aspenONE Engineering Cloud V12 using Windows Virtual Desktop

Installation & Configuration Notes

Version: V12
October 2020

Aspen Technology, Inc.
20 Crosby Drive
Bedford, MA 01730
USA
Phone: (781) 221-6400
Toll Free: (888) 996-7100
URL: http://www.aspentech.com

Contents

1 Introduction

Purpose

This document describes the recommended AspenTech architecture, deployment and configuration of the aspenONE Engineering Suite V12 on Microsoft Windows Virtual Desktop. The list of supported applications can be found in the table of Published Applications available in the appendix.

Related Documentation

The Windows Virtual Desktop Documentation provides overview and configuration steps for deploying Windows Virtual Desktop.

Microsoft provides guidance on how to Extend Active Directory with VPN or Express Route connection to Azure. This helps in setting up the Aspen Products so that they can use your on-site SLM Server or other enterprise applications. It also simplifies file transfer for simulation files that are stored locally.

Technical Support

The most up-to-date contact information for your nearest support office is available on AspenTech's web page at https://support.aspentech.com/.

Please contact your local Technical Support office to provide feedback. Also contact Technical Support if you have a query about the software itself.

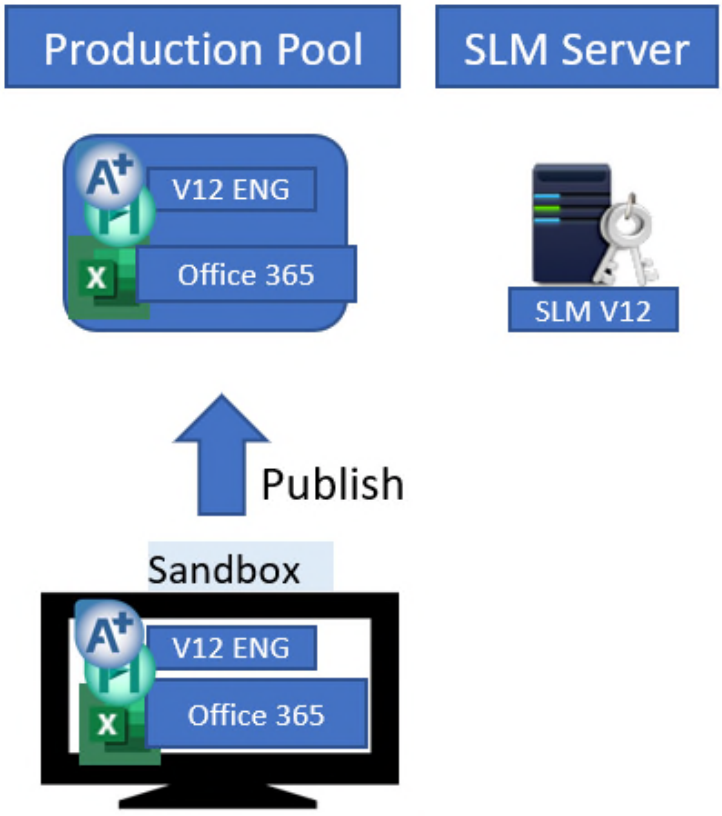
Azure has multiple support options to meet your needs, whether you are getting started or already deploying business-critical workloads on Azure at https://azure.microsoft.com/en-us/support/options/.

2 Deployment

Windows Virtual Desktop (WVD) enables a virtual desktop experience and remote applications on any device. WVD brings together Microsoft 365 and Azure to provide users with a multi-session Windows 10 experience—with exceptional scale and reduced IT costs.

Reference Architecture

The following diagram illustrates the reference architecture for aspenONE Engineering V12 on WVD:



1. **Sandbox and Production Pool**
    1. **Azure instance:**
        1. E2 v3 (2 vCPU, 16 GB)
        2. Windows Enterprise 10 Enterprise multi-session, Version 1909
    2. **AspenTech software**
        1. aspenONE Engineering suite V12 (see **supported Engineering applications** in the appendix)
    3. **3rd Party software**
        1. Microsoft Excel (Office 365)
        2. SQL Server 2012 Express SP2 (included in ENG media)
    4. **Storage**
        1. Public (10GB) and private (2GB) storage space to allow access to public test files and permanent storage of test files
2. **SLM Server**
    1. **Azure instance:**
        1. A2 v2 (2 cCPU, 4 GB)
    2. **AspenTech software**
        1. Aspen SLM License Manager Server V12
    3. **3rd Party software**
        1. None

Deployment Overview

To Deploy aspenONE Engineering on WVD:

1 Prepare your Azure Resource Group and create VMs.
2 Configure the SLM server VM.
3 Install SLM V12 on the SLM Server VM.
4 Install the license key on the SLM server VM.
5 Install SQL Server on the SLM & SQL server VM.
6 Set Up the Pre-Requisites for the Engineering Suite on the Sandbox.
7 Install the aspenONE Engineering Suite on the Sandbox.
8 Generalize the Windows VM using Sysprep.
9 Create a managed image in the portal.
10 Complete the Windows Virtual Desktop Setup.

Prerequisites

The prerequisites to deploying the aspenONE Engineering Suite V12 on WVD are listed below:

- An AspenTech Customer Support Account.
- An Azure Active Directory.
- A Windows Server Active Directory in sync with Azure Active Directory. You can configure this with one of the following:

    - Azure AD Connect (for hybrid organizations).
    - Azure AD Domain Services (for hybrid or cloud organizations).
- An Azure subscription that contains a virtual network that either contains or is connected to the Windows Server Active Directory.
- Office 365 installation for Azure.
- Adobe Acrobat Reader for Azure.
- An Azure Virtual Network (VNET) connected with on-premises corporate network via VPN with an SLM server running in the corporate network.

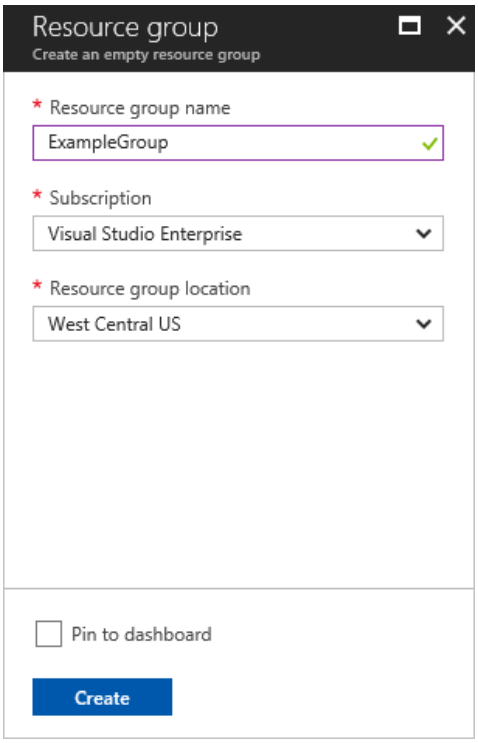
  Alternatively, you must provide access to an SLM Server in the Azure network.

Instructions

Once you have the pre-requisites, the following instructions will step you through installing the Engineering Suite on Azure and publishing to a WVD pool.

Prepare your Azure Resource Group and create VMs:

1. Navigate to the Azure Portal. Login to your Subscriptions.
2. Follow the instructions to Create a Resource Group. Only follow instructions through the completion of the resource group. Make note of the name of the Resource Group you create as you will need this information later.



3. Create a Virtual Machine (VM) for the sandbox and for the SLM server (see reference architecture above for recommended VM type). The SLM server VM must be configured with a static IP address. The sandbox VM is a

template for the production pool VMs running the Engineering Suite. The OS for the sandbox VM should be Windows Enterprise 10 Enterprise multi-session, Version 1909. When specifying the Disks used for the template, make sure to specify the OS Disk Type as "Premium SSD" and use managed disks.

4 Download the target aspenONE media to the Template VM created in Step 3 from the download center. See AspenTech Download Center FAQs.

Configure the SLM server VM

1 Log into the SLM & SQL server VM and get the IPv4 address. This information will be needed later to configure the aspenONE Engineering SLM client.

2 Open the Firewall Settings, and click on *Allow an app or feature through Windows Firewall*.

3 Disable the *File and Printer Sharing* feature.

Install SLM V12 on the SLM Server VM

The SLM server VM runs the software license manager 24/7.

To install the license manager (SLM):

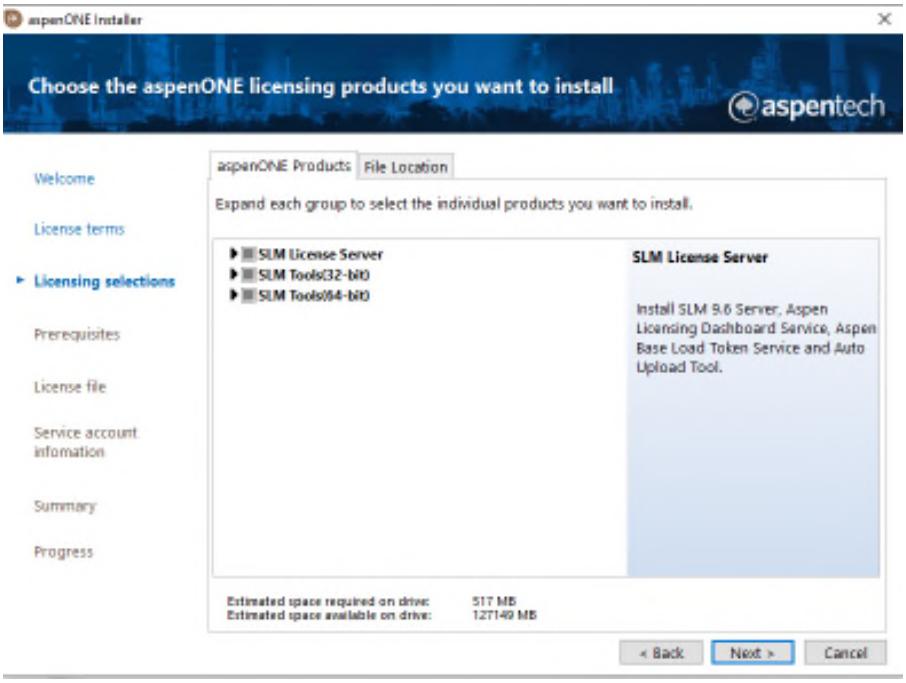
1 Upload the V12 media to the SLM server VM.

2 In the V12 aspenONE media, double-click on Setup.exe to start the installation process.

3 In the Install Browser, select **Install Now**.

4 Read and confirm acceptance of the licensing agreement. Click **Next**.

5 Keep default selected products. Click **Next**.



6 In the **Specify License File** window, do not select a license file and click **Next**.

7 Provide an Administrator's group user account and click **Next.**

8 Check the contents of the **Verify your installation** window, (right). Click **Install Now** to install the SLM selections.

9 Click **Finish** when the install is complete. Reboot the SLM server VM when prompted.

Install license key on the SLM server

You will need AspenTech to generate a new license key locked to the SLM server VM. You can request license keys from the AspenTech support site at: https://esupport.aspentech.com/S_LicenseRequest. AspenTech will need locking information from your SLM server VM to generate the license key. To obtain the locking information:

1 Log in to the SLM server VM.

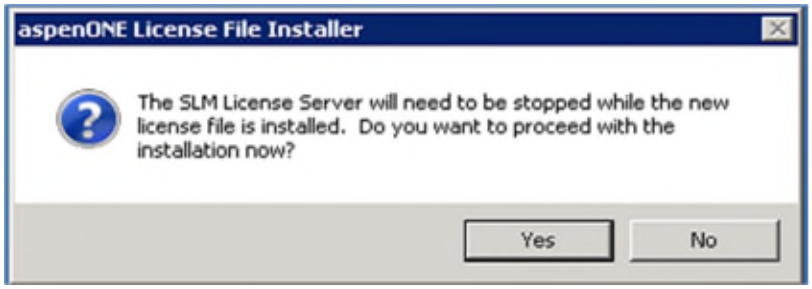
2 Start the aspenONE License Manager and click **Locking Info**. The **SLM Locking & Configuration Information** view appears, showing your configuration information. Click **Copy to Clipboard**, and then paste that information from the clipboard to a Notepad or other blank document.

3 Send the information to AspenTech.

4 When AspenTech sends the license file, to install the license key:

   a. Upload the license file to the SLM server VM and double click to install.

   b. Click **Yes** when prompted to install.



Set Up the Pre-Requisites for the Engineering Suite on the Sandbox

Note: Refer to the platform support for this version of software: https://www.aspentech.com/en/platform-support

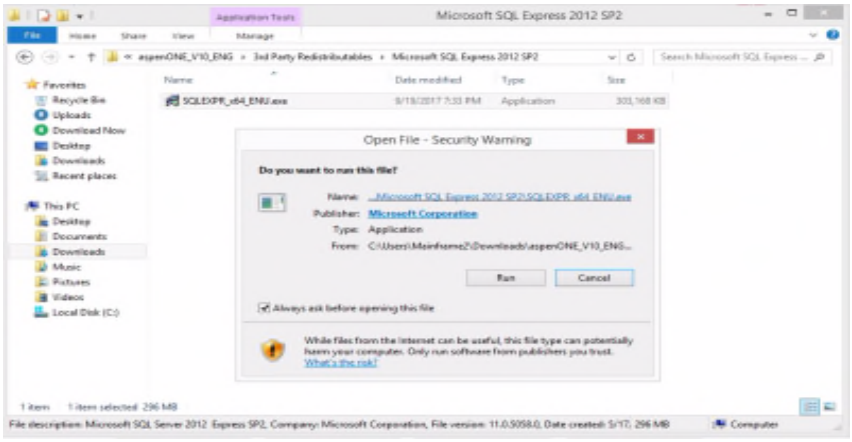
1 Log into the Sandbox VM.

2 Install and Activate MS Office.

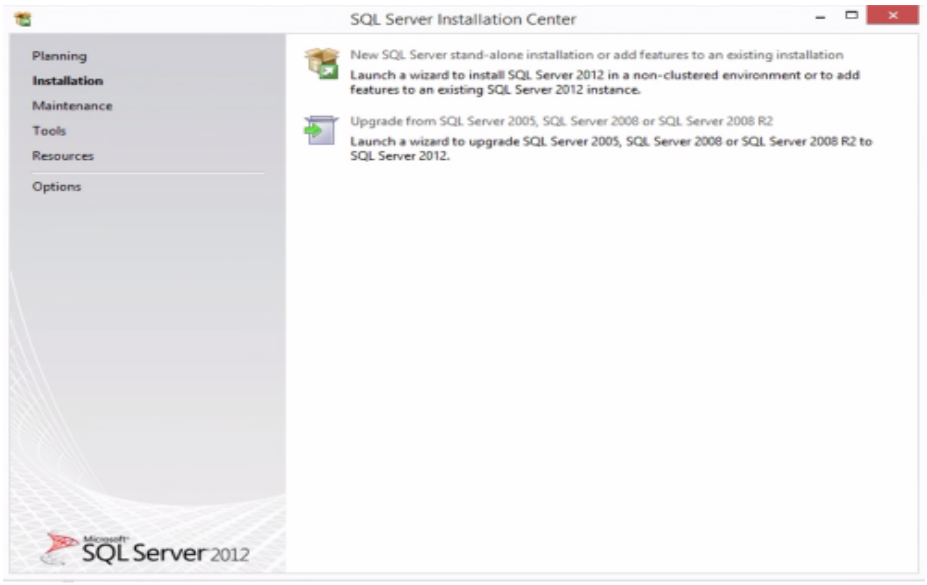
3 Enable the supported version of Windows feature .NET Frame Work.

4 Install a supported version of SQL Server Express.

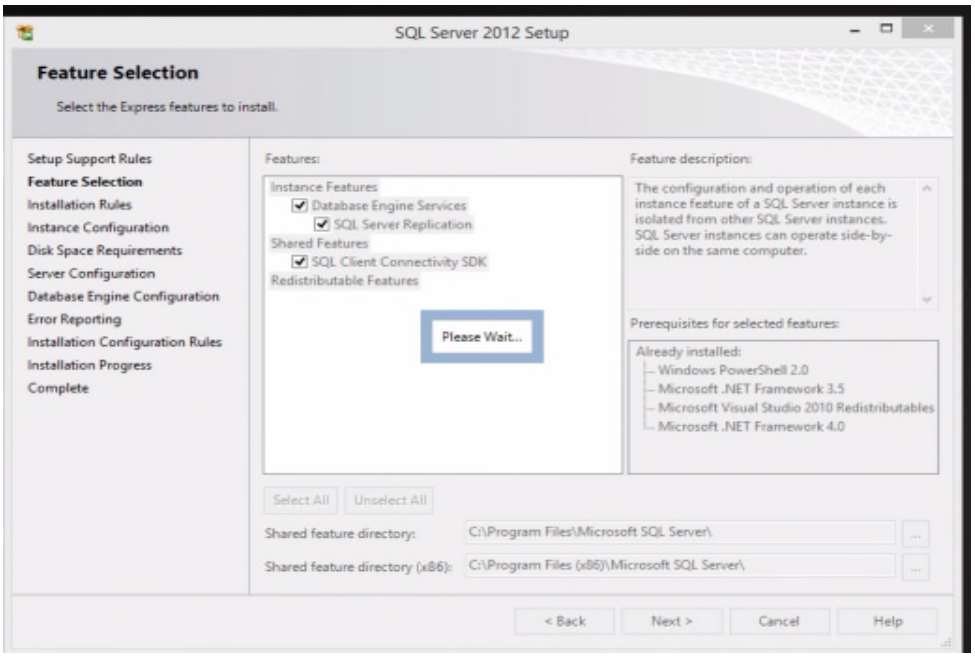
a. Double-click to open the aspenONE Engineering Suite V12 media iso file
b. In the 3rd party Redistributables folder, run the SQLEXPR_x64_ENU.exe file.



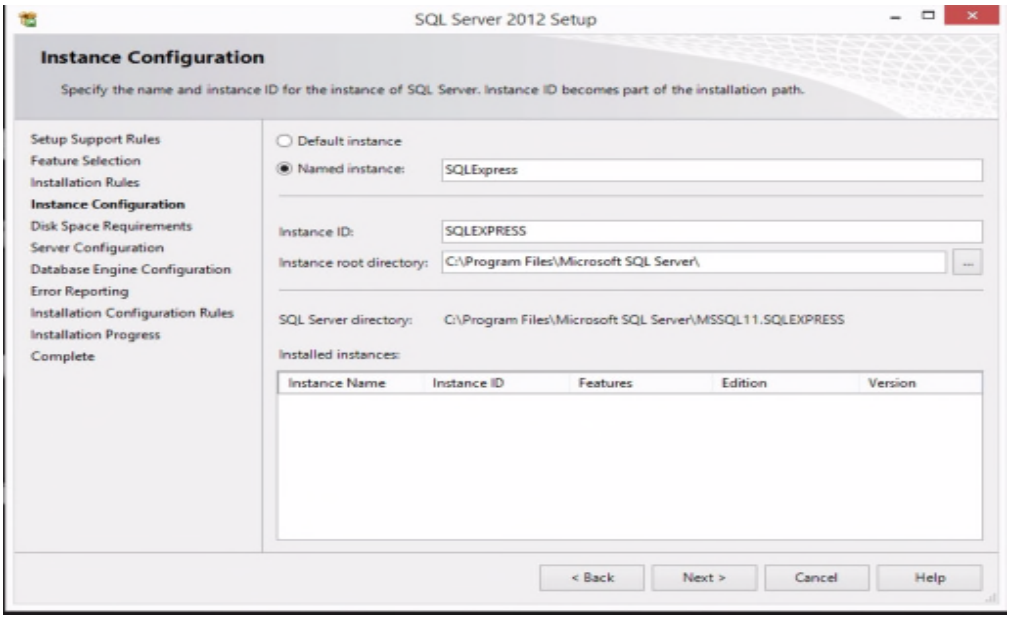
c. Select New SQL server stand-alone installation and click **Next**.



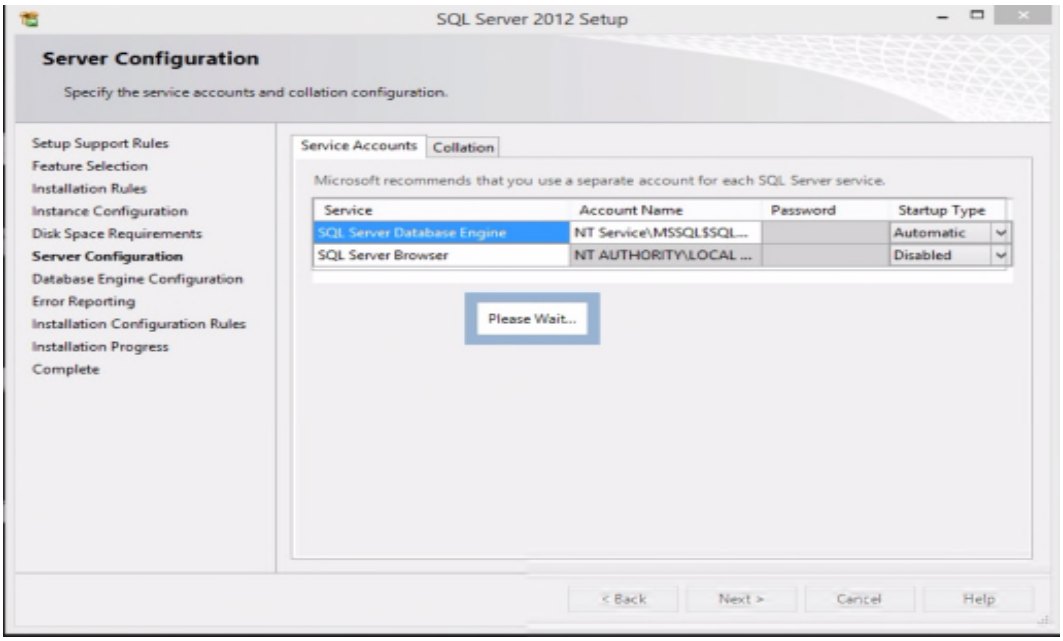
d. Accept the License and click **Next**.
e. Select all features from features selection menu.



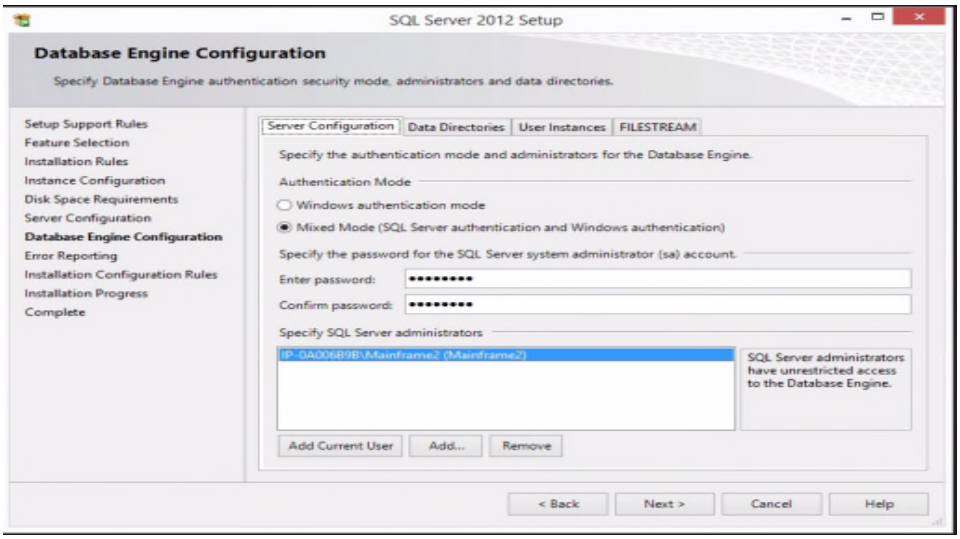
f. Select Named Instance SQLEXPRESS, Instance ID SQLEXPRESS and click **Next.**



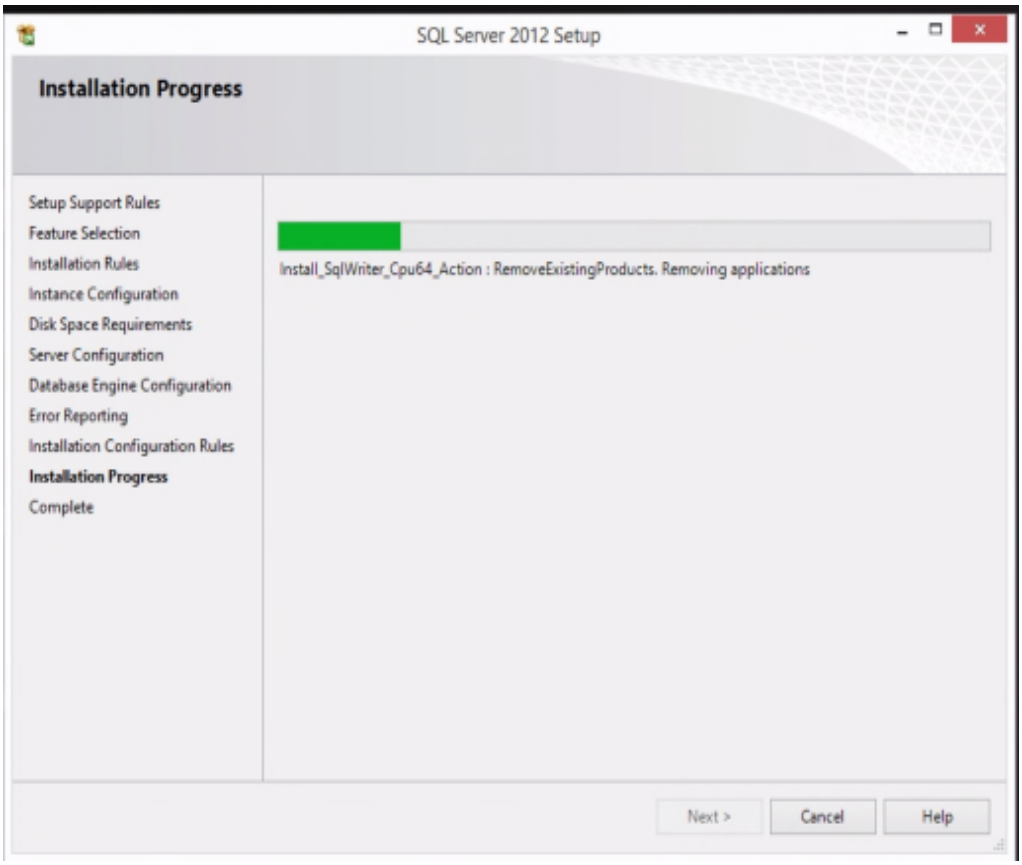
g. Accept defaults for Server Configuration and click **Next**.



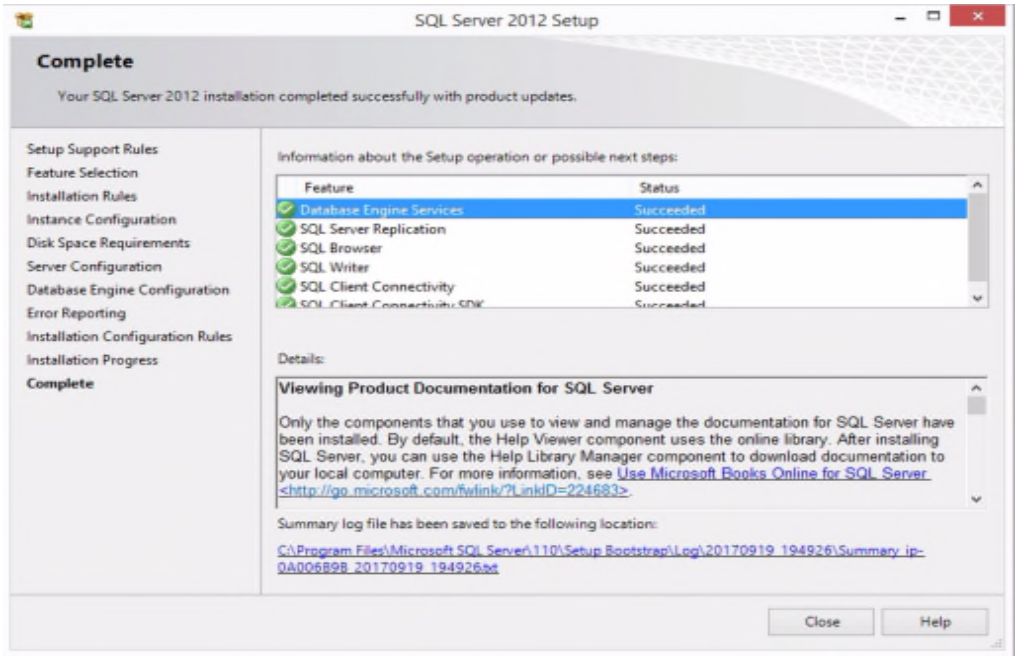
h. Select Mixed Mode and enter a password. Save this password for future use.



i. Click **Next** to Start Installation.



j. Close when Installation is done.



5 Install Adobe Acrobat Reader.

Install the aspenONE Engineering Suite on the Sandbox

Install the engineering suite on the Template VM using the Engineering Suite Installation Guide.

1. Download the media from the AspenTech Download Center and extract the zip file.
2. Double-click setup.exe.
3. Select aspenONE Engineering from the aspenONE V12 Installer window. Click **Begin Install**.
4. Select **Install aspenONE products**.
5. Accept the License and click **Next**.
6. Select the aspenONE product list to install, and then click **Next**.
7. Verify your installation.
8. Installation in progress.
7. Reboot the system when installation is done.
8. Navigate to the Citrix Downloads Page, download and install the Server OS Virtual Delivery Agent (VDA) on the Template VM.

Configure SLM Client on the Sandbox

The VM Template must be configured so that the engineering applications point to SLM server.

To configure the SLM client:

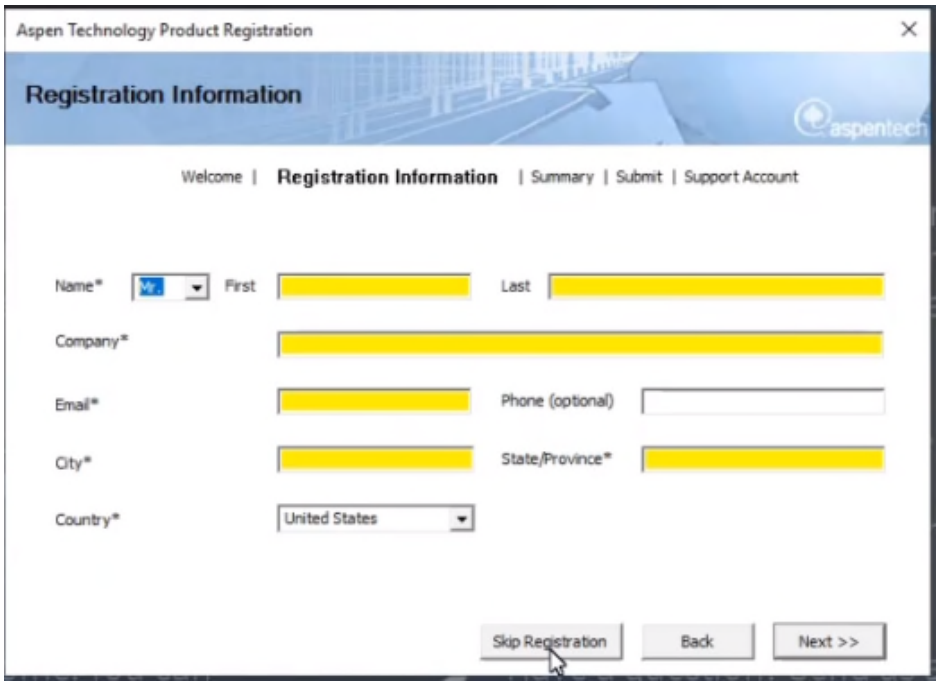
1. Launch aspenONE SLM License Manager from the Start menu.
2. Click **Configure** from the ribbon.
3. Add a Server Name or IP address, and then click **Apply Changes**.
4. Test the aspenONE Engineering suite to make sure installation and configuration were successful.

Test Sandbox

Open an AspenTech application, such as one of the Engineering applications, to verify that everything is working correctly and it can connect to the license server. Any issues must be addressed in the Sandbox before publishing; otherwise, the issues will end up in the production pool as well.

When the AspenTech Registration Window pops up, click **Register Now**. If you skip over this section, the registration window will continue to pop up every time an AspenTech product is launched.

Go through the product registration or choose **Skip Registration** to continue. After this, the registration window should no longer pop up after an application has been launched.



Verify that Aspen Engineering products can be opened, and no licensing errors appear. You can then close the application.

Any special customization or product configuration must also be set up prior to publishing to the sandbox.

Note: If your account can take backups of the Sandbox environment, you should take a snapshot prior to intensive smoke testing of the Sandbox. That way you can revert after testing and make any necessary changes to the Sandbox. The recently opened projects done during testing will then not show up in the Production environment. All customizations and settings you make to the Sandbox will be visible in the workload instances.

Generalize the Windows VM using Sysprep

To generalize your Windows VM, follow these steps:

1. Sign in to your Windows VM.
2. Open a Command Prompt window as an administrator. Change the directory to %windir%\system32\sysprep, and then run sysprep.exe.
3. In the **System Preparation Tool** dialog box, select **Enter System Out-of-Box Experience (OOBE)** and select the **Generalize** check box.
4. For **Shutdown Options**, select **Shutdown**.
5. Select **OK**.
6. When Sysprep completes, it shuts down the VM. Do not restart the VM.

Create a managed image in the portal

1. Go to the Azure portal to manage the VM image. Search for and select **Virtual machines**.
2. Select your VM from the list.
3. In the **Virtual machine** page for the VM, on the upper menu, select **Capture**. The **Create image** page appears.
4. For **Name**, either accept the pre-populated name or enter a name that you would like to use for the image.
5. For **Resource group**, either select **Create new** and enter a name, or select a resource group to use from the drop-down list.
6. If you want to delete the source VM after the image has been created, select **Automatically delete this virtual machine after creating the image**.
7. If you want the ability to use the image in any availability zone, select **On** for **Zone resiliency**.
8. Select **Create** to create the image.

After the image is created, you can find it as an Image resource in the list of resources in the resource group.

Windows Virtual Desktop Setup

Sign into the Azure portal.

Run the Azure Marketplace offering to provision a new host pool

To run the Azure Marketplace offering to provision a new host pool:

1. On the Azure portal menu or from the **Home** page, select **Create a resource**.
2. Enter **Windows Virtual Desktop** in the Marketplace search window.
3. Select **Windows Virtual Desktop - Provision a host pool**, and then select **Create**.

After that, follow the instructions in the next section to enter the information for the appropriate tabs.

Setting up the Basics tab:

1. Select a **Subscription**.
2. For **Resource group**, select **Create new** and provide a name for the new resource group.
3. Select a **Region**.
4. Enter a name for the host pool that's unique within the Windows Virtual Desktop tenant.
5. Select **Desktop type** option **Pooled**.
6. Enter users who can sign into the Windows Virtual Desktop clients and access a desktop. Use a comma-separated list. For example, if you want

to assign user1@contoso.com and user2@contoso.com access, enter *user1@contoso.com,user2@contoso.com*

7 For **Service metadata location**, select the same location as the virtual network that has connectivity to the Active Directory server.

Important: If you're using a pure Azure Active Directory Domain Services (Azure AD DS) and Azure Active Directory (Azure AD) solution, make sure to deploy your host pool in the same region as your Azure AD DS to avoid domain-join and credential errors.

8 Select **Next: Configure virtual machines**.

Setting up the Configure virtual machines tab:

1 Either accept the defaults or customize the number and size of the virtual machines.

2 Enter a prefix for the names of the virtual machines. For example, if you enter *prefix*, the virtual machines will be called **prefix-0**, **prefix-1**, and so on.

3 Select **Next: Virtual machine settings**.

Setting up the Virtual machine settings tab:

1 For **Image source**, select the source Managed image.

2 Enter the Image name from previous **Create a managed image** in the portal step.

3 Enter the Resource Group location of the Image name.

4 Disk Type should be set to Premium SSD.

5 Enter the AD domain join UPN. This account must be the domain account that will join the virtual machines to the Active Directory domain. This username and password will be created on the virtual machines as a local account. You can reset these local accounts later.

Notes:

- If you are joining your virtual machines to an Azure AD DS environment, ensure that your domain join user is a member of the **AAD DC Administrators group**.
- The account must also be part of the Azure AD DS managed domain or Azure AD tenant. Accounts from external directories associated with your Azure AD tenant cannot correctly authenticate during the domain-join process.

6 Select the **Virtual network** that has connectivity to the Active Directory server, and then choose a subnet to host the virtual machines.

7 Select **Next: Windows Virtual Desktop information**.

Setting up the Windows Virtual Desktop Information tab:

1 Leave the tenant group that contains your tenant as the default, unless you were provided a specific tenant group name.

2 For **Windows Virtual Desktop tenant name**, enter the name of the tenant where you will be creating this host pool.

3 Specify the type of credentials that you want to use to authenticate as the Windows Virtual Desktop tenant RDS Owner. Enter the UPN or Service principal and a password.

Note: If you completed the Create service principals and role assignments with PowerShell tutorial, select **Service principal**.

4 For **Service principal**, for **Azure AD tenant ID**, enter the tenant admin account for the Azure AD instance that contains the service principal. Only service principals with a password credential are supported.

5 Select **Next: Review + create**.

Complete setup and create the virtual machine

In Review and Create, review the setup information. If you need to change something, go back and make changes. When you're ready, select Create to deploy your host pool.

Depending on how many virtual machines you're creating, this process can take 30 minutes or more to complete.

Important: To help secure your Windows Virtual Desktop environment in Azure, we recommend you don't open inbound port 3389 on your virtual machines. Windows Virtual Desktop doesn't require an open inbound port 3389 for users to access the host pool's virtual machines.
If you must open port 3389 for troubleshooting purposes, we recommend you use just-in-time access. For more information, see **Secure your management ports with just-in-time access**.

Note: The **Enable Input Method Editor** must be turned on in each user's **Remote Desktop Web Client** settings. This is done by selecting the gear icon in the navigation bar to open the **Settings** side panel and set the **Enable Input Method Editor** switch to **On**.

3 Appendix

Published Applications

Application Name	Installed Path
Aspen Adsorption V12	\AspenTech\AMSystem V12.0\Bin\AspenModeler.exe
Aspen Capital Cost Estimator V12	\AspenTech\Economic Evaluation V12.0\Program\Sys\Aspen Capital Cost Estimator.exe
Aspen Chromatography V12	\AspenTech\AMSystem V12.0\Bin\AspenModeler.exe
Aspen Custom Modeler V12	\AspenTech\AMSystem V12.0\Bin\AspenModeler.exe
Aspen Energy Analyzer V12	\AspenTech\Aspen Energy Analyzer V12.0\concepts.exe
Aspen Exchanger Design and Rating V12	\AspenTech\Aspen Exchanger Design and Rating V12.0\XEQ\AspenEDR.exe
Aspen Flare System Analyzer V12	\AspenTech\Aspen Flare System Analyzer
Aspen HYSYS V12*	\AspenTech\Aspen HYSYS V12.0\AspenHysys.exe
Aspen In-Plant Cost Estimator V12	\AspenTech\Economic Evaluation V12.0\Program\Sys\Aspen In-Plant Cost Estimator.exe
Aspen Model Runner V12	\AspenTech\AMSystem V12.0\Bin\AspenModeler.exe
Aspen Plus Dynamics V12	\AspenTech\AMSystem V12.0\Bin\AspenModeler.exe
Aspen Operator Training V12	\AspenTech\Aspen Operator Training V12.0\AspenOperatorTraining.exe
Aspen Plus V12*	\AspenTech\Aspen Plus V12.0\GUI\Xeq\AspenPlus.exe
Aspen Process Economic Analyzer V12	\AspenTech\Economic Evaluation V12.0\Program\Sys\Aspen Process Economic Analyzer.exe
Aspen Properties Desktop V12	\AspenTech\Aspen Properties V12.0\GUI\xeq\AspenProperties.exe
Aspen Utilities Planner V12	\AspenTech\AMSystem V12.0\Bin\AspenModeler.exe
Excel 2016	\Microsoft Office\root\Office16\EXCEL.EXE

*Activated Datasheet and PSV Datasheet functionality requires ABE, which is not supported in a Virtual Apps Essentials Deployment.