

Active Roles 8.0.1 SP1 LTS

Release Notes

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These release notes provide information about the Active Roles 8.0.1 SP1 LTS release. For the most recent documents and product information, see [Active Roles Technical Documents](#) on the *One Identity support portal*.

About this release

Active Roles 8.0.1 SP1 LTS (build 8.0.1.102) is a standalone service pack release containing additional security enhancements and resolved issues compared to the original Active Roles 8.0.1 LTS (build 8.0.1.91) release.

- For more information on the enhancements of Active Roles 8.0.1 SP1 LTS and 8.0.1 LTS, see [Enhancements](#).
- For more information on other resolved issues fixed in Active Roles 8.0.1 SP1 LTS and 8.0.1 LTS, see [Resolved issues](#).
- For more information on the list of known issues, see [Known issues](#).

Enhancements

The following is a list of enhancements contained in Active Roles 8.0.1 LTS and its service packs. Newer service packs cumulatively contain the enhancements of previous service packs and the initial Active Roles 8.0.1 LTS release.

Enhancements in Active Roles 8.0.1 SP1 LTS

NOTE: The following enhancements are available starting from Active Roles 8.0.1 SP1 LTS (build 8.0.1.102). To check the build of your Active Roles 8.0.1 LTS installation:

- In the Active Roles Configuration Center, navigate to **i (Information) > Technical Information**.
- Alternatively, open the **Add or Remove Programs** list of the operating system, search for One Identity Active Roles, then click its entry.

Table 1: General Active Roles enhancements

Enhancement	Issue ID
General security enhancements in all Active Roles components.	444729

Enhancements in Active Roles 8.0.1 LTS

NOTE: The following enhancements are available starting from Active Roles 8.0.1 LTS (build 8.0.1.91).

Table 2: General enhancements

Enhancement	Issue ID
<p>In preparation for the deprecation of the Remote PowerShell (RPS) protocol in Exchange Online PowerShell, Active Roles 8.0.1 LTS is updated to:</p> <ul style="list-style-type: none">• Use Exchange Online PowerShell v3 instead of earlier versions.• Use cmdlet <code>Connect-ExchangeOnline</code> instead of the deprecated cmdlet <code>New-PSSession</code> when establishing Exchange Online connections. <p>For more information, see Announcing Deprecation of Remote PowerShell (RPS) Protocol in Exchange Online PowerShell in the <i>Microsoft Tech Community</i> portal.</p> <p>NOTE: You can continue using cmdlet <code>New-PSSession</code> to connect to on-premises Exchange Server deployments.</p>	402974

Table 3: Synchronization Service enhancements

Enhancement	Issue ID
<p>Updated the Generic SCIM Connector with the following enhancements:</p> <ul style="list-style-type: none">• Added support for the following Starling Connect connectors and connector versions:	404915

Enhancement	Issue ID
<ul style="list-style-type: none"> • Pipedrive 1.0 • ServiceNow 2.0 • SuccessFactors HR 9.0 • WorkdayHR 3.0 • Zendesk 1.0 <p>NOTE: While the Generic SCIM Connector may work with other SCIM 2.0-based Starling Connect connectors, One Identity tested it to work only with these connectors and connector versions.</p> <ul style="list-style-type: none"> • Added new Query only synced attributes setting to support querying only attributes that are specifically defined for synchronization. • Added new Starling cursor-based pagination setting to support Starling Connect connectors using cursor-based pagination instead of the SCIM protocol-defined index-based pagination method. <p>For more information, see <i>Configuring data synchronization with the Generic SCIM Connector</i> in the <i>Active Roles Synchronization Service Administration Guide</i>.</p>	
<p>In preparation for the deprecation of the Remote PowerShell (RPS) protocol in Exchange Online PowerShell, Active Roles Synchronization Service is updated with the following enhancements:</p> <ul style="list-style-type: none"> • Increased the minimum required version of Exchange Online PowerShell to v3.0.0. • Replaced <i>New-PSSession</i> cmdlet calls with <i>Connect-ExchangeOnline</i> cmdlet calls. • Updated the Microsoft 365 Connector (formerly known as Office 365 Connector) and the Microsoft Azure AD Connector to support certificate-based authentication and automatic configuration. <p>For more information on configuring the updated connectors, see <i>Working with Microsoft 365</i> and <i>Working with Microsoft Azure Active Directory</i> in the <i>Active Roles Synchronization Service Administration Guide</i>.</p>	403476
<p>The Synchronization Service Capture Agent now supports Local Security Authority (LSA). For more information, see Configuring Additional LSA Protection in the <i>Microsoft Windows Server documentation</i>.</p>	125828

Table 4: Web Interface enhancements

Enhancement	Issue ID
The Active Roles Web Interface was updated to support quick searches for AD	412502

LDS and Azure AD objects. These settings are enabled by default: disabling them will result in AD LDS and Azure AD objects not appearing in quick search results.

Resolved issues

The following is a list of issues addressed in Active Roles 8.0.1 LTS and its service packs. Newer service packs cumulatively contain the resolved issues of previous service packs and the initial Active Roles 8.0.1 LTS release.

Resolved issues in Active Roles 8.0.1 SP1 LTS

NOTE: The following issues were fixed only in Active Roles 8.0.1 SP1 LTS (build 8.0.1.102). To check the build of your Active Roles 8.0.1 LTS installation:


- In the Active Roles Configuration Center, navigate to  **(Information) > Technical Information**.
- Alternatively, open the **Add or Remove Programs** list of the operating system, search for One Identity Active Roles, then click its entry.

Table 5: General Active Roles resolved issues

Resolved Issue	Issue ID
Previously, Active Roles forced rebuilding dynamic groups each time a member was added to or removed from the dynamic group.	443493
This issue is now fixed, so Active Roles now rebuilds dynamic groups only if the rebuild is triggered manually or with a Scheduled Task.	

Table 6: Console (MMC Interface) resolved issues

Resolved Issue	Issue ID
Previously, the change history for operation types Deprovision , Undo Deprovision and Run Scheduled Workflow remained indefinitely in the Management History database despite running the Change Tracking Cleanup scheduled task.	399889
The issue is now fixed and old Management History records are deleted as expected.	

Table 7: Active Roles Synchronization Service resolved issues

Resolved Issue	Issue ID
<p>Previously, the Azure AD Connector could fail to find all objects in Azure during import tasks.</p> <p>This issue could occur if <code>HttpClient</code> timed out during Graph API requests, for example because of network issues. In such cases, Azure AD Connector could not handle the timeout correctly.</p> <p>The issue was fixed by:</p> <ul style="list-style-type: none">• Modifying the import process so that it stops when a timeout occurs, preventing the successful import of incomplete data.• Implementing a new retry policy which retries the request up to 3 times before timeout, minimizing the chance of the issue occurring.	437816

Table 8: Active Roles Web Interface resolved issues

Resolved Issue	Issue ID
<p>Previously, when using Active Roles in a forest topology with:</p> <ul style="list-style-type: none">• One root domain,• Several child domains,• Active Directory Federation Services and Active Roles with federated authentication configured on one of the child domains, <p>Then users registered in another child domain of the forest could not log in to the Active Roles Web Interface.</p> <p>This issue was fixed by making sure that if Active Roles does not find the user in the current domain, then it continues searching for them in the forest using wider referral scopes each time it fails.</p>	447483
<p>Previously, authentication would fail under the following conditions:</p> <ul style="list-style-type: none">• When using WS-Federation authentication to the Web Interface.• When authenticating a user from an Active Directory forest or domain that is trusted by the AD domain that Active Roles is joined to.• When that authenticated user in the trusted AD domain has a UPN suffix that exists in both AD domains. <p>The issue has been resolved.</p>	437298
<p>Previously, when creating an Azure or hybrid user, the Licenses tab did not populate even if the Azure tenant had licenses assigned. The issue is now resolved.</p>	433681

Resolved issues in Active Roles 8.0.1 LTS

NOTE: The following issues were fixed in Active Roles 8.0.1 LTS (build 8.0.1.91) and its service packs.

Table 9: Active Roles Service resolved issues

Resolved Issue	Issue ID
<p>Previously, scheduled Active Roles operations could fail with the following error if the Active Directory domain controller (DC) assigned to perform the scheduled operation was unavailable:</p> <div>The server is not operational.</div> <p>This issue occurred because Active Roles did not fall back to another working DC in the Disaster Recovery Plan (DRP) process in such cases, and is now fixed.</p>	407373

Table 10: Configuration Transfer Wizard resolved issues

Resolved Issue	Issue ID
<p>Previously, the Active Roles Configuration Transfer Wizard could not be installed, even if the required Active Roles ADSI Provider was installed.</p> <p>This issue was caused by a version checking problem, and is now fixed.</p>	389286

Table 11: Console (MMC Interface) resolved issues

Resolved Issue	Issue ID
<p>Previously, when applying both an Access Template (AT) using a Full Control permission and another granular AT denying access to certain password-related attributes (such as PasswordNeverExpires, UserCannotChangePassword, UserMustChangePasswordAtNextLogon) to a user, the deny AT did not take effect for the user.</p> <p>This issue was caused by the AT specifying an explicit deny not taking precedence over the AT using the Full Control permission.</p> <p>The issue was fixed by ensuring that explicit deny ATs always take precedence over inherited allow permissions.</p>	410412
<p>Previously, in certain environments, Active Roles might not update Dynamic Groups in time when adding a new rule or forcing a rebuild. Also, in case of more than 1,000 changes, the changes were not processed until the nightly scheduled task.</p>	405859

Resolved Issue

Issue ID

To solve this problem, Active Roles features a rebuilt Dynamic Group logic that removes the 1,000 group member limit for normal group membership changes, and also ensures that changes are now always processed immediately.

Previously, when configuring the mail configuration in **Configuration > Server Configuration > Mail Configuration > Default Mail Settings Properties** to use Exchange Web Services with Exchange Online and send approval responses by email, response emails sent by approvers could stuck indefinitely without being processed by Active Roles. This problem did not affect approval workflows using on-premises Exchange Server mailboxes.

The issue was caused by approval notifications not supporting Exchange Web Service modern authentication, and is now fixed.

404659

Previously, when configuring the mail configuration in **Configuration > Server Configuration > Mail Configuration > Default Mail Settings Properties** to use Exchange Web Services with Exchange Online and send approval responses by email, the `mailto:` links of approval workflow notification emails always contained the service account address even if an impersonated account was configured in the mail configuration settings.

The issue was caused by approval notifications not supporting Exchange Web Service modern authentication, so Active Roles could not collect emails from the impersonated account. Instead, it was falling back to the service account address.

404217

This issue is now fixed, so when you configure an impersonated account address, that email address will appear properly in the approval workflow email messages.

Previously, the change history for operation types **Deprovision, Undo Deprovision** and **Run Scheduled Workflow** remained indefinitely in the Management History database despite running the **Change Tracking Cleanup** scheduled task.

399889

The issue is now fixed and old Management History records are deleted as expected.

Previously, users received an Access denied error in the Web Interface when attempting to create a new cloud-only user if any of the following Access Templates (ATs) were assigned to them in the Active Roles Console:

392939

- **Azure Cloud User - Full Control**
- **Azure Cloud User - Create Objects**
- Any custom AT based on the settings of **Azure Distribution Group - Create Objects**
- Any custom AT in which you assigned the **Full Control** permission on the Azure users container.

Resolved Issue	Issue ID
This issue is now fixed, and assigning these ATs to users now delegate the proper administration permissions.	
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 native Active Directory tools resulted in Active Roles failing to load the list of added users. 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.	390095
Previously, undoing the deprovision of a user object that was originally licensed via group-based licensing would result in the previous license reassigned to the object directly instead of inheriting it from the group. The issue is fixed and now if a user has a license inherited from a group, after deprovisioning and undo-deprovisioning it, the license will be inherited from the group again instead of being reassigned directly.	388433

Table 12: Management Tools resolved issues

Resolved Issue	Issue ID
Previously, the Active Roles Management Pack for SCOM showed an incorrect version number. This issue is now fixed.	405577

Table 13: Installer resolved issues

Resolved Issue	Issue ID
Previously, attempting to install Microsoft OLE DB Driver for SQL Server via the Active Roles installer required users to manually install the prerequisite Microsoft Visual C++ Redistributable for Visual Studio packages, as they were not included in the Active Roles installation package. This issue was fixed by including the packages in the installer.	411389
Previously, in the Introduction page of the installer, the Release Notes URL was incorrect and did not work. This issue is now fixed.	388317

Table 14: Synchronization Service resolved issues

Resolved Issue	Issue ID
<p>Previously, when running the Azure BackSync with the Azure AD Connector for several thousand users, Synchronization Service did not indicate the number of processed user objects until all user objects were processed. Because of this, it could appear that nothing happened until the on-screen counter jumped to the total number of processed objects.</p> <p>The issue is fixed, and now the counter of processed objects in the Azure AD Connector increases gradually, as expected.</p>	401938
<p>Previously, the Synchronization Service Capture Agent recorded and processed password change events for computer accounts.</p> <p>This behavior was changed so that the Capture Agent no longer logs and forwards password change events for computer accounts to the Synchronization Service.</p>	307297
<p>Previously, the SCIM Connector did not support synchronizing data from WorkdayHR via Starling Connect.</p> <p>This issue was fixed by updating the WorkdayHR schema.</p>	294258

Table 15: Web Interface resolved issues

Resolved Issue	Issue ID
<p>Previously, when setting a custom global color scheme in Customization > Global settings > Color scheme, the customized Web Interface scheme could appear incorrectly in the user interface, with the sidebar colors, various selected elements and certain panes not following the base color of the scheme.</p> <p>This issue was fixed by adjusting the management of customized Web Interface themes.</p>	407336
<p>Previously, customizing the Web Interface could negatively impact the functionality and performance of object search queries. Following customization, queries in the Web Interface could return too many objects, and query searches could slow down due to performing complex internal filtering before displaying query results in the Web Interface.</p> <p>This issue is now fixed, so customized Web Interface instances now work without the listed problems.</p>	395064
<p>Previously, searching for Azure objects took approximately 15-20 seconds.</p> <p>The issue has been resolved by modifying Microsoft Graph API pagination to reduce network traffic. As a result, searching for Azure objects is now significantly faster.</p>	389314

Resolved Issue	Issue ID
<p>Previously, when selecting an AD LDS user, the Web Interface returned an 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 now populated correctly.</p>	386102
<p>Previously, using a personal view to open an Organizational Unit (OU) whose name contained special characters resulted in a Directory object not found error.</p> <p>This issue was caused by Active Roles removing these special characters from the OU name when saving the configured personal view, and it is now fixed.</p>	322727
<p>Previously, when using the Customization > Directory Objects > Customize Navigation Bar > General option of the Web Interface to open the Item Properties of the Reload button or the Restore Default button, clicking OK to close the dialog without any changes and reloading the configuration resulted in the changed Reload or Restore Default button no longer working.</p> <p>This issue occurred because Active Roles was unable to get the target URL of these buttons, resulting in the Item Properties > URL to open field appearing empty in the Web Interface. If this field was left empty, clicking OK in the dialog to save the button settings broke the button.</p> <p>To fix the issue, the Web Interface now sends a pop-up alert to inform users that the URL to open field cannot be left empty.</p>	322689
<p>Previously, when copying a shared, equipment or room mailbox in the Web Interface, the copied mailbox did not inherit the original mailbox type, and was created as a standard User Mailbox instead. In other words, the value of its msExchRecipientDisplayType attribute was always set to 1073741824 instead of inheriting the original value.</p> <p>This issue was caused by a Web Interface infrastructure problem, and was fixed by implementing a switch case to determine the type of mailbox and add the proper attribute during the copy process.</p>	307164
<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> <div> <p>The object 'groupName' is already in the list and cannot be added for the second time.</p> </div>	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 16: General known issues

Known Issue	Issue ID
Activating the EnableAntiForgery key (<add key="EnableAntiForgery" value="true"/> in web.config) may cause the following error message: <div>Session timeout due to inactivity. Please reload the page to continue.</div>	91977

Workaround

Update the **IgnoreValidation** key in the <appSettings> section by adding a property value in lowercase:

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.

Table 17: Configuration Center known issues

Known Issue	Issue ID
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: <ul style="list-style-type: none">• Connect failed: The system cannot find the file specified.• Delegate to an instance method cannot have null 'this'.	448694

Known Issue	Issue ID
<p>At the same time, Active Roles logs the following error in the Event Viewer:</p> <p>Critical error occurred upon starting Active Roles Administration Service. Details: Database <active-roles-database> on SQL Server <sql-server-name> is unavailable.</p> <p>This issue occurs if the SQL Server used by Active Roles 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.</p> <p>Workaround</p> <p>To avoid this issue from occurring:</p> <ul style="list-style-type: none"> • Install SQL Server and Active Roles on different machines. • Make sure that the SQL Server installation used by Active Roles is up and running before starting the upgrade process. <p>If you have your SQL Server and Active Roles installed on the same machine, and the error occurs, then close and reopen the Active Roles Configuration Center after SQL Server started running.</p>	
When configured for Groups and Contacts, the Office 365 and Azure Tenant Selection policy displays additional tabs.	229031
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
<p>In Managed Units, when querying Azure objects, the following operators do not work due to a Graph API limitation:</p> <ul style="list-style-type: none"> • Ends with • Contains • Present <p>For more information, see Support for filter by properties of Microsoft Entra ID (directory) objects in the <i>Microsoft Graph documentation</i>.</p>	420917
The format of the edsAzureSubscribedSKUs 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 8.0, in the Active Roles Console, you cannot modify this attribute to assign licenses to hybrid AD users.	440896

Known Issue	Issue ID
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.	200328
Workaround One Identity recommends scheduling the workflows with different scripts or at a different time.	
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 are not displayed in the same window.	91901
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. 	

Table 19: Installer known issues

Known Issue	Issue ID
After upgrading Active Roles, the pending approval tasks are not displayed 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 settings does not work properly.	125880
Workaround To change the language of the Web Interface, configure the language with the Active Roles 8.0.1 SP1 LTS > Settings > User interface language option of the Web Interface.	

Known Issue	Issue ID
In the Active Roles Console, the O365 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.	257995
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
The Microsoft 365 Connector (formerly known as Microsoft Office 365 Connector) can only synchronize up to 1,000 mail users.	405966
Azure BackSync can only synchronize up to 1,000 contacts.	387685
In the Active Roles Synchronization Service, the following attributes of the Microsoft Azure AD Connector are currently not supported and cannot be queried via the Microsoft Graph API: <ul style="list-style-type: none"> • user attributes: <ul style="list-style-type: none"> • aboutMe • birthday • contacts • hireDate • interests • mySite • officeLocation 	304074

Known Issue	Issue ID
<ul style="list-style-type: none"> • pastProjects • preferredName • responsibilities • schools • skills • group attributes: <ul style="list-style-type: none"> • acceptedSenders • allowExternalSenders • autoSubscribeNewMembers • hasMembersWithLicenseErrors • hideFromAddressLists • hideFromOutlookClients • isSubscribedByMail • membersWithLicenseErrors • rejectedSenders • unseenCount <p>This means that although these attributes are visible, they cannot be set in a mapping rule.</p>	
After running the get-qcworkflowstatus cmdlet in the Synchronization Service, the workflow status is not accurate.	125768

Table 22: Web Interface known issues

Known Issue	Issue ID
<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> <p>Workaround</p> <p>Restart the Administration Service.</p>	293380
<p>In the Active Roles Web Interface, Azure roles are not restored automatically after performing an Undo Deprovision action on a user.</p> <p>Workaround</p> <p>After the Undo Deprovision action is completed, assign the Azure roles to the user manually.</p>	172655

Known Issue	Issue ID
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

Table 23: Known Issues – Active Roles Add-on Manager

Known Issue	Issue 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: <pre><site url>/customization/metadata-Reload.aspx?ReloadFromWorkingCopy=1</pre> 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
When you use Add-on Manager to uninstall an add-on, the following error may	180700

occur:

Object 'objectDN' was not found.

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.

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 be displayed.

180808

This issue may occur if you provide 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

```
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.

System requirements

Before installing Active Roles 8.0.1 SP1 LTS, ensure that your system meets the following minimum hardware and software requirements, and install the following required software.

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](#).

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

Requirement	Details
Exchange Online PowerShell V3 module 3.0.0	The Exchange Online PowerShell V3 module version 3.0.0 (or newer) must be installed on the computer(s) running the Administration Service. For more information, see Exchange Online PowerShell in the <i>Microsoft Exchange PowerShell documentation</i> .
Az.Accounts PowerShell module 2.5.3	You must install Az.Accounts PowerShell module version 2.5.3 (or older) on the computer(s) running Active Roles Administration Service and Active Roles Synchronization Service. For installation instructions, see Az.Accounts 2.5.3 in the <i>Microsoft PowerShell Gallery</i> .
Microsoft Edge WebView2 Runtime	You must install Microsoft Edge WebView2 Runtime on the computer running Active Roles Administration Service. For more information, see Introduction to Microsoft Edge WebView2 in the <i>Microsoft Edge Developer documentation</i> .

Requirement	Details
(Optional) One Identity certificate	If your organization enforces the AllSigned policy, you must install the One Identity certificate during the installation of Active Roles.

For the system requirements of each Active Roles component, see the following sections:

- [Administration Service requirements](#)
- [Web Interface requirements](#)
- [Console requirements](#)
- [Management Tools requirements](#)
- [Synchronization Service requirements](#)
 - [Synchronization Service Capture Agent](#)
- [Language Pack requirements](#)

Hardware requirements

Table 24: Hardware requirements

Requirement	Details
CPU	<p>For Administration Service, Web Interface and Synchronization Service, any of the following:</p> <ul style="list-style-type: none"> • Intel 64 (EM64T) • AMD64 • Minimum 2 cores • CPU speed: 2.0 GHz or faster. <p>NOTE: The number of cores required depends on the size of the environment and the total number of managed objects.</p> <p>NOTE: For Synchronization Service, One Identity recommends using a multi-core CPU for the best performance.</p> <p>For Console and Management Tools, any of the following:</p> <ul style="list-style-type: none"> • Intel x86 • Intel 64 (EM64T) • AMD64 • CPU speed: 1.0 GHz or faster.
RAM	<p>Administration Service:</p> <p>A minimum of 4 GB of RAM.</p> <p>NOTE: The amount of RAM required depends on the size of the environment.</p>

Requirement	Details
onment and the total number of managed objects.	<p>Web Interface, Synchronization Service: A minimum of 2 GB of RAM.</p> <p>Console, Management Tools: A minimum of 1 GB of RAM.</p>
Hard disk space	<p>Administration Service, Web Interface, Console, Management Tools: A minimum of 100 MB of free disk space.</p> <p>Synchronization Service: 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 10, Professional or Enterprise edition, 32-bit (x86) or 64-bit (x64). • Microsoft Windows 8.1, Professional or Enterprise edition, 32-bit (x86) or 64-bit (x64).

Administration Service requirements

This section lists the system requirements of Active Roles Administration Service.

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 25: 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. • Microsoft SQL Server 2014, any edition, 32-bit (x86) or 64-bit (x64), with or without any Service Pack. • Azure SQL hosted databases. <p>To connect Active Roles to a Microsoft SQL Server deployment, the following driver is required:</p> <ul style="list-style-type: none"> • Microsoft OLE DB Driver for SQL Server (MSOLEDBSQL).
Windows Management Framework	Windows Management Framework 5.1 (download here) is required on all supported operating systems.
Operating system on domain controllers	<p>Active Roles retains all features and functions when managing Active Directory on domain controllers running any of these operating systems, any edition, with or without any Service Pack:</p> <ul style="list-style-type: none"> • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 <p>NOTE: Active Roles deprecates managed domains with the domain functional level lower than Windows Server 2008 R2. One Identity recommends that you raise the functional level of the domains managed by Active Roles to 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 <p>NOTE: Microsoft Exchange 2013 and 2013 CU11 are not supported. For more information, see Knowledge Base Article 202695.</p>

Web Interface requirements

This section lists the system requirements of the Active Roles Web Interface.

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 26: Web Interface requirements

Requirement	Details
Internet Services	<p>Active Roles Web Interface requires the Web Server (IIS) server role 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 <p>Configure Internet Information Services (IIS) to provide Read/Write delegation for the following features:</p> <ul style="list-style-type: none">• Handler Mappings• Modules• Use Feature Delegation in IIS Manager to confirm that these features have their delegation set to Read/Write.

Requirement	Details
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. <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>

Console requirements

This section lists the system requirements of Active Roles Console (also known as MMC Interface).

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 27: Console (MMC Interface) requirements

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

Management Tools requirements

Active Roles Management Tools is a composite component that includes the Active Roles Management Shell, ADSI Provider, and SDK. On a 64-bit (x64) system, Active Roles Management Tools also includes the Active Roles Configuration Center component.

This section lists the system requirements of Active Roles Management Tools.

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 28: Management Tools requirements

Requirement	Details
Windows Management Framework	Windows Management Framework 5.1 (download here) 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>

Synchronization Service requirements

This section lists the system requirements of Active Roles Synchronization Service.

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 29: Synchronization Service requirements

Requirement	Details
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. • Microsoft SQL Server 2014, any edition, 32-bit (x86) or 64-bit (x64), with or without any Service Pack. <p>NOTE: Active Roles Synchronization Service does not support Azure SQL hosted databases.</p>

Requirement	Details
Windows Management Framework	Windows Management Framework 5.1 (download here) is required on all supported operating systems.
Supported connections	<p>Active Roles Synchronization Service can connect to the following data systems:</p> <ul style="list-style-type: none"> • Microsoft Active Directory Domain Services (AD DS) with the domain or forest functional level of Windows Server 2016 or higher. • Microsoft Active Directory Lightweight Directory Services (AD LDS) running on any Windows Server operating system supported by Microsoft. • The following Microsoft Exchange Server versions: <ul style="list-style-type: none"> • Microsoft Exchange Server 2019 • Microsoft Exchange Server 2016 <p>NOTE: Microsoft Exchange 2013 and 2013 CU11 are not supported. For more information, see Knowledge Base Article 202695.</p> <ul style="list-style-type: none"> • Microsoft Lync Server version 2013 with limited support. • Microsoft Skype for Business 2019, 2016 or 2015. • Microsoft Windows Azure Active Directory (Azure AD) using Microsoft Graph API version 1.0. • Microsoft Office 365 directory. • Microsoft Exchange Online service. • Microsoft Skype for Business Online service. • Microsoft SharePoint Online service. • Microsoft SQL Server, any version supported by Microsoft. • Microsoft SharePoint 2019, 2016, or 2013. • Active Roles version 7.4.3, 7.4.1, 7.3, 7.2, 7.1, 7.0, and 6.9. • One Identity Manager version 7.0 (D1IM 7.0). • One Identity Manager version 8.0. • Support for Generic LDAP Connector, MySQL Connector, Open LDAP Connector, IBM Db2 Connector, Salesforce Connector, Service now Connector, and IBM RACF Connector. • Support for SCIM-based data import operations.

Requirement	Details
	<ul style="list-style-type: none"> • Support for Oracle Database, Oracle Database User Accounts, Oracle Unified Directory, Micro Focus NetIQ Directory, and IBM AS/400 connectors. • Data sources accessible through an OLE DB provider. • Delimited text files.
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 Quick Start 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 reliable Internet connection.

Synchronization Service Capture Agent

To synchronize passwords from an Active Directory (AD) domain to other connected data systems, install Active Roles Synchronization Service Capture Agent on all domain controllers (DCs) in the source AD domain.

This section lists the system requirements of Active Roles Synchronization Service Capture Agent.

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 30: Synchronization Service Capture Agent requirements

Requirement	Details
Operating system	<p>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:</p> <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>

Language Pack requirements

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.

Table 31: Hardware requirements

Requirement	Details
Active Roles version	<p>The Active Roles 8.0.1 LTS Language Pack requires Active Roles version 8.0.1 LTS of the Administration Service, Configuration Center, Console, Synchronization Service or the Web Interface installed on the target machine.</p> <p>The Active Roles 8.0.1 LTS 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.

Add-on Manager requirements

This section lists the system requirements of the Active Roles Add-on Manager.

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 32: 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

Requirement	Details
	<ul style="list-style-type: none"> • Microsoft Windows Server 2019 • Microsoft Windows Server 2016
Active Roles Console	Add-on Manager requires Active Roles 8.0.1 SP1 LTS Console installed.
Microsoft Windows PowerShell	Windows PowerShell 5.1 or later.
Web browser	Microsoft Edge 79 (or newer) based on Chromium.

Diagnostic Tools requirements

This section lists the system requirements of the Active Roles Diagnostic Tools.

All Active Roles components require:

- Microsoft .NET Framework 4.7.2 and 4.8. For more information, see [Installing .NET Framework for developers](#) in the *Microsoft .NET documentation*.
- Visual C++ 2017 Redistributable.

Table 33: 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

Product licensing

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

The product usage statistics can be used as a guide to show the scope and number of managed objects in Active Roles.

Upgrade and version compatibility

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

You can upgrade the following versions of Active Roles to Active Roles 8.0.1 SP1 LTS:

- 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 8.0 LTS
- Active Roles 8.0.1 LTS

For instructions on how to upgrade, see the *Active Roles Quick Start Guide*.

IMPORTANT: You can upgrade from this long-term support release to the following feature releases:

- Active Roles 8.1.1
- Active Roles 8.1.3
- Active Roles 8.1.3 SP1

However, consider that any resolved issues that were fixed in Active Roles 8.0.1 SP1 LTS but not fixed in the above feature releases will appear again in your Active Roles installation after a successful upgrade.

For the list of fixes shipped in these feature releases, see *Resolved issues* in their respective *Active Roles Release Notes* documents.

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.

Upgrade and installation instructions

This section contains information about the upgrade and installation changes affecting Active Roles 8.0.1 SP1 LTS.

- For instructions on how to upgrade from an earlier version of Active Roles or how to install and initially configure Active Roles, see the *Active Roles Quick Start 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 8.0.1 SP1 LTS, see the following information.

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 8.0.1 SP1 LTS. Otherwise, Active Roles will not receive the required permissions for managing existing Azure tenants, and tenant administration in Active Roles 8.0.1 SP1 LTS will not work correctly. For more information, see *Reconfiguring Azure tenants during upgrade configuration* in the *Active Roles Quick Start Guide*.

Changes related to Active Roles Synchronization Service

NOTE: Active Roles 7.5 introduced support for Modern Authentication in the Azure BackSync workflows of the Active Roles Synchronization Service. After upgrading to Active Roles 8.0.1 SP1 LTS from an earlier version, if you previously had an Azure BackSync workflow configured, you will be prompted to reconfigure it in the Active Roles 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*.

Rolling back the 8.0.1 SP1 LTS installation

Active Roles 8.0.1 SP1 LTS is delivered as a full Active Roles product installation instead of a patch or hotfix. Because of this, if you upgraded Active Roles 8.0.1 LTS to 8.0.1 SP1 LTS, you cannot roll back 8.0.1 SP1 LTS to Active Roles 8.0.1 LTS.

More resources

Additional information is available from the following resources:

- 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.

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- 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
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Table 34: List of Third-Party Contributions

Component	License or Acknowledgment
Active Directory Authentication Library 3.13.1	Copyright (c) Microsoft Corporation. All rights reserved. Licensed under the MIT License (the "License"); Open Source Initiative OSI - The MIT License (MIT) 2012
AngleSharpCss 0.16.1	MIT N/A
ASP.NET Ajax 4.0	Microsoft Permissive License (Ms-PL) N/A
Azure.Core 1.24.0.0	MIT Template 2020
Azure.Identity 1.4.1	MIT Template 2020
Azure.Identity 1.6.0	MIT Template 2020
Bootstrap 3.2	MIT N/A
BouncyCastle 1.8.9	MIT N/A
ComponentArt Web.UI for ASP.NET 2011.1.1134.35	Component Art Web.UI Suite Enterprise License N/A
HtmlSanitizer 6.0.4	MIT Template 2020
jquery 3.4.1	Copyright JS Foundation and other contributors, https://js.foundation/ MIT N/A
JQuery UI 1.12.1	Copyright 2007, 2014 jQuery Foundation and other contributors, https://jquery.org/ MIT N/A
MediatR 9.0.0	Copyright Jimmy Bogard Apache 2.0
MediatR.Extensions.Microsoft.DependencyInjection 9.0.0	Copyright Jimmy Bogard Apache 2.0
Microsoft AspNet WebApi 5.0.0	Microsoft .Net Framework 4.5
Microsoft Exchange Web Services (EWS) Managed API 2.2	Microsoft Exchange Web Services Managed API 2.2

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Microsoft Unity 3.5	Apache 2.0
Microsoft.aspNet.SignalR.Core 2.3.0	MICROSOFT .NET LIBRARY 1.0
Microsoft.Extensions.Http.Polly 6.0.3	Copyright (c) .NET Foundation and Contributors MIT Template 2020
Microsoft.Graph 4.25.0	MIT N/A
Microsoft.Identity.Client 4.36.2	MIT N/A
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Microsoft.IdentityModel.Logging 5.2.2	Copyright (c) Microsoft Corporation. All rights reserved. MIT N/A
Microsoft.IdentityModel.Tokens 5.2.2	MIT N/A
Microsoft.SharePointOnline.CSOM 16.1.21610.12000	MS-.NET-Library-JS License N/A
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Newtonsoft.Json.dll 11.0.1.21818	Copyright (c) 2007 James Newton-King The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. MIT Json.NET N/A
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Polly 7.2.3	Copyright (c) 2015-2020, App vNext All rights reserved. BSD 3-Clause for App vNext 1.0

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