This issue is now fixed.

Previously, Active Roles scheduled tasks were affected by two issues:

258338

- Creating a new scheduled task during Daylight Savings Time (DST) or Standard Time could result in the scheduled task running continuously.
- Switching the Active Roles server from DST to Standard Time (or the opposite) could result in the configured scheduled tasks not running and becoming unscheduled.

These issues were caused by:

- An incorrect method of converting local time to UTC.
- An incorrect comparison of local time with UTC.
- An incorrect way to determine the Standard Time period.

These issues are now fixed, so task scheduling now works correctly, and Active Roles determines DST and Standard Time periods properly.

Table 12: Management Shell resolved issues

Resolved Issue	Issue ID
Security fixes to the Get-AllAuthenticationProviderConfiguration - ApiBaseUrl "<RSTS_URL>" -IsDataNeededFromDb \$false cmdlet.	465851

Table 13: Synchronization Service resolved issues

Resolved Issue	Issue ID
<p>Previously, the Microsoft 365 Connector (formerly known as the Office 365 Connector) could fail with a Task was cancelled error message when importing M365 data.</p> <p>This issue could occur if HttpClient timed out during Graph API requests, for example because of network issues. In such cases, the Microsoft 365 Connector could not handle the timeout correctly.</p> <p>The issue was fixed by implementing a new retry policy which retries the request up to 3 times before timeout, minimizing the chance of the issue occurring.</p>	435112
<p>Previously, attempting to synchronize the telephoneNumber AD attribute of a hybrid Azure user to the BusinessPhones Azure AD attribute failed with the following error if the BusinessPhones attribute was empty:</p> <div>Invalid value specified for property 'businessPhones' of resource 'User'.</div> <p>This issue is now fixed.</p>	426228
<p>Previously, the Microsoft 365 Connector could only retrieve a single service plan instead of the complete list of service plans. For example, in case of an Enterprise license containing 30 service plans, the connector retrieved only the first service plan.</p> <p>This issue is now fixed, so the Microsoft 365 Connector retrieves all service plans of a license plan.</p>	426028
<p>Fixed a performance issue affecting sync workflows between One Identity Manager and Active Roles Synchronization Service if Active Roles was connected to any Azure tenants.</p>	424016
<p>Previously, attempting to synchronize (add) a group member from a plain-text source to the members attribute of a group with the Azure AD Connector failed with the following error:</p> <p>Invalid property 'members'.</p> <p>This error occurred because the Azure AD Connector was not prepared to handle modifying various group types: while certain Azure groups can be</p>	414643

Resolved Issue	Issue ID
<p>modified via Graph API, others can only be modified via the ExchangeOnlineManagement PowerShell module.</p> <p>The issue was solved by updating the Azure AD Connector to properly identify the member attribute to synchronize and the type of Azure group to update.</p>	
<p>Previously, when checking the history of any sync workflow where GUIDs were synchronized (such as Active Directory object GUIDs, Azure user IDs, or Microsoft 365 user object IDs), opening the list of processed objects then copy-pasting any GUID into the GUID filter resulted in an empty processed object list.</p> <p>This issue is now fixed.</p>	319664

Table 14: Web Interface resolved issues

Resolved Issue	Issue ID
<p>Previously, opening the Azure Licenses Report page could result in an HTTP 500 error. This issue would occur when the Active Roles Web Interface needed to load an extensive amount of license information data.</p> <p>This issue was resolved by decreasing the size of license information data, allowing the Web Interface to load the page.</p>	465543
<p>Previously, in the Exchange admin center, after logging in to your tenant, when you added a mail-enabled security group as a member to a distribution group, then in the Active Roles Web Interface, you navigated to the distribution group and opened its Members, the following error message appeared:</p> <div> <p>Error: Object reference not set to an instance of an object.</p> </div> <p>The issue is now resolved, so in the Web Interface, opening the Members list of a distribution group that contains a mail-enabled security group as a member does not cause any errors.</p> <p>NOTE: The Active Roles Web Interface does not support the listing of mail-enabled security groups in the Members list of distribution groups.</p>	459648
<p>Previously, if you have specified a value of 150,000 KB (or higher) for the Shared Mailboxes > Email settings > Sent message maximum size or Received message maximum size setting, the text box of these settings showed a different value than what you have set for them.</p> <p>This issue has been fixed.</p>	456672
<p>Previously, when clicking Menu > Choose columns, moving an advanced attribute from the Hidden columns list to the Displayed columns list and saving it, the previously hidden advanced attribute still did not appear in a</p>	449966

Resolved Issue	Issue ID
<p>new column for users.</p> <p>The issue is resolved: columns added to the Displayed columns list are displayed for users, and you can also remove previously added columns individually.</p>	
<p>Previously, saving a new personal view saved the view URL field incorrectly with the name of the view missing from the end. This resulted in the saved view not storing various attributes, such as the search or filter container, criteria, column settings, or sort order.</p> <p>The issue has been fixed so now every attribute is saved with the correct URL value, and opening the personal view works as intended.</p>	432199
<p>Previously, when a group was assigned to the <code>managedBy</code> attribute of another group and adding a member to this first group required approval, the subgroup members of the <code>managedBy</code> group were not notified of the approval task. Consequently, the task did not appear among the approval tasks on the Self-Service Site of the Web Interface for members of subgroups.</p> <p>The issue is now resolved by expanding the approval task so that members of subgroups within the group designated in the <code>managedBy</code> attribute are now included.</p>	432073
<p>Previously, when creating a hybrid Azure user, the Create Azure Account form was not validated against the policies that administrators set, and let users proceed even if the policies failed.</p> <p>The issue is now fixed by adding the option to customize or skip validation to every form that validates policies.</p>	420648
<p>Previously, when using the Customization > Directory Objects > user - (My Account) > Create New Command menu of the Active Roles Self-Service Portal, saving and reloading your changes, then opening the new command via the User Profile Editor resulted in the page of the new command appearing in a nested Active Roles Self-Service Portal instance.</p> <p>This issue was fixed by removing all unnecessary elements from the custom command page, so that no element appears twice on the page.</p>	409603
<p>Previously, after creating a new hybrid Azure user, the Azure Properties > Settings > Usage Location field of the user was always empty, even if a usage location was specified when creating the user. Selecting a value from the Azure Properties > Settings > Usage Location drop-down and saving the change then fixed the problem.</p> <p>This issue is now fixed, so that the configured usage location appears in the Azure Properties > Settings > Usage Location drop-down immediately after creating the user.</p>	393882
<p>Previously, when selecting an AD LDS user, the Web Interface returned an</p>	386102

Resolved Issue	Issue ID
<p>Unable to load contents error instead of listing the available user management actions.</p> <p>This issue is now fixed, and the list of actions is populated correctly.</p>	
<p>Previously, when using an approval workflow to extend the expiration time of the accountExpires parameter for users, the notification email and the workflow form showed the old and new expiration times in a non-human readable LDAP format until double-clicking the values.</p> <p>This issue was fixed by implementing a converter to show the expiration times in a readable date and time format by default.</p>	324293
<p>Previously, users who had the Users - Help Desk Access Template assigned to them could not perform bulk password resets when selecting multiple users at once. Instead, they could reset passwords for single users only.</p> <p>The issue was fixed by adding the edsva-Bulk-Operation-Object-List (Write Bulk Operation Objects) permission to the Users - Help Desk Access Template.</p>	320823
<p>Previously, if a user was assigned to a group with a temporary membership, attempting to assign the same group membership again to the user via the Member of > Add command resulted in Active Roles overwriting the temporary group membership of the user. This behavior differed from the Active Roles Console, which returned an error message in this scenario.</p> <p>To ensure that the Web Interface works the same as the Active Roles Console, the Web Interface was updated to filter out already added elements, and return the following message when attempting to assign the user again to the same group:</p> <p>The object <group-name> is already in the list and cannot be added for the second time.</p>	289342

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 15: General known issues

Known Issue	Issue ID
Due to RSTS connection limitations, federated authentication must be enabled for only one Active Roles instance. If you try to configure federated	466692

Known Issue	Issue ID
authentication for multiple Active Roles instances, the connection to the Active Roles database will break in the previously configured Active Roles instance.	
<p>If you create a dynamic membership group in an Azure US Government tenant, attempting to check the dynamic membership rules of the group on Azure Portal can result in a No access error message appearing with error code 403.</p> <p>If this happens, then the configured dynamic rules will not work, and Active Roles will not allocate the users who meet the criteria of the dynamic rules.</p>	458338
<p>If you have a new Active Roles service account with the minimum required permissions, in the Active Roles Console, in Active Directory > <domain-name> - Deleted Objects, opening the Advanced Properties of a deleted object and selecting the Show all possible attributes check box results in an error message and stops the Active Roles Service.</p> <p>Workaround</p> <p>One Identity recommends adding your service account as a member of the Domain Admins group.</p>	275523
<p>Activating the EnableAntiForgery key (<code><add key="EnableAntiForgery" value="true"/></code> in web.config) may cause the following error message:</p> <div> <p>Session timeout due to inactivity. Please reload the page to continue.</p> </div> <p>Workaround</p> <p>Update the IgnoreValidation key in the <code><appSettings></code> section by adding a property value in lowercase:</p> <ol style="list-style-type: none"> 1. Open IIS Manager. 2. In the left pane, under Connections, expand the tree view to Sites > Default Web Site. 3. Under Default Web Site, click on the Active Roles application (ARWebAdmin by default). 4. Double-click Configuration Editor. 5. From the Section drop-down, select appSettings. 6. Find the IgnoreForValidation key. 7. Append the comma-separated value to IgnoreForValidation, for example: lowercasecontrolname. 8. In the right pane, under Actions, click Apply. 9. Recycle the App pool. 	91977

Table 16: Add-on Manager known issues

Known Issue	Defect ID
<p>After installing an add-on that creates Web Interface customization items, the Web Interface may not display the customization items created by the add-on.</p> <p>Workaround</p> <p>In the Web Interface, click Reload.</p>	179835
<p>After installing an add-on that creates a virtual attribute, the virtual attribute may not appear in the Advanced Properties dialog of the affected object.</p> <p>Workaround</p> <p>After installing the add-on, reconnect to the Administration Service.</p>	180508
<p>After installing an add-on that creates a virtual attribute and a Web Interface customization item using that virtual attribute, an error may occur when opening any Web Interface site.</p> <p>Workaround</p> <p>Restart Internet Information Services (IIS) on the web server running the Web Interface (for example, by running the <code>iisreset</code> command in the Windows command prompt).</p> <p>If there is a replication group in your Active Roles environment, do the following:</p> <ol style="list-style-type: none">1. After the changes are propagated to all replication partners, click Reload in the Web Interface.2. If the Web Interface does not open, enter the following in the address bar of your browser to reload the Web Interface: <code><site url>/customization/metadata-Reload.aspx?ReloadFromWorkingCopy=1</code>3. After the changes are propagated to all replication partners, restart Internet Information Services (IIS) on the web server running the Web Interface (for example, by running the <code>iisreset</code> command in the Windows command prompt).	180524
<p>When you use Add-on Manager to uninstall an add-on, the following error may occur:</p> <div>Object 'objectDN' was not found.</div> <p>This error can occur if the add-on modifies an existing object during installation, and then the modified object is deleted by a user after the add-on has been installed.</p>	180700

Workaround

Uninstall the add-on from the command line using the `/ForceUninstall` parameter. For example:

```
AddOnManager.exe /UninstallAddon /AddonName:"my-addon" /ForceUninstall
/Service:"servicename" /User:"domain\user" /Password:"password"
```

After uninstalling an add-on that creates a virtual attribute and a Web Interface customization item that uses that virtual attribute, the Web Interface customization item created by the add-on may not be removed, and the Web Interface may return the following error:

180721

An error occurred during the last operation.

Workaround

Perform the following steps:

1. In the Web Interface, click the **Reload** command.

If the Web Interface does not open, reload the Web Interface by entering the following URL in the address bar of your browser:

```
<site url>/customization/metadata-
Reload.aspx?ReloadFromWorkingCopy=1
```

NOTE: If there is a replication group in your Active Roles environment, reload the Web Interface only after the changes are propagated to all replication partners.

2. Restart Internet Information Services (IIS) on the web server running the Web Interface (for example, by running the `iisreset` command in the Windows command prompt).

NOTE: If there is a replication group in your Active Roles environment, restart IIS only after the changes are propagated to all replication partners.

After installing an add-on that creates Web Interface customization items, the Web Interface customization items created by the add-on may not appear. 180808

This issue may occur if you provide an incorrect user name and password for reloading Web Interface sites.

Workaround

In the Web Interface, click the **Reload** command.

When you install Add-on Manager from the command-line, you may encounter the following error: 183252

Known Issue

Defect ID

Command line option syntax error. Type Command /? for Help.

This error may occur if one or several parameters of the command contain more than 255 characters.

Workaround

Edit the command-line parameters (for example, the path to a file) so that each parameter is not longer than 255 characters.

Table 17: Configuration Center known issues

Known Issue	Issue ID
<p>If you are performing an in-place upgrade in an Active Roles instance where the Web Interface was previously configured and the upgrade process is interrupted (for example, due to performance or connection issues), an issue can occur where the Upgrade configuration wizard opens every time you start the Active Roles Configuration Center.</p> <p>This issue is caused by a Windows registry value that fails to reset when the in-place upgrade process is interrupted.</p> <p>Workaround</p> <p>To solve this problem, perform the following steps:</p> <ol style="list-style-type: none">1. Open the Windows Registry Editor.2. Navigate to Computer\HKEY_LOCAL_MACHINE\SOFTWARE\One Identity\Active Roles\Configuration\Web.3. Double-click IsInPlaceUpgrade, then under Value data, enter 0 as the string value.	467196
<p>If you want to add an Azure tenant to Active Roles and you authenticate the procedure with a user account that is a member in multiple organizations, adding the tenant can fail with the following error:</p> <p>Object reference not set to an instance of an object. Cannot index into a null array.</p> <p>This issue can occur if the user account you use for authentication resides as an external account in your organization, as Active Roles always attempts to connect and authenticate towards tenants with users that are members of your current organization.</p> <p>Workaround</p> <p>To solve this problem, perform any of the following steps:</p> <ul style="list-style-type: none">• If your account is a member of any organizations where you do not need	457501

membership, leave those organizations via the Azure Portal. If you cannot leave those organizations yourself, contact Microsoft for assistance.

- Delegate Global Admin rights to a different account, or create a new Global Admin account. Then, use that account for logging in when adding the Azure tenant in the Active Roles Configuration Center.

Following an in-place upgrade, claims settings configured previously for WS-Federation authentication or SAML 2.0 authentication in the following Configuration Center pages are reset to their default UPN, EMAIL and SID claims:

- **Web Interface > Authentication > Site authentication settings > WS-Federation authentication > Configure claims**
- **Web Interface > Authentication > Site authentication settings > SAML 2.0 and ther protocols used for federated authentication > Configure claims**

Because of this, if you have previously configured any claims before upgrading Active Roles, you must reconfigure your claims settings.

During an in-place upgrade, the connection attempt can fail with the following error message:

The target principal name is incorrect.

This issue is caused by a change introduced in Microsoft OLE DB Driver for SQL Server 19, a third-party prerequisite since Active Roles 8.2. Previous versions of OLE DB Driver allowed you to reference an SQL Server without specifying the full server name. However, starting from Microsoft OLE DB Driver for SQL Server 19, this is no longer possible, as the SQL Server name must match the principal name referenced by the OLE DB Driver certificate.

Workaround

To solve this problem, perform any of the following steps:

- In the **Change Active Roles Database** wizard (available via the **Administration Service > Active Roles databases > Change** option), specify the full SQL Server name that matches the principal.
- Create an alias for the SQL Server name that points to the valid principal.
- Issue a new valid certificate that matches the SQL Server name.

If you change an Active Roles database to an existing or pre-created blank Azure SQL database with the **Change Active Roles Database** wizard (available via the **Administration Service > Active Roles databases > Change** option), then saving and configuring the new Active Roles database

settings returns the following error message, with the configured database settings appearing as not applied:

Unable to create a backup copy of the database encryption key for this Administration Service. Details: A parameter cannot be found that matches parameter name 'MultiSubnetFailoverSupport'.

However, this is a visual issue only, as the wizard can actually change the configuration to the specified Azure SQL database.

Workaround

Check if Active Roles has actually changed the database settings to the specified Azure SQL database:

1. Close and reopen the Active Roles Configuration Center.
2. Navigate to **Administration Service > Active Roles databases**.

If you upgrade Active Roles to a newer version, starting the Active Roles Configuration Center to perform the in-place upgrade can fail with the following error messages:

448694

- Connect failed: The system cannot find the file specified.
- Delegate to an instance method cannot have null 'this'.

At the same time, Active Roles logs the following error in the Event Viewer:

Critical error occurred upon starting Active Roles Administration Service. Details: Database <active-roles-database> on SQL Server <sql-server-name> is unavailable.

This issue occurs if the SQL Server that Active Roles uses is not already running when attempting to start the Active Roles Configuration Center after a restart to perform the upgrade process. The issue is more likely to occur if the SQL Server and Active Roles are installed on the same machine.

Workaround

To avoid this issue from occurring:

- Install SQL Server and Active Roles on different machines.
- Make sure that the SQL Server installation that Active Roles uses is up and running before starting the upgrade process.

If you have your SQL Server and Active Roles installed on the same machine, and the error occurs, close and reopen the Active Roles Configuration Center after the SQL Server started running.

When configured for Groups and Contacts, the **Office 365 and Azure Tenant Selection** policy displays additional tabs.

229031

Known Issue	Issue ID
Tenant selection supports selecting only a single tenant.	229030
In the Starling Connect Connection Settings link, clicking Next displays progress, but the functionality is not affected, so the button is not required.	126892

Table 18: Console (MMC Interface) known issues

Known Issue	Issue ID
Listing all attributes of an Azure hybrid user by selecting the Show all possible attributes check box might take too much time (approximately 30-50 seconds).	447201
The format of the edsaAzureSubscribedSKUs attribute for hybrid Active Directory users has changed between Active Roles 7.6 and 8.0. As a result of this change, from Active Roles 8.1, in the Active Roles Console, you cannot modify this attribute to assign licenses to hybrid AD users.	440896

Workaround

To automate assigning licenses to hybrid AD users using a workflow

1. Create a new, example hybrid user for the purpose of copying its edsaAzureSubscribedSKUs attribute, with the license(s) that you need.
2. Copy the value of this edsaAzureSubscribedSKUs attribute.
3. To automate assigning licenses to hybrid users using a workflow, in that workflow, paste this previously copied value as the edsaAzureSubscribedSKUs attribute.

For more information, see *Workflows* in the *Active Roles Administration Guide*.

If you configure a Managed Unit with an **Include by Query** rule, the following condition operators cannot query Azure objects due to Graph API limitations:

- **Contains**
- **Present**

In addition, the **Ends with** condition returns results only if you specify whole words. The only exceptions to this behavior are the **mail**, **otherMails**, **userPrincipalName** and **proxyAddresses** attributes, where **Ends with** can properly query the values that end with your specified string.

For more information, see [Support for filter by properties of Microsoft Entra ID \(directory\) objects](#) in the *Microsoft Graph documentation*.

Azure objects cannot be deleted.	392597
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Workaround

In the **Delete** Access Templates, give the user **Read** right on the

Known Issue	Issue ID
ObjectClass property.	
You can run the UpdateServicesToExecute built-in script module only in a scheduled task named Update Services To ExecuteOn . Attempting to run the UpdateServicesToExecute built-in script in a scheduled task with a different name will result in an error.	317057
Automation workflows with the Microsoft 365 script fail, if multiple workflows share the same script and the script is scheduled to execute at the same time. Workaround One Identity recommends scheduling the workflows with different scripts or at a different time.	200328
When a workflow is copied from a built-in workflow, it may not run as expected.	153539
Azure Group Properties are not available if they are added to the Microsoft 365 Portal or Hybrid Exchange Properties from the forwarding address attribute of Exchange online users.	98186
In Active Roles with the Office 365 Licenses Retention policy applied, after deprovisioning the Azure AD user, the Deprovisioning Results for the Office 365 Licenses Retention policy do not appear in the same window. Workaround To view the deprovisioning results of an Azure AD user: <ul style="list-style-type: none"> • In the Active Roles Console, right-click and select Deprovisioning Results. • In the right pane of the Active Roles Web Interface, click Deprovisioning Results. • To refresh the form, press F5. 	91901

Table 19: Installer known issues

Known Issue	Issue ID
After upgrading Active Roles, pending approval tasks do not appear in the Active Roles Web Interface.	91933

Table 20: Language Pack known issues

Known Issue	Issue ID
In the Active Roles Configuration Center, changing the language in Global	125880

Known Issue	Issue ID
<p>settings does not work properly.</p> <p>Workaround</p> <p>To change the language of the Web Interface, configure the language with the Active Roles 8.2.1 > Settings > User interface language option of the Web Interface.</p>	
In the Active Roles Console, the 0365 script execution configuration activity of the Workflow Designer is not completely localized to German.	151392
In the Active Roles Console, the German localization may contain visual issues and truncated texts.	91946
In the Active Roles Console, some strings are displayed in English instead of German in the German localization.	91942
In the Active Roles Synchronization Service, the Event Viewer messages are not translated to German.	91753
In the Active Roles Synchronization Service, the German localization does not have all connector strings translated.	91709
In the Active Roles Web Interface, some Azure-related strings are translated incorrectly for the supported languages. Translated texts may also contain link inconsistencies.	256939
In Active Roles, several German localization issues are present.	164713
In Active Roles, strings on the notification page are not localized.	153695
In the Language Pack installer, the link of the online EULA agreement in the EULA text does not work.	91925

Table 21: Synchronization Service known issues

Known Issue	Issue ID
<p>Due to limitations in Graph API that prevent creating Azure contacts in Azure AD, Active Roles Synchronization Service cannot synchronize Azure contacts from any source data system to Azure AD.</p> <p>Depending on the source data system, attempting to synchronize Azure contacts to Azure AD can result in the following error messages:</p> <ul style="list-style-type: none"> If the source data system is Active Roles: <p>An error occurred: "A parameter cannot be found that matches parameter name '<attribute>.'"</p> If the source data system is not Active Roles: <p>Error: "Unexpected error."</p> 	412365, 412507

Known Issue	Issue ID
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In the Synchronization Service, the following attributes of the Microsoft Azure AD Connector are currently not supported and cannot be queried via the Microsoft Graph API:	304074
--	--------

- **user** attributes:
 - aboutMe
 - birthday
 - contacts
 - hireDate
 - interests
 - mySite
 - officeLocation
 - pastProjects
 - preferredName
 - responsibilities
 - schools
 - skills
- **group** attributes:
 - acceptedSenders
 - allowExternalSenders
 - autoSubscribeNewMembers
 - hasMembersWithLicenseErrors
 - hideFromAddressLists
 - hideFromOutlookClients
 - isSubscribedByMail
 - membersWithLicenseErrors
 - rejectedSenders
 - unseenCount

This means that although these attributes are visible, they cannot be set in a mapping rule.

After running the get-qcworkflowstatus cmdlet in the Synchronization Service, the workflow status is not accurate.	125768
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Table 22: Web Interface known issues

Known Issue	Issue ID
<p>If you create an Exchange object that supports configuring additional properties on creation (for example, contacts or resource mailboxes), then opening the page of these properties immediately after creating the object will result in the configured values of these properties appearing incorrectly.</p> <p>For example, specifying the:</p> <ul style="list-style-type: none"> • Contact Info or Mail tip properties for a contact, or • Calendar Processing or Location properties for a resource mailbox 	457642
<p>will result in the values of these properties appearing incorrectly in the Web Interface form, with the risk of saving them with these incorrect values if you click Save.</p> <p>This error occurs because Active Roles creates Exchange objects (like mailboxes or contacts) on the Exchange Server first, and will populate the Web Interface forms of the opened Exchange objects afterwards. Because of this, if you open the Web Interface forms of the objects too quickly, Active Roles might fail the update request for the forms, resulting in empty or default values appearing for the affected properties.</p> <p>Workaround</p> <p>To prevent this issue from occurring, always wait at least one minute before opening the Web Interface forms of the newly-created Exchange objects. If the forms still show incorrect, default or empty values when opening them, specify your desired values again, then click Save.</p>	
<p>When searching for directory objects in the Active Roles Web Interface, using the Quick Search bar of the Web Interface header returns less results than the Search page when using the same search term. This is because the Quick Search bar can only find objects whose name starts with the specified search term.</p> <p>Workaround</p> <p>To get accurate and complete search results, use the Search menu on the left-side pane instead of the Quick Search bar in the Web Interface header.</p>	448500
<p>When administering approval requests in the Active Roles Web Interface, attempting to reject requests with the Examine Task > Reject button will not work. Instead, clicking the button simply returns you to the approval task details without any changes.</p> <p>Workaround</p> <p>Reject approval requests directly in the Pending Tasks list of the Web Interface. To do so:</p> <ul style="list-style-type: none"> • Select the request(s) you want to reject, then click Reject selected. 	437370

Known Issue	Issue ID
<ul style="list-style-type: none"> Use the Reject button right next to the approval request in the list. 	
<p>Using a personal view to open an Active Directory (AD) Organizational Unit (OU) whose name contains the "<" special character results in the following error:</p> <div data-bbox="215 456 1165 555"> <p>An error occurred during the last operation. Error: A potentially dangerous Request.Query.String was detected from the client (DN="OU\<name-property>").</p> </div> <p>The issue is caused by the special character in the request URL of the Web Interface, causing failures in the web functionality of Active Roles.</p> <p>Workaround</p> <p>One Identity recommends avoiding the use of the "<" character in the name property of an AD object.</p>	415590
<p>When searching for hybrid Azure security groups, using the Quick Search bar of the Web Interface header returns fewer results than the Search page when using the same search term. This is because the Quick Search bar can only find objects whose name starts with the specified search term.</p> <p>Workaround</p> <p>To get accurate and complete search results, use the Search menu on the left-side pane instead of the Quick Search bar in the Web Interface header.</p>	448500
<p>When attempting to modify or delete Azure users, contacts, or groups synchronized from an on-premises Active Directory to an Azure Active Directory, the operation either appears to be successful but silently fails, or the operation fails with a generic error message.</p> <p>If the operation appears to be successful, the following message appears:</p> <div data-bbox="215 1317 805 1344"> <p>The operation is successfully completed.</p> </div> <p>However, the operation silently fails, no error message appears, and the Azure user, contact or group is not deleted or modified.</p> <p>If the operation fails, the following generic error message appears instead of a specific error message:</p> <div data-bbox="215 1572 865 1599"> <p>An error occurred during the last operation.</p> </div> <p>NOTE: Similar failures with either no error message or a generic error message might occur in the Active Roles Web Interface.</p>	388062, 388063
<p>If you click Azure > Resource Mailboxes to query room mailboxes after being idle for approximately 15-20 minutes, the Active Roles Web Interface will not list any room mailboxes.</p>	293380

Known Issue	Issue ID
Workaround	
Restart the Administration Service.	
In the Active Roles Web Interface, Azure roles are not restored automatically after performing an Undo Deprovision action on a user.	172655
Workaround	
After the Undo Deprovision action is completed, assign the Azure roles to the user manually.	
Active Roles does not support creating Azure groups for existing groups.	117015
Active Roles Web Interface does not support setting the Exchange Online Property of the ProhibitSendQuota value in Storage Quotas .	91905

System requirements

Before installing Active Roles 8.2.1 in an on-premises environment, ensure that your system meets the following minimum hardware and software requirements.

NOTE: When setting up a virtual environment, carefully consider the configuration aspects such as CPU, memory availability, I/O subsystem, and network infrastructure to ensure the virtual layer has the necessary resources available. For more information about environment virtualization, see [One Identity's Product Support Policies](#).

To authenticate and communicate with Azure, the Active Roles Service must have access to the following Microsoft endpoints:

- <https://login.microsoftonline.com/>
- <https://developer.microsoft.com/graph>
- <https://graph.windows.net/>

To manage Azure Active Directory resources, you must install the following prerequisites in the Active Roles Configuration Center.

TIP: To run the PowerShell commands of the following modules, use the 64-bit version of Windows PowerShell.

Requirement	Version	Details
NuGet package provider	Minimum: 2.8.5.201	You must install the NuGet package provider on the computer(s) running an Active Roles Administration Service instance or Active Roles Synchronization Service. For more information, see Install-PackageProvider in the <i>Microsoft Package Management documentation</i> .
	Maximum: 3.0.0.1	

Requirement	Version	Details
Exchange Online PowerShell V3 module	Minimum: 3.0.0 Maximum: 3.5.0	<p>You must install the Exchange Online PowerShell module on the computer(s) running an Active Roles Administration Service instance or Active Roles Synchronization Service.</p> <p>For more information, see About the Exchange Online PowerShell module in the <i>Microsoft Exchange PowerShell</i> documentation.</p>
Az.Accounts PowerShell module	Minimum: 2.10.3 Maximum: 2.12.1	<p>You must install the Az.Accounts PowerShell module on the computer(s) running an Active Roles Administration Service instance or Active Roles Synchronization Service.</p> <p>For more information, see Az.Accounts in the <i>Microsoft PowerShell Gallery</i>.</p>
Az.Resources PowerShell module	Minimum: 6.4.1 Maximum: 6.6.0	<p>You must install the Az.Resources PowerShell module on the computer(s) running an Active Roles Administration Service instance.</p> <p>For more information, see Az.Resources in the <i>Microsoft PowerShell Gallery</i>.</p>
Microsoft Graph PowerShell module	Maximum: 2.17.0	<p>You must install the Microsoft Graph PowerShell module on the computer(s) running an Active Roles Administration Service instance. For installation instructions, see Microsoft Graph in the <i>Microsoft PowerShell Gallery</i>.</p>
Microsoft Edge WebView2 Runtime	N/A	<p>If no web browser is installed on the machine where you want to install and use Active Roles, download the Microsoft Edge Webview 2 Runtime installer with the following PowerShell command:</p> <pre>Invoke-WebRequest -Uri "https://go.microsoft.com/fwlink/p/?LinkId=2124703" -OutFile "\$([System.IO.Path]::Combine ([System.Environment]::GetFolderPath ('UserProfile'), 'Downloads', 'MicrosoftEdgeWebView2Setup.exe'))"</pre> <p>After the download is finished, locate the installer in your Downloads folder and run it.</p>
(Optional) One Identity certificate	N/A	<p>If your organization enforces the AllSigned policy, you must install the One Identity certificate during the installation of Active Roles.</p>

CAUTION: When importing PowerShell modules with the `$context.0365ImportModules` function, they are imported with the versions specified in the configuration of the Azure-specific prerequisites.

However, after importing the specified versions of the required PowerShell modules, running PowerShell cmdlets without passing them as a string to the `$context.0365ImportModules` function can cause inconsistent behavior in Active Roles. This is because if there are multiple versions of the same PowerShell module installed on the computer running the Active Roles server, PowerShell modules containing the script to run can be imported automatically with different versions.

To avoid inconsistent behavior in Active Roles by importing different PowerShell versions, run PowerShell modules only by passing them as a string to the `$context.0365ExecuteScriptCmd` function.

Hardware requirements

Table 23: Hardware requirements

Requirement	Details
Processor	For Administration Service, Web Interface and Synchronization Service, any of the following: <ul style="list-style-type: none">• Intel 64 (EM64T)• AMD64• Minimum 2 cores• CPU speed: 2.0 GHz or faster <p>NOTE: For Active Roles Synchronization Service, One Identity recommends using a multi-core CPU for the best performance.</p>
	For Console, SPML Provider and Management Tools, any of the following: <ul style="list-style-type: none">• Intel x86• Intel 64 (EM64T)• AMD64• CPU speed: 1.0 GHz or faster.
Memory	Administration Service: A minimum of 4 GB of RAM.
	Web Interface, Synchronization Service: A minimum of 2 GB of RAM.
	Console, SPML Provider and Management Tools:

Requirement	Details
	A minimum of 1 GB of RAM.
Hard disk space	<p>Administration Service, Web Interface, Console, SPML Provider and Management Tools:</p> <p>A minimum of 100 MB of free disk space.</p> <p>Synchronization Service:</p> <p>A minimum of 250 MB of free disk space.</p> <p>NOTE: If SQL Server and Synchronization Service are installed on the same computer, the amount required depends on the size of the Synchronization Service database.</p>
Operating system	<p>You can install any of the Active Roles components on a computer running:</p> <ul style="list-style-type: none"> • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 <p>Active Roles supports the Standard or Datacenter edition of these operating systems.</p> <p>In addition, you can install the Active Roles Console and Management Tools on a computer running:</p> <ul style="list-style-type: none"> • Microsoft Windows 11, Professional or Enterprise edition. • Microsoft Windows 10, Professional or Enterprise edition, 32-bit (x86) or 64-bit (x64).

Component requirements

CAUTION: To avoid inconsistent behavior in Active Roles when managing Azure Active Directory resources, you must enable Transport Layer Security (TLS) protocol version 1.2. For more information, see [TLS 1.2 enforcement for Azure AD Connect](#) in the *Microsoft Azure documentation*.

All Active Roles components require:

- Microsoft .NET Framework 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 24: Administration Service requirements

Requirement	Details
SQL Server	<p>You can host the Active Roles database on the following SQL Server versions:</p> <ul style="list-style-type: none">• Microsoft SQL Server 2022, any edition.• Microsoft SQL Server 2019, any edition.• Microsoft SQL Server 2017, any edition.• Microsoft SQL Server 2016, any edition.• Azure SQL hosted databases. <p>To connect Active Roles to a Microsoft SQL Server deployment, install Microsoft OLE DB Driver for SQL Server (MSOLEDBSQL).</p> <p>IMPORTANT: Starting from version 8.2, Active Roles supports (and its installer is shipped with) Microsoft OLE DB Driver 19.x for SQL Server. However, Active Roles still supports earlier OLE DB Driver versions as well (18.4 or newer).</p> <ul style="list-style-type: none">• If you upgrade to Synchronization Service 8.2.1 from an earlier version and you want to keep using an earlier version of Microsoft OLE DB Driver (version 18.4 or newer), this change has no impacts on your Synchronization Service installation.• If you upgrade to Synchronization Service 8.2.1 from an earlier version or performed a clean installation, and you want to use Microsoft OLE DB Driver 19.x for SQL Server due to security concerns, make sure that your SQL Server has a certificate trusted by the Synchronization Service server that is assigned to the SQL service network protocols. <p>To use SSL with your SQL Server, configure a valid certificate. For more information on installing or viewing certificates for SQL Server via SQL Server Configuration Manager, see Certificate management in the <i>Microsoft SQL Server documentation</i>.</p> <p>For general information about the encryption and certificate requirements of Microsoft OLE DB Driver 19.x, see Encryption and certificate validation in OLE DB and Certificate requirements for SQL Server in the <i>Microsoft SQL Server documentation</i>.</p> <p>When configuring the SSL connection, consider the following:</p> <ul style="list-style-type: none">• Microsoft OLE DB Driver 19.x for SQL Server requires a certificate from a Certificate Authority and no longer accepts self-signed certificates. For more information on how to access a Certificate Authority, see Certification Authority Guidance in the <i>Microsoft Windows Server documentation</i>.

Requirement	Details
	<ul style="list-style-type: none"> The Service Account running the SQL Server service must have permission to view the private key from the server certificate. For more information, see Configure SQL Server Database Engine for encrypting connections in the <i>Microsoft SQL Server documentation</i>. Microsoft OLE DB Driver 19.x for SQL Server requires specifying the Service Principal Names (SPNs). For more information, see the following <i>Microsoft SQL Server documentation</i> resources: <ul style="list-style-type: none"> Service Principal Name (SPN) Support in Client Connections Service Principal Names (SPNs) in Client Connections (OLE DB) Service Principal Names (SPNs) in Client Connections (OLE DB) in SQL Server Native Client You might need to change your SQL connection string to match the certificate and the SPN. For more information, see Using Connection String Keywords with OLE DB Driver for SQL Server in the <i>Microsoft SQL Server documentation</i>.
Windows Management Framework	Windows Management Framework 5.1 (available for download) is required on all supported operating systems.
Operating system on domain controllers	<p>The product retains all of its features and functions when managing Active Directory on domain controllers running any of these operating systems, any edition, with or without any Service Packs:</p> <ul style="list-style-type: none"> Microsoft Windows Server 2022 Microsoft Windows Server 2019 Microsoft Windows Server 2016 <p>NOTE: The supported domain functional level is Windows Server 2008 R2 or higher.</p>
Exchange Server	<p>Active Roles is capable of managing Exchange recipients on:</p> <ul style="list-style-type: none"> Microsoft Exchange Server 2019 Microsoft Exchange Server 2016

Table 25: Web Interface requirements

Requirement	Details
Internet	Active Roles Web Interface requires the Web Server (IIS) server role

Requirement	Details
Services	<p>with the following role services:</p> <ul style="list-style-type: none"> • Web Server/Common HTTP Features/ <ul style="list-style-type: none"> • Default Document • HTTP Errors • Static Content • HTTP Redirection • Web Server/Security/ <ul style="list-style-type: none"> • Request Filtering • Basic Authentication • Windows Authentication • Web Server/Application Development/ <ul style="list-style-type: none"> • .NET Extensibility • ASP • ASP.NET • ISAPI Extensions • ISAPI Filters • Management Tools/IIS 6 Management Compatibility/ <ul style="list-style-type: none"> • IIS 6 Metabase Compatibility
Feature delegation	<p>Internet Information Services (IIS) must provide Read/Write delegation for the following features:</p> <ul style="list-style-type: none"> • Handler Mappings • Modules <p>To confirm that these features have the Read/Write delegation configured, use the Feature Delegation option of the native Internet Information Services (IIS) Manager tool of the operating system.</p>
.NET Trust Levels	<p>The .NET Trust Level must be set to Full (internal) on every computer where the Web Interface component is installed.</p> <p>To configure this setting:</p> <ol style="list-style-type: none"> 1. In the system-provided Internet Information Services (IIS) Manager tool, under Connections, expand the node of the computer, and navigate to Sites > Default Web Site. 2. On the Default Web Site Home page, double-click .NET Trust Levels. 3. Under Trust level, select Full (internal).

Requirement	Details
	<p>NOTE: Setting the .NET Trust Level to any other value will result in a failure when attempting to load any of the configured Active Roles Web Interface sites.</p>
Web browser	<p>You can access Active Roles Web Interface using:</p> <ul style="list-style-type: none"> • Mozilla Firefox 36 (or newer) on Windows. • Google Chrome 61 (or newer) on Windows. • Microsoft Edge 79 (or newer), based on Chromium on Windows 10 and 11. <p>You can use a later version of Firefox and Google Chrome to access Active Roles Web Interface. However, the Active Roles Web Interface was tested only with the browser versions listed above.</p>
Minimum screen resolution	<p>Active Roles Web Interface is optimized for screen resolutions of 1280x800 or higher.</p> <p>The minimum supported screen resolution is 1024x768.</p>

Table 26: Console requirements

Requirement	Details
Web browser	Active Roles Console requires Microsoft Edge 79 (or newer), based on Chromium.

Table 27: Management Tools requirements

Requirement	Details
Windows Management Framework	Windows Management Framework 5.1 (available for download) is required on all supported operating systems.
Remote Server Administration Tools (RSAT)	<p>To manage Terminal Services user properties by using Active Roles Management Shell, Active Roles Management Tools requires Remote Server Administration Tools (RSAT) for Active Directory.</p> <p>For more information on installing the RSAT version applicable to your operating system, see Remote Server Administration Tools (RSAT) for Windows in the <i>Microsoft Windows Server documentation</i>.</p>

Table 28: Synchronization Service requirements

Requirement	Details
Operating system on domain	The product retains all of its features and functions when managing Active Directory on domain controllers running any of these operating systems, any edition, with or without any Service Packs:

Requirement	Details
controllers	<ul style="list-style-type: none"> • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 <p>NOTE: The supported domain functional level is Windows Server 2008 R2 or higher.</p>
SQL Server	<p>You can host the Active Roles Synchronization Service database on:</p> <ul style="list-style-type: none"> • Microsoft SQL Server 2022, any edition. • Microsoft SQL Server 2019, any edition. • Microsoft SQL Server 2017, any edition. • Microsoft SQL Server 2016, any edition. • Azure SQL hosted databases.
Windows Management Framework	<p>Windows Management Framework 5.1 (available for download) is required on all supported operating systems.</p>
Supported connections	<p>Active Roles Synchronization Service can connect to the following data systems:</p> <ul style="list-style-type: none"> • Data sources accessible via an OLE DB provider. <p>NOTE: To create a connection to an OLE DB-compliant relational database, the OLE DB Connector requires any version of Microsoft OLE DB Driver for SQL Server that is supported by Microsoft to be installed on the machine running Active Roles Synchronization Service.</p> <p>The Active Roles installer is shipped with and automatically installs Microsoft OLE DB Driver 19.x for SQL Server.</p> <ul style="list-style-type: none"> • Delimited text files. • IBM AS/400, IBM Db2, and IBM RACF systems. • LDAP directory service. • Micro Focus NetIQ Directory systems. • The following Microsoft services and resources: <ul style="list-style-type: none"> • Active Directory Domain Services (AD DS) with the domain or forest functional level of Windows Server 2016 or higher. • Active Directory Lightweight Directory Services (AD LDS) running on any Windows Server operating system supported by Microsoft. • Azure Active Directory (Azure AD) using Microsoft Graph API version 1.0.

Requirement	Details
	<ul style="list-style-type: none"> • Exchange Online services. • Exchange Server with the following versions: <ul style="list-style-type: none"> • Microsoft Exchange Server 2019 • Microsoft Exchange Server 2016 • Lync Server version 2013 with limited support. • SharePoint 2019, 2016, or 2013. • SharePoint Online service. • Skype for Business 2019, 2016 or 2015. • Skype for Business Online service. • SQL Server, any version supported by Microsoft. • One Identity Active Roles version 7.4.3, 7.4.1, 7.3, 7.2, 7.1, 7.0, and 6.9. • One Identity Manager version 8.0 and 7.0 (D1IM 7.0). • OpenLDAP directory service. • Oracle Database, Oracle Database User Accounts, and Oracle Unified Directory data systems. • MySQL databases. • Salesforce systems. • SCIM-based data systems. • ServiceNow systems.
Legacy Active Roles ADSI Provider	To connect to Active Roles version 6.9, install the Active Roles ADSI Provider. For more information, see <i>Installing additional components</i> in the <i>Active Roles Installation Guide</i> .
One Identity Manager API	To connect to One Identity Manager 7.0, install One Identity Manager Connector on the computer running Active Roles Synchronization Service. This connector works with the RESTful web service and no SDK installation is required.
Internet connection	To connect to cloud directories or online services, the machine running Active Roles Synchronization Service must have a stable Internet connection.

Table 29: Synchronization Service Capture Agent requirements

Requirement	Details
Operating system	The DCs on which you install Active Roles Synchronization Service Capture Agent must run one of the following operating systems with or without any Service Pack:

Requirement	Details
	<ul style="list-style-type: none"> • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 <p>For more information, see the <i>Active Roles Synchronization Service Administration Guide</i>.</p>

Table 30: Language Pack requirements

Requirement	Details
Active Roles version	<p>The Active Roles 8.2.1 Language Pack requires Active Roles version 8.2.1 of the Administration Service, Configuration Center, Console, Synchronization Service or the Web Interface installed on the target machine.</p> <p>The Active Roles 8.2.1 Language Pack will not work properly with earlier versions of Active Roles.</p>
Operating system	You can install the Active Roles Language Pack on 64-bit operating systems only.

Table 31: Add-on Manager requirements

Requirement	Details
Processor	<p>Any of the following:</p> <ul style="list-style-type: none"> • Intel 64 (EM64T) • AMD64 • CPU speed: 1.0 GHz or faster
Memory	A minimum of 1 GB of RAM.
Hard Disk Space	A minimum of 100 MB of free disk space.
Operating System	<p>Any of the following Windows Server operating systems:</p> <ul style="list-style-type: none"> • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 <p>In addition, you can also install Add-on Manager on a computer running:</p> <ul style="list-style-type: none"> • Microsoft Windows 11, Professional or Enterprise edition. • Microsoft Windows 10, Professional or Enterprise edition, 64-bit (x64)

Requirement	Details
Active Roles Console	Add-on Manager requires Active Roles 8.2.1 Console installed.
Microsoft Windows PowerShell	Windows PowerShell 5.1 or later
Web Browser	Microsoft Edge 79 or newer (based on Chromium)

Table 32: Diagnostic Tools requirements

Requirement	Details
Processor	1.0 GHz or faster 32-bit (x86) or 64-bit (x64) CPU.
Memory	A minimum of 1 GB of RAM. NOTE: The amount of RAM required depends on the size of the log file opened with the Log Viewer tool.
Hard disk space	A minimum of 10 MB of free disk space.
Operating system	Any of the following Windows Server operating systems: <ul style="list-style-type: none"> • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016

Table 33: Data Collector and Reporting Pack requirements

Requirement	Details
Processor	Any of the following: <ul style="list-style-type: none"> • Intel x86 • Intel 64 (EM64T) • AMD64 • CPU speed: 2.0 GHz or faster.
Memory	A minimum of 2 GB of RAM.
Hard disk space	<ul style="list-style-type: none"> • 12 MB for the Data Collector and Reporting Pack. • 10 GB for the SQL Server Reporting Services.
Operating system	Any of the following Windows Server operating systems:

Requirement	Details
	<ul style="list-style-type: none"> • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016
SQL Server and SQL Server Reporting Services	<p>You can host the Active Roles Data Collector and Reporting Pack on the following SQL Server versions:</p> <ul style="list-style-type: none"> • Microsoft SQL Server 2022, any edition. • Microsoft SQL Server 2019, any edition. • Microsoft SQL Server 2017, any edition. • Microsoft SQL Server 2016, any edition. • Azure SQL hosted databases. • Azure SQL hosted databases. <p>To connect Active Roles to a Microsoft SQL Server deployment, install Microsoft OLE DB Driver for SQL Server (MSOLEDBSQL).</p>
Active Roles ADSI Provider	Active Roles 8.2.1 Management Tools must be installed.

Deployment requirements on AWS

Before deploying Active Roles 8.2.1 in Amazon Web Services (AWS) to manage AWS Managed Microsoft AD via AWS Directory Service, ensure that the following prerequisites are met.

Connectivity requirements

You must have:

- Stable network connectivity to Amazon Web Services (AWS).
- Port **1433** open and available for the Amazon Relational Database Service (RDS) service.
- Access to the AWS service with the **AWSAdministratorAccess** permission.

NOTE: Make sure that you have **AWSAdministratorAccess** permission, as it is required for certain configuration steps. The **AWSPowerUserAccess** permission is not sufficient for completing the entire configuration procedure.

Infrastructure requirements

To deploy and configure Active Roles for AWS Managed Microsoft AD, you must have access to the following AWS services and resources:

- AWS Managed Microsoft AD deployed via AWS Directory Service.
- One or more Amazon Elastic Compute Cloud (EC2) instance(s) hosting the Active Roles services and components.

The EC2 instance(s) must have, at minimum:

- 2 vCPUs running at 2.0 GHz.
- 4 GB of RAM.

TIP: One Identity recommends hosting the main Active Roles services and components (the Active Roles Service and Console, and the Active Roles Web Interface) on separate EC2 instances. If you deploy all Active Roles services and components in a single EC2 instance, use a more powerful instance to ensure a better user experience for the product.

NOTE: AWS Managed Microsoft AD support was tested with a single **t2.large** EC2 instance.

- An Amazon Relational Database Service for SQL Server (RDS for SQL Server).

NOTE: AWS Managed Microsoft AD support was tested with an RDS instance running the latest version of Microsoft SQL Server.

Make sure that all these components are discoverable or visible to each other.

Product licensing

Use of this software is governed by the Software Transaction Agreement found at <https://www.oneidentity.com/legal/sta.aspx>. This software does not require an activation or license key to operate.

Upgrade and installation instructions

This section contains information about the upgrade and installation changes affecting Active Roles 8.2.1.

NOTE: You must run the Active Roles installer with administrator privileges.

Supported Active Roles upgrade paths

You can upgrade the following versions of Active Roles to Active Roles 8.2.1:

- Active Roles 7.5
- Active Roles 7.5.3
- Active Roles 7.5.4
- Active Roles 7.6.1

- Active Roles 7.6.2
- Active Roles 7.6.3
- Active Roles 8.0 LTS
- Active Roles 8.0.1 LTS and its service packs
- Active Roles 8.1.1
- Active Roles 8.1.2
- Active Roles 8.1.3 and its service pack
- Active Roles 8.1.5 and its service pack
- For instructions on how to upgrade from an earlier version of Active Roles, see the *Active Roles Upgrade Guide*.
- For instructions on how to install the Active Roles Language Pack, see *Active Roles Language Pack* in the *Active Roles Administration Guide*.
- For special considerations regarding the installation of Active Roles 8.2.1, see the following information.

Microsoft OLE DB Driver for SQL Server security impacts

IMPORTANT: Starting from version 8.2, Active Roles supports (and its installer is shipped with) Microsoft OLE DB Driver 19.x for SQL Server. However, Active Roles still supports earlier OLE DB Driver versions as well (18.4 or newer).

- If you upgrade to Active Roles 8.2.1 from an earlier version via in-place upgrade, and you want to keep using an earlier version of Microsoft OLE DB Driver (version 18.4 or newer), this change has no impacts on your Active Roles installation.
- If you upgrade to Active Roles 8.2.1 from an earlier version via in-place upgrade, and you want to switch to Microsoft OLE DB Driver 19.x from an earlier OLE DB Driver version due to security concerns, you must perform additional configuration steps. Otherwise, the Active Roles Administration Service might fail to start. For more information, see *Configuring Active Roles for a newer Microsoft OLE DB Driver for SQL Server version* in the *Active Roles Upgrade Guide*.
- If you perform a clean installation of Active Roles 8.2.1 and want to use Microsoft OLE DB Driver 19.x (bundled with the Active Roles installer) due to security concerns, then verify that your SQL Server has SSL configured and the necessary trusted certificate set. Otherwise, Active Roles cannot communicate with the SQL Server and the Active Roles Administration Service might not start. For more information on these requirements, see *Configuration permissions* in the *Active Roles Installation Guide*.
- If you perform a clean installation of Active Roles 8.2.1 but you want to use an earlier supported version of Microsoft OLE DB Driver (18.4 or newer) instead of version 19.x that is bundled with the Active Roles installer, you must perform additional configuration steps in your environment. For more information, see *Rolling back to a previous Microsoft OLE DB Driver for SQL Server version* in the *Active Roles Installation Guide*.

Compatibility with earlier Active Roles components and custom solutions

NOTE: Consider the following before upgrading to a new version of Active Roles:

- Components of an earlier Active Roles version may not work with the components of the new version you are upgrading to.
- Custom solutions (scripts or other modifications) that rely on Active Roles features may fail to work after an upgrade due to compatibility issues. Therefore, before starting the upgrade, test your existing solutions with the new version of Active Roles in a lab environment to verify that your custom solutions will continue to work.

TIP: When upgrading to a new Active Roles version, One Identity recommends upgrading the Active Roles Administration Service first, and the client components (Active Roles Console and Active Roles Web Interface) afterwards.

Changes related to Azure tenants

NOTE: If your organization has any Azure tenants that are managed with Active Roles, you need to reauthenticate and reauthorize them after installing Active Roles 8.2.1. Otherwise, Active Roles will not receive the required permissions for managing existing Azure tenants, and tenant administration in Active Roles 8.2.1 will not work correctly. For more information, see *Reconfiguring Azure tenants during upgrade configuration* in the *Active Roles Upgrade Guide*.

Upgrade information related to Active Roles Synchronization Service

NOTE: Active Roles 7.5 introduced support for Modern Authentication in the Azure BackSync workflows of Active Roles Synchronization Service. After upgrading to Active Roles Synchronization Service 8.2.1 from an earlier version, if you previously had an Azure BackSync workflow configured, you will be prompted to reconfigure it in the Synchronization Service Console.

CAUTION: If you previously had an Azure BackSync workflow configured in Active Roles Synchronization Service, and you use more than one Azure Active Directory (Azure AD) service in your deployment, you must specify the Azure AD for which you want to configure Azure BackSync. Failure to do so may either result in directory objects not synchronized at all, or synchronized to unintended locations.

For more information on how to specify the Azure AD used for back-synchronization, see *Configuring automatic Azure BackSync* in the *Active Roles Synchronization Service Administration Guide*.

If you have sync workflows configured and run by Quick Connect (the predecessor of Synchronization Service), or earlier versions of Active Roles Synchronization Service, then you can transfer those sync workflows to the current version of Active Roles Synchronization Service.

You can transfer sync workflows from the following Quick Connect or Active Roles Synchronization Service versions:

- Quick Connect for Active Directory 6.1
- Quick Connect for AS400 1.4
- Quick Connect for Base Systems 2.4
- Quick Connect for Cloud Services 3.7
- Quick Connect for RACF 1.3
- Quick Connect Sync Engine 5.5 and 6.1
- Synchronization Service 7.5 and later

For more information, see *Transferring sync workflows from Quick Connect* in the *Active Roles Synchronization Service Administration Guide*.

If you are upgrading from an older version of Active Roles to Active Roles 8.1.3 or later, and the Microsoft 365 or Azure AD connectors were configured manually, then to run synchronization workflows, you must update the authentication data.

To update the authentication data, you can:

- Use automatic configuration. One Identity recommends this approach, as the process is handled automatically by the Active Roles Synchronization Service.
- Use manual configuration.

For more information about the automatic and manual configuration of the Microsoft 365 or Azure AD connectors, see *Modifying a Microsoft 365 connection* and *Modifying a Microsoft Azure Active Directory connection*, respectively, in the *Active Roles Synchronization Service Administration Guide*.

Active Roles availability on Azure and AWS Marketplace

Active Roles supports deployment on the Amazon Web Services (AWS) and Azure platforms via Active Roles Marketplace images, using your organization subscription.

The marketplace images contain Active Roles running on Windows Server 2022 Datacenter Edition.

NOTE: Amazon Marketplace does not offer AWS EC2 instances preinstalled with Active Roles. You must deploy the EC2 instances first, then install and configure Active Roles manually on them.

TIP: To install additional Active Roles components later, modify your existing installation. For more information, see *Installing optional tools and components* in the *Active Roles Installation Guide*.

AWS and Azure virtual environment recommendations

If you deploy Active Roles in an AWS or Azure virtual environment via its marketplace image, One Identity recommends using the following virtual environments to host your Active Roles installation.

TIP: Before choosing the Azure virtual machine (VM) or Amazon Elastic Compute Cloud (EC2) instance to use, see the following resources:

- For more information on Azure VMs, see [Windows virtual machines](#) in the *Microsoft Azure portal*.
- For more information on AWS EC2 instances, see [EC2 instance types](#) in the *Amazon Web Services portal*.

NOTE: One Identity offers limited support for the virtual environments recommended in this section, as the actual performance on the listed environments (and the optimal environment to choose) might depend on the number of dynamic groups, Managed Units (MU), policies, scripts, workflows and other resources managed in your organization.

One Identity reserves the right to withhold support until you adapt your virtual environment for optimal performance to manage your resources with Active Roles.

Recommended AWS EC2 instance types

The Active Roles marketplace image was tested to work with the following Amazon Elastic Compute Cloud (EC2) instances:

- **m5a.2xlarge:** 8 vCPU, 32 GB RAM, up to 10 Gbps network bandwidth, up to 2880 Mbps EBS bandwidth.
- **m5a.xlarge:** 4 vCPU, 16 GB RAM, up to 10 Gbps network bandwidth, up to 2880 Mbps EBS bandwidth.
- **m5.2xlarge:** 8 vCPU, 32 GB RAM, up to 10 Gbps network bandwidth, up to 4750 Mbps EBS bandwidth.
- **m5.xlarge:** 4 vCPU, 16 GB RAM, up to 10 Gbps network bandwidth, up to 4750 Mbps EBS bandwidth.
- **m4.2xlarge:** 8 vCPU, 32 GB RAM, EBS-only storage, high network performance.
- **m4.xlarge:** 4 vCPU, 16 GB RAM, EBS-only storage, high network performance.
- **m3.2xlarge** (previous generation): 2 vCPU, 30 GB RAM, non-EBS optimized SSD, high network performance.
- **m3.xlarge** (previous generation): 4 vCPU, 15 GB RAM, non-EBS optimized SSD, high network performance.

Recommended Azure VMs

One Identity recommends using the following Azure VMs with the Active Roles marketplace image:

- **Standard D8s v3:** 8 vCPU, 32 or 64 GB RAM, 12800 max IOPS, 64 GiB local storage.
- **Standard D4s v3:** 4 vCPU, 16 GB RAM, 6400 max IOPS, 32 GiB local storage.
- **Standard D3 v2:** 4 vCPU, 14 GB RAM, 0 max IOPS, 200 GiB local storage.
- **Standard DS3 v2:** 4 vCPU, 14 GB RAM, 12800 max IOPS, 28 GiB local storage.
- **Standard D2 v4:** 2 vCPU, 8 GB RAM, 3200 max IOPS, 16 GiB local storage.
- **Standard D2s v3:** 2 vCPU, 16 GB RAM, 3200 max IOPS, 16 GiB local storage.
- **Standard D2 v2:** 2 vCPU, 7 GB RAM, 0 max IOPS, 100 GiB local storage.

Supported AWS and Azure environment types

Active Roles supports the following virtual environment types:

- **Cloud-only:** Active Roles, its components, and all required third-party components are deployed on the same cloud platform. For more information on configuring this environment type, see *Configuring the Azure or AWS virtual machine* in the *Active Roles Installation Guide*.
- **Hybrid on-premises:** Some components required by Active Roles are deployed in your on-premises environment. For more information on configuring this environment type, see *Configuring a hybrid on-premises environment for Active Roles* in the *Active Roles Installation Guide*.

NOTE: One Identity provides no support or assistance in the configuration of these environments, or troubleshooting connectivity and performance issues related to the Azure and AWS services.

More resources

Additional information is available from the following:

- Online product documentation (<https://support.oneidentity.com/active-roles/>)
- Active Roles community (<https://www.oneidentity.com/community/active-roles>)

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. It supports simultaneous operation with multilingual data. 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.

Active Roles Language Pack

Available for download from the [One Identity Support Portal](#), the Active Roles Language Pack provides product localization for Active Roles. To enable localization, install the Language Pack on the machine(s) running the Active Roles Administration Service, Configuration Center, Console, Synchronization Service or Web Interface components.

The Active Roles Language Pack supports the following languages:

- For the Active Roles Administration Service, Configuration Center, Console and Synchronization Service components, the Language Pack provides support for German language.
- For the Active Roles Web Interface component, the Language Pack provides support for the following languages:
 - Chinese (Simplified and Traditional)
 - French
 - German
 - Portuguese (Brazilian and European)
 - Spanish

For more information on the features, limitations and installation steps of the Language Pack, see *Active Roles Language Pack* in the *Active Roles Administration Guide*.

About us

One Identity solutions eliminate the complexities and time-consuming processes often required to govern identities, manage privileged accounts and control access. Our solutions enhance business agility while addressing your IAM challenges with on-premises, cloud and hybrid environments.

Contacting us

For sales and other inquiries, such as licensing, support, and renewals, visit <https://www.oneidentity.com/company/contact-us.aspx>.

Technical support resources

Technical support is available to One Identity customers with a valid maintenance contract and customers who have trial versions. You can access the Support Portal at <https://support.oneidentity.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 at www.YouTube.com/OneIdentity
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product

Third-party contributions

This product contains some third-party components (listed below). Copies of their licenses may be found at referencing <https://www.oneidentity.com/legal/license-agreements.aspx>. Source code for components marked with an asterisk (*) is available at <http://opensource.quest.com>.

Table 34: List of Third-Party Contributions

Component	License or Acknowledgment
adodb 7.10.6070	Licensed under LGPL. For the license terms, see: https://adodb.org/dokuwiki/doku.php?id=index Copyright (c) Microsoft Corporation
AngleSharp 0.17.1	Licensed under the MIT License. For the license terms, see: https://github.com/AngleSharp/AngleSharp?tab=MIT-1-ov-file#readme
AngleSharpCss 0.17.0	Licensed under the MIT License. For the component license, see: https://github.com/AngleSharp/AngleSharp/blob/develop/LICENSE
Angular.js 1.7.2	Licensed under MIT. For the license terms, see: https://github.com/angular/angular.js/blob/master/LICENSE Copyright (c) 2014-2018 Google, Inc.
Angular.js 1.8.0	Licensed under MIT. For the license terms, see: https://github.com/angular/angular.js/blob/master/LICENSE Copyright (c) 2010-2020 Google LLC. http://angularjs.org
ANTLR 3.4.1.9004	Licensed under BSD-3. For the license terms, see: https://www.antlr3.org/license.html Copyright (c) 2010 Terence Parr
AutoMapper 10.0.0.0	Licensed under the MIT License. For the MIT License terms, see: https://licenses.nuget.org/MIT

Component	License or Acknowledgment
Azure.Core 1.38.0	Licensed under the MIT License. For the license terms, see: https://github.com/Azure/azure-sdk-for-net/blob/Azure.Core_1.24.0/LICENSE.txt
Azure.Identity 1.11.3	Licensed under the MIT License. For the license terms, see: https://licenses.nuget.org/MIT
Bootstrap 3.2	Licensed under the MIT License. For the license terms, see: https://github.com/twbs/bootstrap/blob/v5.3.3/LICENSE
Bootstrap 3.4.1	Licensed under the MIT License. For the license terms, see: https://github.com/twbs/bootstrap/blob/v5.3.3/LICENSE Copyright (c) 2011-2016 Twitter, Inc.
BouncyCastle 1.9.0	Licensed under the MIT X11 License. For the license terms, see: https://www.bouncycastle.org/csharp/licence.html Copyright (c) 2000 - 2024 The Legion of the Bouncy Castle Inc.
BouncyCastle.Cryptography 2.4.0	Licensed under the MIT license. For the license terms, see: https://github.com/bcgit/bc-csharp/blob/master/LICENSE.md
Castle.Core 5.0.0	Licensed under the Apache 2.0 license. For the license terms, see: https://licenses.nuget.org/Apache-2.0
DevArt dotConnect for Oracle 7.2.122.0	dotConnect for Oracle License Agreement Copyright 2002-2013, Devart. All Rights Reserved
FluentValidation 10.4.0	Licensed under the Apache 2.0 license. For the license terms, see: https://github.com/FluentValidation/FluentValidation?tab=Apache-2.0-1-ov-file#readme © Copyright 2009-2021, Jeremy Skinner

Component	License or Acknowledgment
Google.Protobuf 3.20.1	Licensed under the BSD 3-Clause License. For the license terms, see: https://licenses.nuget.org/BSD-3-Clause
HtmlSanitizer 8.0.843	Licensed under the MIT License. For the license terms, see: https://github.com/mganss/HtmlSanitizer/blob/master/LICENSE.md Copyright (c) 2013-2016 Michael Ganss and HtmlSanitizer contributors.
ILMerge 3.0.41	Licensed under the MIT License. For the license terms, see: https://github.com/dotnet/ILMerge?tab=MIT-1-ov-file#readme
JQuery 3.6.0	Copyright JS Foundation and other contributors, https://js.foundation/ The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. Licensed under the MIT License. For the license terms, see: https://github.com/jquery/jquery?tab=MIT-1-ov-file#readme
JQuery UI 1.12.1	Copyright OpenJS Foundation and other contributors, https://openjsf.org/ Licensed under the MIT License. For the license terms, see: https://github.com/jquery/jquery-ui?tab=License-1-ov-file#readme
K4os.Compression.LZ4 1.2.16	Copyright (c) 2017 Milosz Krajewski Licensed under the MIT License. For the license terms, see: https://raw.githubusercontent.com/MiloszKrajewski/K4os.Compression.LZ4/master/LICENSE
K4os.Compression.LZ4.Streams 1.2.16	Copyright (c) 2017 Milosz Krajewski Licensed under the MIT License. For the license terms, see: https://raw.githubusercontent.com/MiloszKrajewski/

Component	License or Acknowledgment
	K4os.Compression.LZ4/master/LICENSE
K4os.Hash.xxHash 1.0.7	Copyright (c) 2017 Milosz Krajewski Licensed under the MIT License. For the license terms, see: https://github.com/MiloszKrajewski/K4os.Hash.xxHash/blob/master/LICENSE
MediatR 12.2.0	Licensed under Apache 2.0. For the license terms, see: https://github.com/jbogard/MediatR?tab=Apache-2.0-1-ov-file#readme Copyright © Jimmy Bogard
MediatR.Contracts 2.0.1.0	Licensed under Apache 2.0. For the license terms, see: https://github.com/jbogard/MediatR?tab=Apache-2.0-1-ov-file#readme Copyright © Jimmy Bogard
MediatR.Extensions.Microsoft.DependencyInjection 9.0.0	Licensed under Apache 2.0. For the license terms, see: https://github.com/jbogard/MediatR?tab=Apache-2.0-1-ov-file#readme Copyright © Jimmy Bogard
Microsoft .Net Framework 4.8	© Microsoft Corporation. All rights reserved. Licensed under the MICROSOFT .NET LIBRARY 1.0 License.
Microsoft.ApplicationInsights 2.20.0	Licensed under the MIT License. For the license terms, see: https://licenses.nuget.org/MIT
Microsoft.ApplicationInsights.Agent.Intercept 2.4.0	Licensed under the MIT License. For the license terms, see: https://licenses.nuget.org/MIT
Microsoft.AspNet.SignalR 2.4.3	Licensed under Apache 2.0. For the license terms, see: https://raw.githubusercontent.com/aspnet/AspNetCore/2.0.0/LICENSE.txt Copyright © Microsoft Corporation

Component	License or Acknowledgment
Microsoft.AspNet.SignalR.Core 2.4.3	Licensed under Apache 2.0. For the license terms, see: https://raw.githubusercontent.com/aspnet/AspNetCore/2.0.0/LICENSE.txt Copyright © Microsoft Corporation
Microsoft.AspNet.SignalR.JS 2.4.3	Licensed under Apache 2.0. For the license terms, see: https://raw.githubusercontent.com/aspnet/AspNetCore/2.0.0/LICENSE.txt Copyright © Microsoft Corporation
Microsoft.AspNet.SignalR.SelfHost 2.4.3	Licensed under Apache 2.0. For the license terms, see: https://raw.githubusercontent.com/aspnet/AspNetCore/2.0.0/LICENSE.txt Copyright © Microsoft Corporation
Microsoft.AspNet.SignalR.SystemWeb 2.4.3	Licensed under Apache 2.0. For the license terms, see: https://raw.githubusercontent.com/aspnet/AspNetCore/2.0.0/LICENSE.txt Copyright © Microsoft Corporation
Microsoft.AspNet.TelemetryCorrelation 1.0.8	Licensed under Apache 2.0. For the license terms, see: https://raw.githubusercontent.com/aspnet/AspNetCore/2.0.0/LICENSE.txt Copyright © Microsoft Corporation
Microsoft.AspNetCore 2.2.0	Licensed under Apache 2.0. For the license terms, see: https://raw.githubusercontent.com/aspnet/AspNetCore/2.0.0/LICENSE.txt Copyright © Microsoft Corporation
Microsoft.Bcl.AsyncInterfaces 6.0.0	Licensed under the MIT License. For the license terms, see: https://github.com/dotnet/runtime?tab=MIT-1-overfile#readme Copyright © .NET Foundation and Contributors
Microsoft.Bcl.AsyncInterfaces	Licensed under the MIT License. For the license terms,

Component	License or Acknowledgment
8.0.0	see: https://github.com/dotnet/runtime?tab=MIT-1-ov-file#readme Copyright © .NET Foundation and Contributors
Microsoft.CodeAnalysis 2.8.0	Licensed under Apache 2.0. For the license terms, see: https://www.apache.org/licenses/LICENSE-2.0.html Copyright © Microsoft Corporation
Microsoft.CodeAnalysis.Razor 2.2.0	Licensed under Apache 2.0. For the license terms, see: https://www.apache.org/licenses/LICENSE-2.0.html Copyright © Microsoft Corporation
Microsoft.DiaSymReader.Native.x86 14.12.25830.2	Licensed under the MIT license. For the license terms, see: https://github.com/dotnet/roslyn?tab=MIT-1-ov-file#readme Copyright © .NET Foundation and Contributors
Microsoft.DotNet.PlatformAbstractions 2.1.0	Licensed under the MIT License. For the license terms, see: https://github.com/dotnet/core-setup/blob/master/LICENSE.TXT Copyright © 2015 .NET Foundation Copyright © Microsoft Corporation
Microsoft.Exchange.WebServices 15.00	Licensed under the MIT 1.0 License. For the license terms, see: https://github.com/OfficeDev/ews-managed-api/blob/master/license.txt Copyright © Microsoft Corporation
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Last updated: 30 November 2016

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