



## Creating an Unattended Installation with aspenONE V12

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# 1 Introduction

## About this Document

The *Creating an Unattended Installation with aspenONE V12* guide details the processes applicable to creating a silent or unattended install package with Aspen Technology applications, along with deploying the install to multiple machines, using mechanisms such as batch files, or Microsoft's System Center Configuration Manager, SCCM. This document will address Windows 10 64-bit platforms.

This document:

- Provides instructions at a high level assuming the target audience will have the prerequisite knowledge mentioned in this document.
- Eliminates a large part of the trial and error involved in packaging an Aspen Technology product for distribution.
- Describes the creation of silent installation source files using Aspen Technology unattended deployment tools and the best practices for deploying these applications.

### Notes:

- This guide describes one of many ways to deploy the applications.
- Aspen Technology is not responsible for support of packaging or deployment of third-party software.
- Due to differing corporate regulations and policies, we cannot provide an instruction set that will apply to all deployment scenarios.
- Individual unattended product uninstallation is not supported.

For supported best practices regarding the silent installation and SCCM packaging of these redistributable components, please consult the Microsoft documentation.

## Creating an Unattended Install

AspenTech provides a way to automatically deploy AspenTech software to multiple computers to ensure a consistent configuration of the software on all target computers. The aspenONE Installer provides a means to record user inputs using the built-in record option, storing all inputs in an .xml file. The

output of this recording can then be used to perform an unattended install using the **atrununattended.exe** tool.

The **Prepare Deployments** workflow in the installer allows you to specify install options as well as the location of the response file. The generated response file encrypts user-entered passwords and provides an easy means to overwrite any directory locations, and other configuration settings customizable at install time.

The **unattended install tool (atrununattended.exe)** supports additional deployment options to make mass deployment easier for the end user. Refer to the **support site** to see all the options that can be used with the unattended install tool

**Notes:**

- Identical machine configurations must be used for recording the responses for unattended installs. For example, you can't record options to install on a Windows 10 system and then use the unattended install on Windows 7 systems.
- aspenONE family-based product installs can be recorded. Stand-alone Administration tools (such as SLM Tools and SLM Server) cannot be recorded. SLM Tools, if necessary, can be silently installed using one of the command lines below:

```
msiexec /qb /i "SLM Tools.msi" ADDLOCAL=ALL INSTALLLEVEL=100  
msiexec /qb /i "SLM Tools(64-bit).msi" ADDLOCAL=ALL INSTALLLEVEL=100
```

Please note that the 64-bit version of SLM Tools can only be used by the 64-bit version of the software. 32-bit software versions use the 32-bit version of SLM Tools while running on a 64-bit computer.

# 2 Aspen Technology Products Unattended Deployment

## Creating an AspenTech Unattended Installation Package

This document will go over creating an unattended installation package for the **V12 Typical Engineering Bundle** on a Windows 10 machine. These same steps can be applied to additional AspenTech supported applications.

Following the steps provided in this document will result with performing the following:

- Creating an AspenTech Unattended Install Package
- Running an AspenTech Unattended Install
- Unattended Installation of AspenTech Cumulative Patches

### Prerequisites

The AspenTech Unattended Deployment Installation does not check whether prerequisites are installed on the client machines prior to installation. It is up to the customer to work with their IT department to ensure that all prerequisites are installed on the client machines prior to the Aspen Software being deployed.

If you would like to view the list of prerequisites ahead of time, visit the [\*\*Prerequisite Viewer\*\*](#) web page.

The aspenONE Installer will also notify you if any prerequisites are missing on the machine performing the Aspen Silent Installation recording.

# Aspen Technology Prepare Deployment Workflow

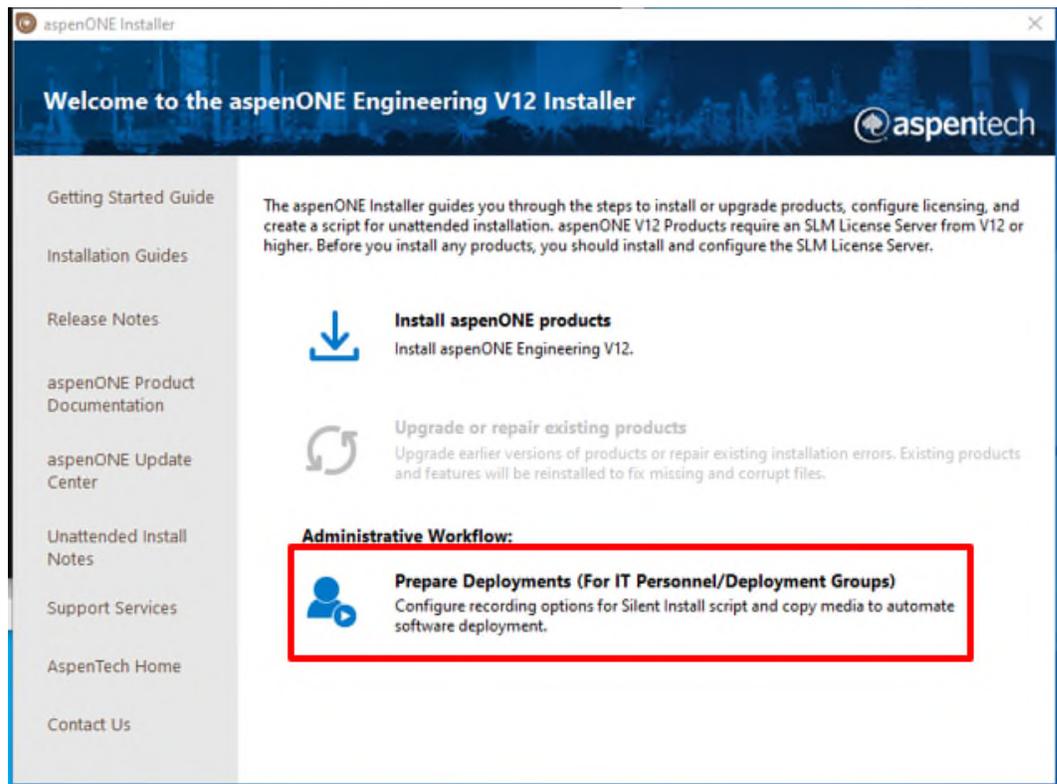
Insert the AspenTech USB or browse to a media location on the network share on a Windows 10 machine with a similar set up to the ones to which you will be deploying the software.

Double-click **Setup.exe** to launch the aspenONE Installer.

Select the suite of products you wish to install and click **Begin Install**.

You can also check **Use Custom Install** if you would like to select a subset of products.

On the Installer Welcome Screen, select Prepare Deployments.



Create a directory that will be used for your package of AspenTech unattended installation files.

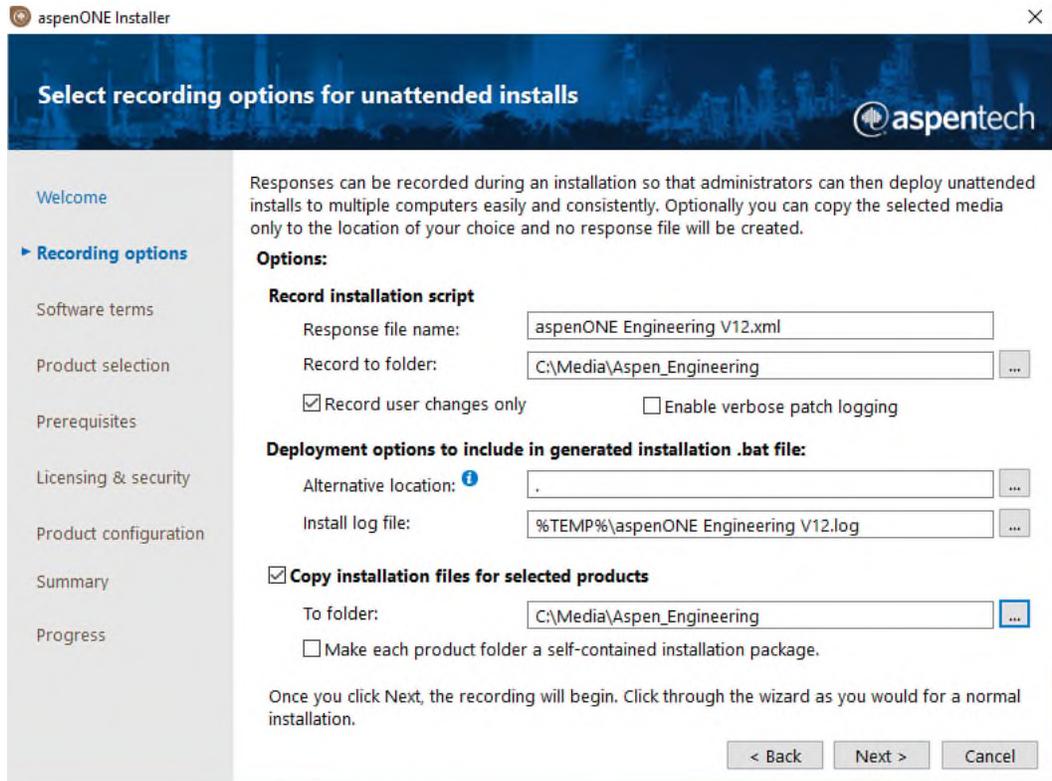
In the **Record installation script** section, specify the following information.

- o **Response file name:** Select a file name of your choice. You can leave the default name or enter a more descriptive name.
- o **Record to folder:** Specify or browse to the directory that you created to store these installation files.
- o **Record user changes only:** This option is selected by default and records any changes you make from the default installation values. This results in the silent installation .xml file being shorter and more manageable.

- o **Enable verbose patch logging:** By default, it is not checked. If enabled, when patches are installed using this silent install package, there will be additional logging during patch installs. This may increase installation time but may make it easier to debug installation issues if needed.
- o **Deployment options to include in generated .bat file:** A sample .bat file will be created as part of the Unattended Deployment package. By default, the recorded .xml file will reference the current location for the installation files, if the final location for the Unattended Installation package will be a different location, you may specify an alternative location for the installation files to be located.

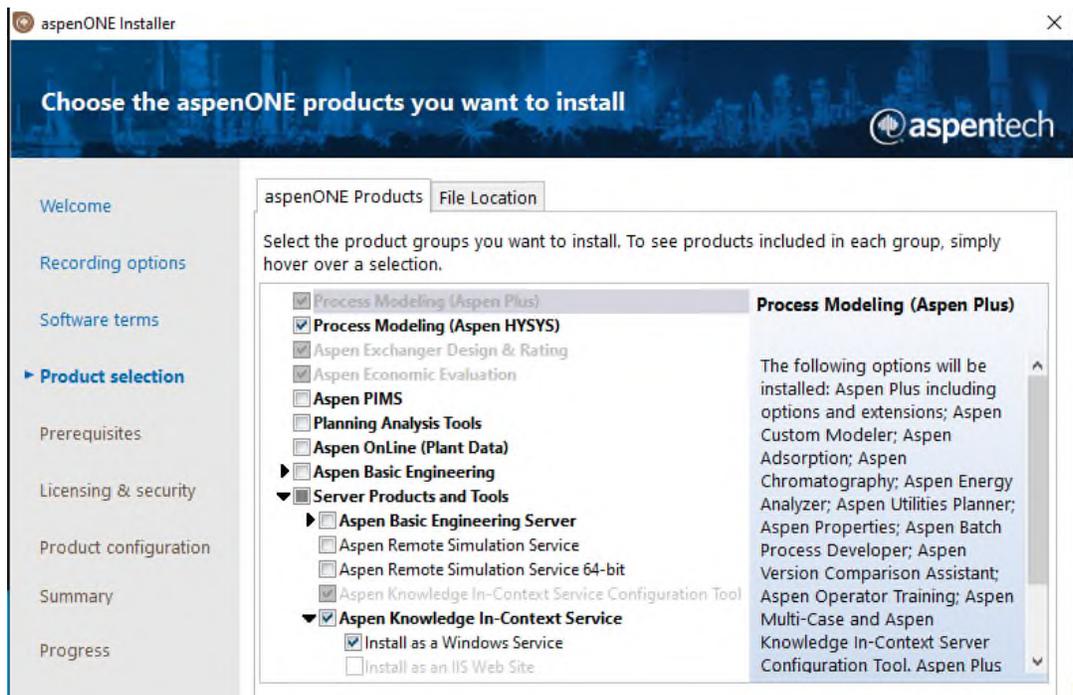
**Notes:**

- It is recommended to leave the *Alternative Location*, as ".", especially if creating a standalone Unattended Install package.
  - Specifying "." as the location will tell the AtRunUnattended.exe to look for the installation files under the same directory as the AtRunUnattended.exe.
- o **Install log file:** Creates a log file on the client machine to which the application is being installed. This is used to troubleshoot product installation.
  - o Select the **Copy installation files for selected products** check box. This will copy the necessary installation files from the AspenTech media to the directory of your silent installation package. This will keep the packages distributed across your infrastructure as lean as possible.
  - o By default, the **Make each product folder a self-contained installation package** is unchecked. It is recommended that you leave this unchecked, as it will create a leaner installation package and only one Core installation folder will be created for the entire package versus a separate folder under each product.
    - o If you would like the ability to mix and match subsets of products, you can check the box, and a core folder is created under each product folder in the aspenonesuite directory instead. This option gives you more flexibility in creating your silent install packages, but may also result in a larger package being created due to some duplicate files being delivered under each core folder.

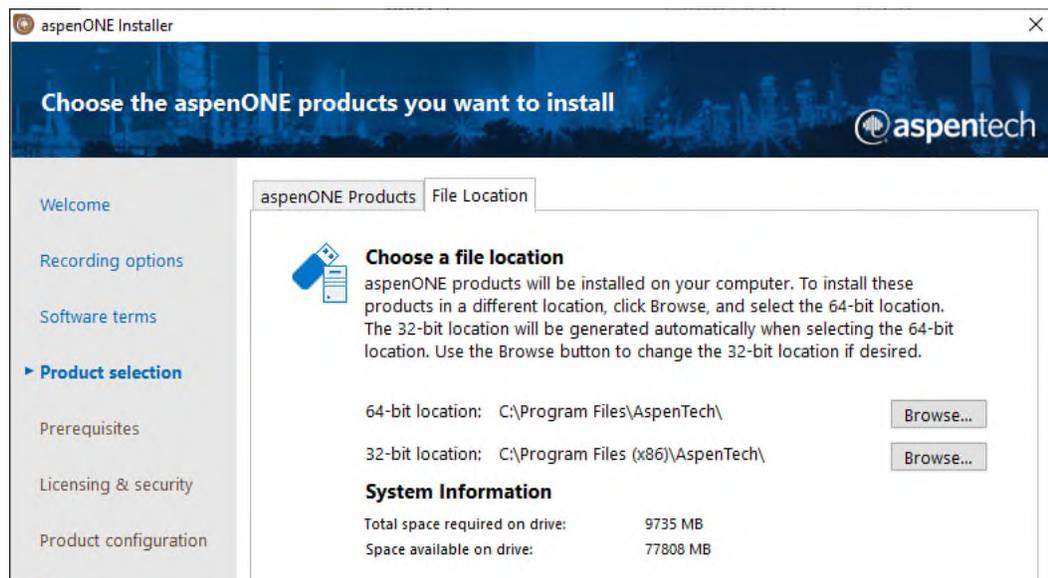


Select **Next**, and then Accept the Licensing Terms.

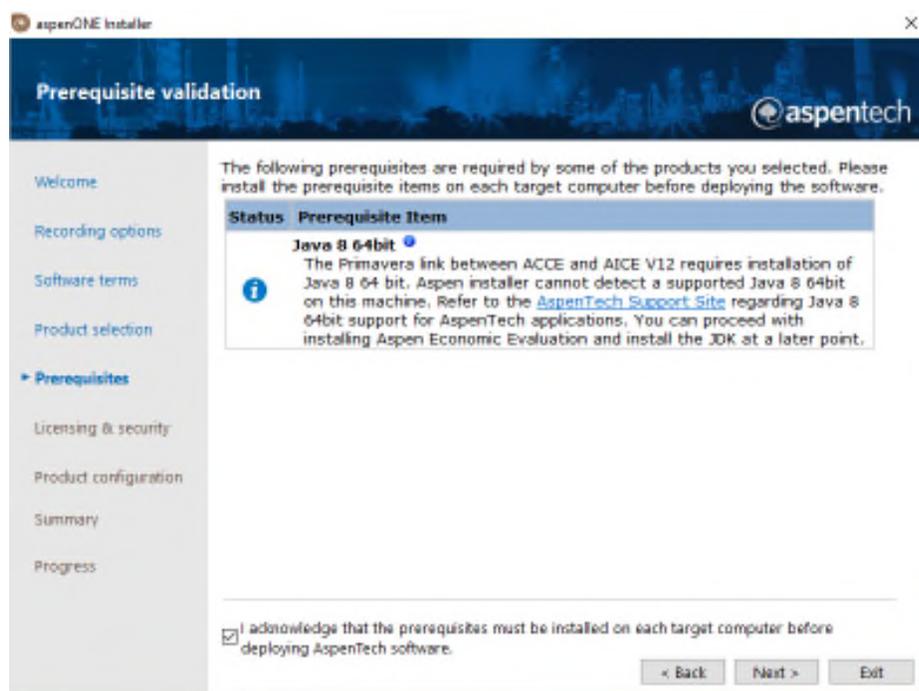
In the **Product Selection** section, select the products you would like in the install kit.



**(Optional)** Select the **File Location** tab to install the AspenTech products in your desired location.

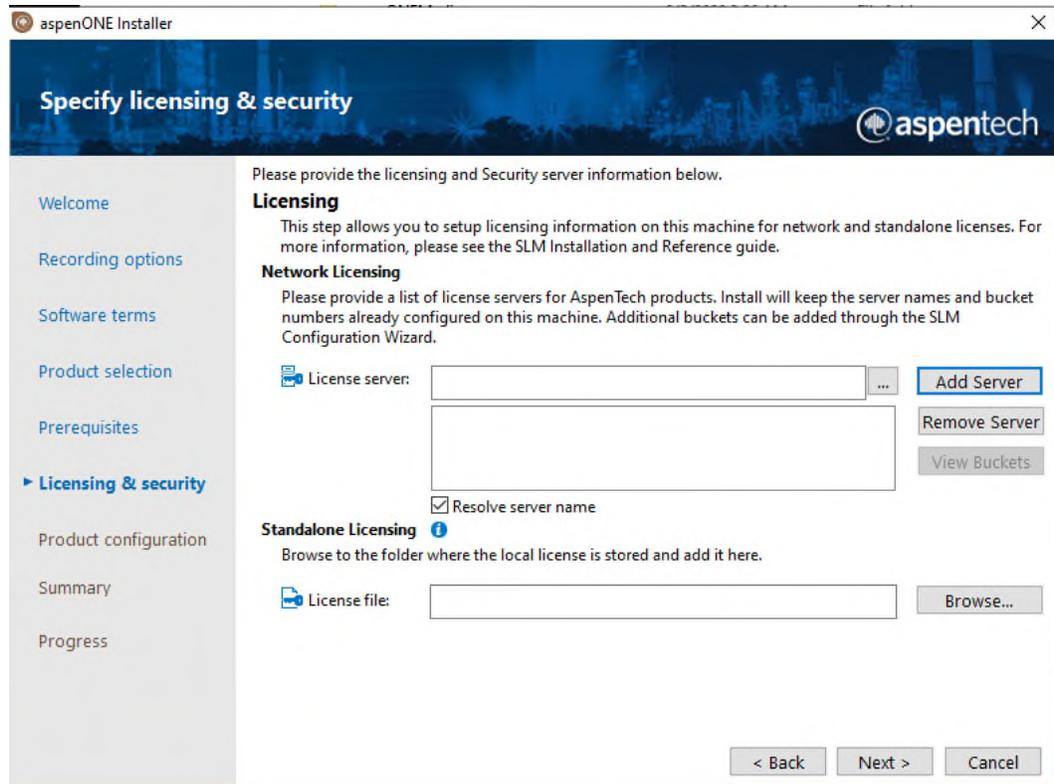


You will be prompted if there are any missing prerequisites found on the machine performing the silent install recording. Note the missing required prerequisites, and make sure all prerequisite software is deployed to all target client machines prior to deploying the AspenTech software.



Check the box agreeing you acknowledge that all the prerequisites must be installed on each target computer to continue.

Click **Next** and enter the information for your AspenTech License Server or a standalone license.



Review your installation settings before recording the .xml file, and then select **Record Now** to create the configuration files and copy the necessary media to the proper location.

Once the recording is complete, go to the directory you had created earlier to view the silent installation files:

Aspen_Engineering			Search Aspen_Engineering
Name	Type	Size	
aspenonesuite	File folder		
Patches	File folder		
aspen batch process developer v12.mst	MST File	20 KB	
aspen energy analyzer v12 (64bit).mst	MST File	20 KB	
aspen flare system analyzer v12 (64bit).mst	MST File	20 KB	
aspen knowledge in-context (64bit).mst	MST File	20 KB	
aspen multi-case v12 (64bit).mst	MST File	20 KB	
aspen online v12 (64bit).mst	MST File	20 KB	
aspen operator training v12 (64bit).mst	MST File	20 KB	
aspen properties v12 (64bit).mst	MST File	20 KB	
aspen simulation workbook v12 (64bit).mst	MST File	20 KB	
aspen simulation workbook v12.mst	MST File	20 KB	
aspen utilities planner v12 (64bit).mst	MST File	20 KB	
aspen version comparison assistant v12 (64bit).mst	MST File	20 KB	
aspenone common components for upgrade.mst	MST File	20 KB	
aspenone common components v12 for coexist.mst	MST File	20 KB	
aspenONE Engineering V12.bat	Windows Batch File	1 KB	
aspenONE Engineering V12.xml	XML Document	27 KB	
AtRunUnattended.exe	Application	3,532 KB	
economic evaluation v12 (64bit).mst	MST File	20 KB	
exchanger design and rating v12 (64bit).mst	MST File	20 KB	
process modeling (aspen plus) v12 (64bit).mst	MST File	20 KB	
process modeling (hysys) v12 (64bit).mst	MST File	20 KB	

- Depending on the products selected during the recording process, there will be a .MST file for each product.
- The .xml file is the response configuration file for the silent installation and was specified during the recording step of the AspenTech Prepare Deployment tool.
- The .bat file is an example batch file that can be used for silent deployment using the AtRunUnattended.exe.
- The aspenonesuite directory contains the .MSI and all other necessary installation files for each AspenTech product installation. Within this folder, there will be a directory for each .MST file listed above.

**Note:** This directory should also contain one Core folder, which contains all needed 3rd party, and shared component files. If the checkbox, "Make each product folder a self-contained installation package", was checked during the recording process, there will be a Core folder under each product installation folder instead.

- The Patches directory contains any cumulative patches that already exist on the media, as well as the aspenONE Update Agent.exe. Any applicable patches in this folder will be automatically applied to machines after the installation of the products.
- ATRunUnattended.exe is the executable that will be using for the silent installation. Run ATRunUnattended.exe /? in the command line or view the .bat file in a text editor to see what command line switches are available.

## Optional Editing of the Response Files

The generated .xml response file can be opened in a text editor such as Notepad, and modified, if necessary, by changing directory paths, etc. Values should be enclosed in double quotes, though quotes may be omitted if the property value includes no empty spaces. You can edit the .mst file as well using an MST file editor. While the property values, etc., may be modified, the content should conform to the Windows Installer property definition convention of name value pairs.

During the recording process, you may notice that file paths listed in the recording XML file may not match how you intend to distribute the package.

Rather than updating all the paths in the XML file, it is recommended that you use the **altsource** flag when running the AtRunUnattended.exe. If the installer is unable to locate the paths mentioned in the XML file, it will use the alternative location provided. If you used the **Copy installation files for selected products** to create the install package, set **altsource = "."**. This instructs the executable to look under the same directory as the AtRunUnattended.exe.

See the **Executing Unattended Installs** section below for more information regarding the ATRunUnattended.exe.

## Download Patches using aspenONE Update Agent: Unattended Deployments

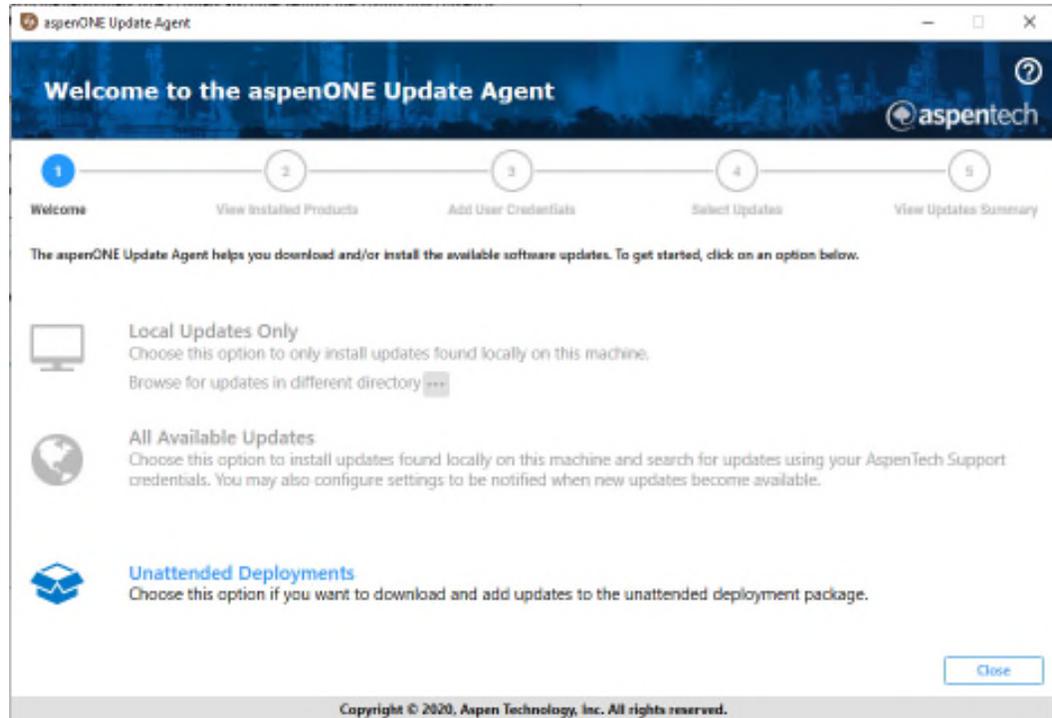
To make sure the latest AspenTech cumulative patches for the products are included as part of the unattended install, navigate to the **Patches** folder in the recently created Unattended Install package. This folder should contain an **aspenONE Update Agent.exe** and a **DeploymentProductCodes.lst**.

- The aspenONE Update Agent.exe is used to install any applicable patches located in that folder. It can also be launched to search for the latest patches available from the aspenONE Update Center.
- The DeploymentProductCodes.lst is a list that was generated during the Prepare Deployments install script, recording process. It lists the products that were selected in the recording process and is used by the aspenONE Update Center to determine the latest patches that are available for those products.

**Note:** It is recommended that you keep a copy of the DeploymentProductCodes.lst file somewhere as it can continue to be used to search and download more applicable patches in the future for your package.

Name	Date modified	Type
aspensONE Update Agent.exe	5/8/2020 11:04 AM	Application
DeploymentProductCodes.lst	6/8/2020 2:52 PM	LST File

Launch the aspenONE Update Agent.exe. Select Unattended Deployments. This option is only available when the DeploymentProductCodes.lst file is in the same directory as the Update Agent.



Enter your AspenTech Support Credentials, and enter Test Connection, followed by Next. The Update Agent will use your credentials to search for any applicable patches.

If any patches are available, select the Download Only button to download the files.

Once the download is complete, another Patches folder, containing all the patches, will be created in the same directory as the aspenONE Update Agent.exe.

Now the unattended deployment package is complete. The directory and all its contents can now be copied to any location used for deploying applications.

# Running an AspenTech Unattended Install

This section of the document will go over installing an AspenTech Unattended Install package using the **AtRunUnattended.exe** tool.

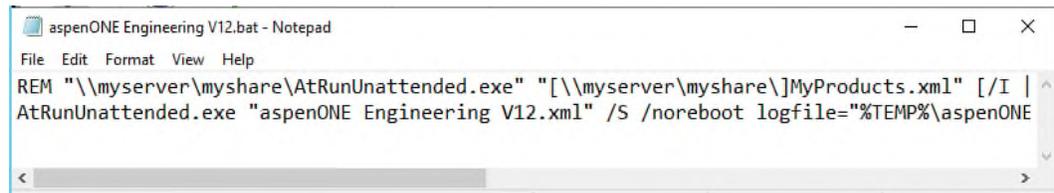
## AtRunUnattended.exe

The following options are set by default for the atrununattended.exe:

- Reboot, if necessary
- Show Progress Indicator
- Generate MIF
- Enable Verbose Logging
- Put Log file in %TEMP%
- Alternate media location

**Note:** Run `AtRunUnattended.exe /?` to get a listing of all the supported command line switches of this tool.

The **.bat** file created as part of the Prepare Deployment workflow provides one example on how to run an unattended install of the AspenTech products.



```
aspenONE Engineering V12.bat - Notepad
File Edit Format View Help
REM "\\myserver\myshare\AtRunUnattended.exe" "[\myserver\myshare\]MyProducts.xml" [/I |
AtRunUnattended.exe "aspenONE Engineering V12.xml" /S /noreboot logfile="%TEMP%\aspenONE
```

Otherwise a typical command to deploy an AspenTech Unattended Installation package is the following:

➤ **AtRunUnattended.exe "aspenONE Engineering V12.xml" altsource="." /L logfile="%TEMP%\Aspen Engineering V12.log" /noreboot**

- This assumes that the current directory where the command is run, contains the `AtRunUnattended.exe`. Otherwise specify the full path to the executable.
  - This command can be run from a batch file, script or another similar deployment mechanism.
- Replace **aspenONE Engineering V12.xml** with the name of the recording XML used in your package. Include the full path to the XML file if the file is in a different directory than the `AtRunUnattended.exe`.
- **altsource**: Specifies the location the `AtRunUnattended.exe` should use for getting the media files. Specifying it as `."`, tells the program to use the location in its local folder – in this case, the installation package that was created.
- **/L**: Enables verbose logging. This flag will produce detailed MSI logs for each product installation to help with troubleshooting. A custom file

location and name can be specified using `/L logfile = [path\name.log]`. For more information, see the "**Logging**" section for the system specific log location.

- **Note:** This option increases the installation time by a factor of at least two.
- **/noreboot:** Suppresses rebooting. See the **Reboots** section for more information.

For the case with **SCCM deployment**, one method to create a SCCM deployment package is to create a new application with a deployment type of *Script Installer*. Specify the command used above, and set the *Content location* to be the unattended install package. The *Detection Method* should be set to Windows Installer, and can point to each product MSI file found under the aspenonesuite folder.

Individual unattended product uninstallation is not supported.

- To silently uninstall all AspenTech products from a system, run **AtRunUnattended.exe/removeall**.

**Caution:** This will uninstall all versions of all AspenTech products from your system.

## Unattended Install of AspenTech Cumulative Patches

This section of the guide will describe how to silently apply AspenTech cumulative patches to machines with AspenTech products already installed. This can be done using a batch file, script, or with deployment applications like SCCM.

See the above section for how to create silent deployment packages that installs both the full release products and latest patches.

You can refer to the aspenONE Update Agent help for more information regarding how to download patches.

Here are 3 recommended ways to download relevant cumulative patches:

- The **All Available Updates** option in the aspenONE Update Agent.exe.
  - In this case, the Update Agent must be run on a machine with the AspenTech products already installed.
- The **Unattended Deployments** option in the aspenONE Update Agent.exe.
  - This Unattended Deployments option will only be available if there is a **DeploymentProductCodes.lst** file present in the same directory as the Update Agent.
  - No AspenTech products need to be installed on the machine to download the patches.
  - The **DeploymentProductCodes.lst** file is generated during the Aspen Technology Prepare Deployment Workflow and can be reused in the future to search for and download all the latest relevant patches.

- Manually from the AspenTech Support Site – Download Center.

**Note:**

When the Update Agent is used to install patches, it will search for all local patches found in the same directory as the exe, as well as any subdirectories.

Any patches already installed on the machine will not appear under the list of found patches, nor will they be reinstalled.

Once all relevant patches have been downloaded and are either in the same directory or in a subdirectory of the aspenONE Update Agent.exe, you can use the following command run as Administrator to run a silent install of the patches:

- **"aspenONE Update Agent.exe" -S**

Where -S = silent installation.

Or with verbose logging enabled:

- **"aspenONE Update Agent.exe" -S -VL**

The aspenONE Update Agent installs only the patches in its local directory which it detects to be applicable to the client system. The application run in silent mode will not download newer patches available like the All Available Updates option when run interactively.

Starting with V12, cumulative patches no longer have verbose logging enabled by default. This is to reduce install time, however for troubleshooting installation issues, one can enable it.

Log files will be created the %TEMP% folder location. There will be an **aspenONE Update Agent <datetime>.log** generated on each machine as well, specifying what patches have been found and applied.

After the patches have been applied, some machines may need to be rebooted for the changes to take effect. See the Addition Information section for more information.

# 3 Additional Information

## Reboots

The Unattended Installation of AspenTech software and patches are set to initiate a soft reboot only. AspenTech is under the assumption that the packages may be deployed when the end user is actively logged into the client system and suggest that a reboot is not forced by the system even if necessary. Depending on corporate policies, rebooting of user systems by SCCM may be handled differently, especially if the deployment is scheduled to take place when the user will not be at the machine.

**For AspenTech software to be properly installed, a user with administrative rights must also log into the machine after the reboot.**

This is to ensure that any pending dll registrations and configurations are executed after the system has been restarted. Pending actions can vary across machines and can be found under the RunOnce keys in the registry.

### Notes:

- The /noreboot flag for the Aspen Technology silent installation tool, **ATRunUnattended.exe**, flips the /REALLYSUPPRESS switch on MSIEXEC.exe. If the installation exits with a reboot required, it will issue the 3010 return code upon completion.
- In the default settings of an SCCM Deployment Type, 3010 is mapped to a **soft reboot** and will be triggered by the SCCM system.

## Pre-staging

When deploying Aspen Technology products in locations a great distance (or over a slow link) such as from the SCCM Primary site or network share, it is useful to pre-stage content on the remote distribution points. When pushing content over a great distance, issues with failed deployments and difficulty syncing content updates across all DPs have occurred.

## Cache Size

If using SCCM for deployment, ensure that the client caches on machines that Aspen Technology applications deploys to, are sufficiently large enough to

support deployment of large products. The **typical Aspen Engineering installation application** is about **6.9 GB** in size.

**Note:** If SCCM is used heavily for application deployment within your enterprise, with the potential for multiple applications to be cached on a client system simultaneously, it may be necessary to adjust this value upwards from 10 GB as deemed appropriate.

## Stream vs. Download Content Locally

If Aspen Technology products are being deployed to laptop systems, we recommend that the content be downloaded locally and then installed to lower the risk of failed installation because of the large size of the applications. When the application is set to download locally, after the files are downloaded to the local machine, the application will become available. This removes any networking issues that may negatively impact the installation.

## SQL Server

On supported Windows client machines, applicable Aspen Technology products will install a version of SQL, **localDB**, on the client system, which will be used to store AspenTech application data. Windows Server platforms are not compatible with **localDB**, and these systems require **SQL Server** be installed.

AspenTech products support **SQL Server 2012** or newer databases, including Express. An installer for **SQL Server Express 2014 SP2** is distributed with the Aspen Technology V12 media and can be found in the **3<sup>rd</sup> Party Redistributables** folder.

If only one database instance is installed on the machine, the AspenTech installer will automatically detect and use that instance. However, if there are multiple instances, the appropriate instance must be specified within the .XML file, or the database must be manually restored on the client system before AspenTech products will work.

## Logging

To help diagnose a failed Aspen Technology product installation, there are two different types of log files created on the client system if the **/L** flag is used with **ATRunUnattended.exe** in the deployment.

The first, and generally most useful with SCCM, is the silent installation log. This file will be named **ATRunUnattended [date and time].log**; it contains the calls to **msiexec.exe** being made by the Aspen Technology silent

installation tool. This log file will be generated every time the ATRunUnattended.exe tool is run, whether or not the /L parameter is used.

Second are the individual product installation logs--one log file for each product installed. These verbose log files contain every command executed by MSIExec.exe during the installation.

#### **Example: Process Modeling (Aspen Plus) V11.log.**

SCCM runs the installation under a System account and creates the log files in the following location:

**C:\Windows\Temp**

Starting with V12, cumulative patch installations have verbose logging disabled by default. To enable verbose logging, add the **-VL** flag when calling the **aspenONE Update Agent.exe**.

## Repairs

It is a known issue that if an AspenTech installation must be repaired on a client machine, and the original installation was performed using an unattended install package, utilizing the **Upgrade or repair existing products** option found on the AspenTech installation media, may result in a *"Please insert the disk: 1"* error. Thus, it is recommended that you repair the specific product by using the **Repair** option found under the Windows **Programs and Features**, or by uninstalling the AspenTech product, and then reinstalling the software.