Amazon AppStream 2.0: SOLIDWORKS PDM Professional Deployment Guide

Install SOLIDWORKS PDM Professional in AWS and distribute a vault view to your AppStream 2.0 users

February 2021

https://aws.amazon.com/appstream2/

Contents

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Welcome

This guide describes how to provision an Amazon virtual private cloud (VPC), create and test an AppStream 2.0 environment for application streaming, configure and deploy SOLIDWORKS PDM Professional in AWS, and distribute a vault view to your Amazon AppStream 2.0 users.

What you'll accomplish:

- Provision an Amazon virtual private cloud ([Amazon VPC](#)) to provide an isolated virtual network infrastructure within the AWS Cloud. Your AppStream 2.0 and SOLIDWORKS resources will use this environment.

- Provision an EC2 instance in your VPC, and install SOLIDWORKS PDM Professional and SolidNetwork Licensing on this instance. This instance will serve as the PDM Professional server and SolidNetwork Licensing server.

- Provision another EC2 instance to administer the PDM Professional and SolidNetwork Licensing server remotely.

- Create an AppStream 2.0 environment that includes the following resources:

  - An image builder that is optimized for graphics-intensive applications and that has SOLIDWORKS PDM Client installed.

  - An image

  - A fleet

  - A stack

  - A user pool

- Test the AppStream 2.0 end-user experience for authentication and application streaming.

- Create a SOLIDWORKS PDM Professional vault view and distribute it to your AppStream 2.0 users.

What you need before starting:

Before you begin, you'll need the following:

- **An AWS account:** You need an AWS account to use AppStream 2.0 and other AWS services. For information about how to sign up for and activate an AWS account, see [How do I create and activate a new Amazon Web Services account](#).

- **Skill level:** You do not need prior experience with AWS to complete these exercises. A basic understanding of desktop computing is helpful but not required.

- **A SOLIDWORKS account:** This account is required to log in and download SOLIDWORKS application installers. If you don't have a SOLIDWORKS account, you can create one by visiting https://customerportal.solidworks.com.

Step 1. Sign in to the AWS Management Console and select an AWS Region

If you do not have an AWS account, you must first complete the steps in How do I create and activate a new Amazon Web Services account?

1. Sign in to the AppStream 2.0 console at https://console.aws.amazon.com/appstream2.

2. Enter your email address or your AWS account ID, and then choose **Next**.

3. Enter your AWS account password, and then choose **Sign In**.

4. In the menu in the upper right corner of the console, select the AWS Region that you want.

Step 2. Create network resources

In this section, you will use a CloudFormation template to automatically create and configure the following resources for your SOLIDWORKS and AppStream 2.0 networking environment:

- Two private subnets, each in its own Availability Zone
- Two public subnets, each in its own Availability Zone
- An internet gateway, with a default route on the public subnets
- Two NAT gateways, each in its own Availability Zone, with default routes in the private subnets.

The NAT gateway lets the streaming instances in your private subnets connect to the internet or other AWS services, but prevents the internet from initiating a connection with those instances.

Requirements for Choosing a Region for your VPC

Before you use CloudFormation to create your VPC, be aware that not all Availability Zones in all Regions support the AppStream 2.0 Graphics Design instance type. When you configure networking for your image builder, you must choose a private subnet in an Availability Zone that supports this instance type. Depending on the Region in which CloudFormation creates your VPC, your private subnets might not be created in Availability Zones that support this instance type. If this is the case, when you create your image builder, the following error displays in the AppStream 2.0 console: "Your requested instance type is not supported in your requested Availability Zone."

Use AWS CloudFormation to create your VPC

The following steps use a template in AWS CloudFormation to automatically create and configure the necessary network resources.

1. Make sure that you are signed in to the AWS Management Console.

2. In the following list of regional choices, open the link associated with the AWS Region in which you want to build your AppStream 2.0 environment for SOLIDWORKS PDM Professional. All resources for your environment, including SOLIDWORKS PDM Professional, AppStream 2.0, and Amazon Elastic Compute Cloud (Amazon EC2) instances, will reside in this Region.

   Important: The Region that you choose for your VPC must include two Availability Zones that support the AppStream 2.0 Graphics Design instance type. Although the Graphics Design instance type is supported in all Regions where AppStream 2.0 is available, not all Availability Zones support this instance type.

   US East (Virginia)

   US West (Oregon)

   Asia Pacific (Seoul)

   Asia Pacific (Singapore)

3. The AWS CloudFormation console displays the URL of a template that is used to create your network resources and the name of the resulting AWS CloudFormation stack.

4. On the **Quick create stack** page, for **Stack name**, keep the default name, **SolidWorksPDMVPC**, or specify another.

Figure 1: AWS CloudFormation stack template URL and name for the SolidWorksPDM VPC

5. Under **Parameters**, for **EnvironmentName**, type **SolidWorksPDM**. This name is used to tag all of the resources that CloudFormation creates for this environment.

6. Keep the default values for the CIDR blocks. These values are as follows:

   PrivateSubnet1CIDR: 10.192.20.0/24

   PrivateSubnet2CIDR: 10.192.21.0/24

   PublicSubnet1CIDR: 10.192.10.0/24

   PublicSubnet2CIDR: 10.192.11.0/24

VpcCIDR: 10.192.0.0/16

7. Choose **Create stack**.
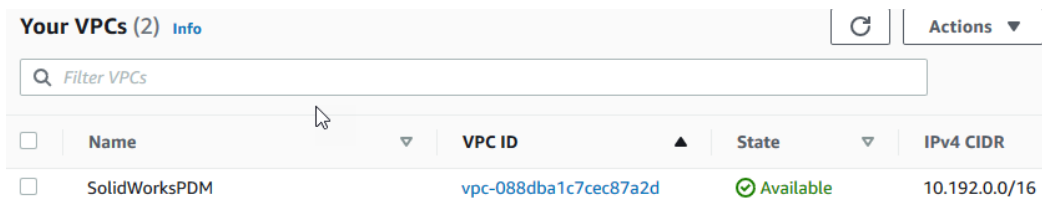
Figure 2: AWS CloudFormation stack template parameters for the SolidWorksPDM VPC

8. When the creation process completes, usually within five to ten minutes, the AWS CloudFormation console displays the status **CREATE_COMPLETE**.

9. Open the Amazon VPC console at https://console.aws.amazon.com/vpc/.

10. In the navigation pane, under **Virtual Private Cloud**, choose **Your VPCs**. In the list of VPCs, verify that the **SolidWorksPDM** VPC displays.

Figure 3: VPC ID and IPv4 CIDR for the SolidWorksPDM VPC in the Amazon VPC console

Note

Under **VPC ID**, the identifier will differ for your VPC, following this format: **vpc-**
<vpcid>.

11. In the navigation pane, under **Virtual Private Cloud**, choose **Subnets**. In the list of subnets, verify that the four SolidWorksPDM subnets display.

Name	Subnet ID	State	VPC	IPv4 CIDR
SolidWorksPDM Private Su...	subnet-0103baff2195447f0	available	vpc-088dba1c7cec87a2d ...	10.192.21.0/24
SolidWorksPDM Private Su...	subnet-0414ed7ab4ce22cf9	available	vpc-088dba1c7cec87a2d ...	10.192.20.0/24
SolidWorksPDM Public Sub...	subnet-063ecad13484fb487	available	vpc-088dba1c7cec87a2d ...	10.192.10.0/24
SolidWorksPDM Public Sub...	subnet-0a72ea112143a71be	available	vpc-088dba1c7cec87a2d ...	10.192.11.0/24

Figure 4: Subnets for the SolidWorksPDM VPC in the Amazon VPC console

Note

Under **Subnet ID**, the ID will differ for your subnets, with each subnet following this format: subnet-<*subnetid*>.

Configure the DNS settings for your VPC

In this section, you will configure the newly created VPC's security groups. These groups will control network access to the EC2 instances that you create later.

1. In the navigation pane, under **Virtual Private Cloud**, choose **Your VPCs**.

2. In the list of VPCs, select the **SolidWorksPDM** VPC.

3. Choose **Actions**, **Edit DNS resolution**.
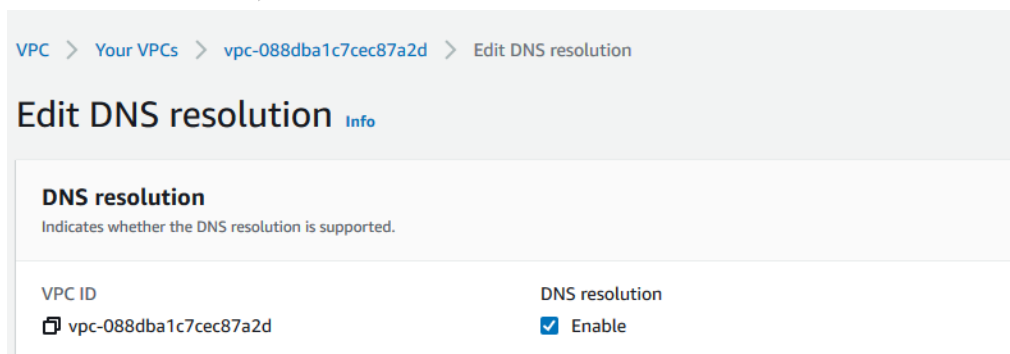
Figure 5: DNS resolution settings for the SolidWorksPDM VPC

4. Verify that the **Enabled** check box is selected for **DNS resolution**, choose **Save changes**.

5. In the list of VPCs, with the **SolidWorksPDM** VPC still selected, choose **Actions**, **Edit DNS hostnames**.
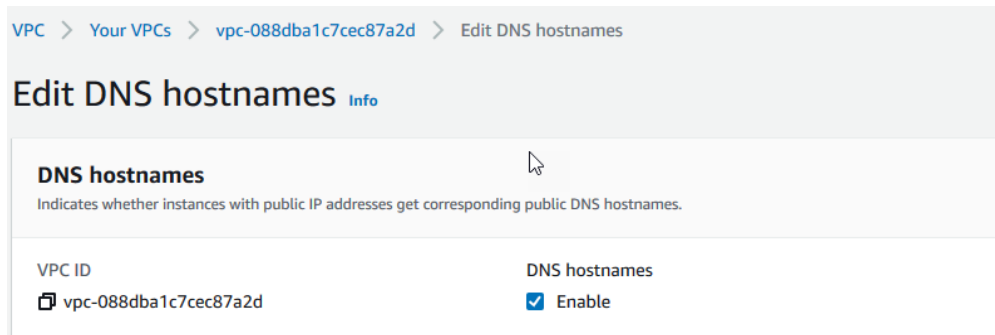
Figure 6: DNS hostname settings for the SolidWorksPDM VPC

6. Verify that the **Enable** check box is selected for **DNS hostnames**, choose **Save changes**, and then choose **Close**.

Step 3: Set up a SOLIDWORKS PDM Professional and SolidNetwork Licensing server

In this section, you will:

- Configure one EC2 instance to support both SOLIDWORKS PDM Professional and SolidNetwork Licensing. Configure VPC security group rules for the EC2 instance.

- Configure a second EC2 instance to administer the SOLIDWORKS PDM Professional and SolidNetwork Licensing server remotely.

- Install the following programs on the first EC2 instance:

    o SOLIDWORKS PDM Professional server
    o SolidNetwork License Manager

Configure an EC2 instance to function as the SOLIDWORKS PDM Professional and SolidNetwork Licensing server

In this section, you'll configure an EC2 instance that runs Windows Server 2019 and includes Microsoft SQL Server 2017. This EC2 instance will function as the SOLIDWORKS PDM Professional server and SolidNetwork Licensing server.

1. Open the Amazon EC2 console at https://console.aws.amazon.com/ec2/.

2. Choose **Launch instance**.

3. In **Step 1: Choose an Amazon Machine Image (AMI)**, select the **Microsoft Windows Server 2019 with SQL Server 2017 Standard** image.

4. In **Step 2: Choose an Instance Type**, for **Type**, select **t3a.xlarge**, and then choose **Next: Configure Instance Details**.

5. In **Step 3: Configure Instance Details**, do the following:

   a. For **Network**, choose the **SolidWorksPDM VPC**.

   b. For **Subnet**, choose either the **AZ1** or **AZ2 SolidWorksPDM Private Subnet**.

   c. For the remaining settings, keep the default values.

   d. Choose **Next: Add Storage**.

6. In **Step 4: Add Storage**, for the **Root** volume, in **Size (GiB)**, enter **100**. Keep the remaining default options.

7. Choose **Review and Launch**.

8. In **Step 7: Review Instance Launch**, review the instance configuration settings. After you verify that they are correct, choose **Launch**.

9. In **Select an existing key pair or create a new key pair**, do the following:

   a. Choose **Create a new key pai**r.

   b. For **Key pair name**, enter a name for the instance key pair to help you easily identify the key pair later (for example, **SolidWorks PDM Server key pair**).

   c. Choose **Download Key Pair**, and save the private key file (*.pem file) to a secure and accessible location on your local computer. This file is required later.

   d. Choose **Launch Instances**.

   e. Choose **View Instances** to display the **Instances** page.

10. In the list, the new EC2 instance displays. This instance is the SOLIDWORKS PDM Professional and SolidNetwork Licensing server, and is provisioned in the private subnet that you selected in step 5.

11. Select your newly created instance. In the **Name** column, click the edit box and enter a name to help you easily identify the instance later (for example, **SolidWorks PDM Server**).

12. On the **Networking** tab, under **Networking details**, make a note of the host name under **Private IPv4 DNS**. You'll need it later. The host name resolves to the private IP address of the SOLIDWORKS PDM Professional server EC2 instance.

Configure security group rules for the SOLIDWORKS PDM Professional and SolidNetwork Licensing server

1. Choose the **Security** tab for the instance.

2. Under **Security groups**, select the name of the security group that is associated with the instance. The name of the security group is formatted as a link. Selecting this link opens the **Details** page for the security group. Make a note of the security group name. You'll need it later.

3. Choose the **Inbound rules** tab, and then choose **Edit inbound rules**.

4. Verify that the **MSSQL** and **RDP** inbound rules appear, with the following **Protocol**, **Port range**, and **Source** values:

Type	Protocol	Port Range	Source
MS SQL	TCP	1433	Custom
RDP	TCP	3389	Custom

For each rule, click inside the **Source** text box to display the list of available CIDR blocks, and type **10.192.0.0/16**.

5. Create the following additional inbound rules, and then choose **Preview actions**.

Type	Protocol	Port Range	Source	Address
HTTP	TCP	80	Custom	10.192.0.0/16
Custom TCP Rule	TCP	3030	Custom	10.192.0.0/16
Custom TCP Rule	TCP	25734-25735	Custom	10.192.0.0/16
HTTPS	TCP	443	Custom	10.192.0.0/16

6. Verify that the changes to the inbound rules appear as follows, and then choose **Confirm**.

Figure 7: Previewing inbound security group rules for the SOLIDWORKS PDM Professional and SolidNetwork Licensing server

7. The list of configured inbound rules displays as follows:

Figure 8: List of configured inbound security group rules for the SOLIDWORKS PDM Professional and SolidNetwork Licensing server

Configure an EC2 instance to function as the remote administration server

Complete the following steps to configure the EC2 instance that you'll use to administer the SOLIDWORKS PDM Professional and SolidNetwork Licensing server remotely.

1. Open the Amazon EC2 console at https://console.aws.amazon.com/ec2/.

2. Choose **Launch instance**.

3. In **Step 1: Choose an Amazon Machine Image (AMI)**, select the **Microsoft Windows Server 2019 Base** image.

4. In **Step 2: Choose an Instance Type**, for **Type**, select **t2.large**, and then choose **Next: Configure Instance Details**.

5. In **Step 3: Configure Instance Details**, do the following:

    a. For **Network**, choose the **SolidWorksPDM** VPC.

    b. For **Subne**t, choose either the **AZ1** or **AZ2 SolidWorksPDM Public Subnet**.

    c. For **Auto-assign Public IP**, choose **Enable.**

    d. For the remaining settings, keep the default values.

6. Choose **Review and Launch**.

7. In **Step 7: Review Instance Launch**, review the instance configuration settings. After you verify that they are correct, choose **Launch**.

8. In **Select an existing key pair or create a new key pair**, do the following:

    a. Choose **Create a new key pair**.

    b. For **Key pair name**, enter a name for the instance key pair to help you easily identify the key pair later (for example, **SolidWorks Remote Administration Server key pair**).

    c. Choose **Download Key Pair**, and save the private key file (*.pem file) to a secure and accessible location on your local computer. This file is required later.

    d. Choose **Launch Instances**.

    e. Choose **View Instances** to display the **Instances** page.

9. In the list, the new EC2 instance displays. This instance is the remote administration server, and is provisioned in the public subnet that you selected in step 5.

10. Select your newly created instance. In the **Name** column, click the edit box and enter a name to help you easily identify the instance later (for example, **SolidWorks remote administration server**).

Configure security group rules for the remote administration server

1. Choose the **Security** tab for the instance.

2. Under **Security group**, select the name of the security group that is associated with the instance. The name of the security group is formatted as a link. Selecting this link opens the **Details** page for the security group.

3. Choose the **Inbound rules** tab, and then choose **Edit inbound rules**.

4. The **RDP** inbound rule appears. For **Source**, choose **My IP** to automatically populate the field with the public IPv4 address of your local computer.

5. Verify that the RDP inbound rule appears as follows, and then choose **Save**
   This paper is out of date and has been archived
   rules.
   This is in the process of being updated. Until then, for the latest
   technical content, contact your AWS Account Manager

Type	Protocol	Port Range	Source	Address
RDP	TCP	3389	My IP	*<local-computer-ip-address>*

In the console, the configured rule displays as follows:

Inbound rules			
Type	Protocol	Port range	Source
RDP	TCP	3389	*<ip-address-or-range-of-addresses>*

Figure 9: RDP inbound security group rule for the SOLIDWORKS PDM Professional and SolidNetwork Licensing server

Connect to your EC2 instances

1. Use the key pair file that you downloaded to your local computer earlier to retrieve the password for both the SOLIDWORKS PDM Professional and SolidNetwork Licensing server, and the remote administration server. To do so, complete the following steps for each server.

   a. In the EC2 console, in the navigation pane, choose **EC2 Dashboard**.

   b. In the navigation pane, choose **Instances**.

   c. In the list of instances, choose the instance that you want to connect to.

   d. Choose **Actions, Security, Get Windows password**.

   e. In the **Get Windows password** dialog box, choose **Browse**, and locate the file that contains the key pair associated with the instance. After you select the file, the contents of the private key pair are copied to the key pair text box.

   f. Choose **Decrypt Password**.

   g. The decrypted password displays. Save the decrypted password to a secure and accessible location on your local computer. This password is required later.

   h. Choose **Close**.

   i. In the list of EC2 instances, select the instance, and choose **Actions, Connect**.

   j. In the **Connect to instance** dialog box, choose **RDP client**.

   k. Choose **Download remote desktop file** to download the RDP connection file to your local computer. Note the connection details.

   l. Choose **Cancel** to close the dialog box.

2. On your local computer, open the RDP client connection file for the remote administration server to establish a remote connection to that server.

3. On the remote administration server, open an RDP client to establish a remote connection to the SOLIDWORKS PDM Professional and SolidNetwork Licensing server.

Install and configure SOLIDWORKS PDM Professional and SolidNetwork Licensing

After you connect to the EC2 instance that will function as the SOLIDWORKS PDM and SolidNetwork Licensing server, you will:

- Configure SQL Server to allow SQL Server Authentication.
- Create a SQL Server account.
- Install SOLIDWORKS PDM Professional and SolidNetWork Licensing Manager.
- Configure Windows Defender Firewall on the instance to open the required communication ports.
- Activate the SOLIDWORKS PDM Professional license.
- Create a new SOLIDWORKS PDM file vault.

Configure SQL Server

1. Open Microsoft SQL Server Management Studio. To do so, choose the Windows **Start** button, and then choose **Microsoft SQL Server Tools**, **Microsoft SQL Server Management Studio**.

2. The **Connect to Server** dialog box displays. To connect to the Database Engine of your localhost SQL Server instance, do the following:

   a. For **Server type**, keep the default value, **Database Engine**.

   b. For **Server name**, keep the default localhost name.

   c. For **Authentication**, keep the default method, **Windows Authentication**.

3. The dialog box should display similar to the following. Choose **Connect**.

*Figure 10: SQL Server **Connect to Server** dialog box*

4. After you connect to the Database Engine, in Object Explorer, right-click the SQL Server localhost and choose **Properties**.

5. Under **Select a page**, choose **Security**. This is out of date and has been archived

    This is in the process of being updated. Until then, for the latest

6. Under **Server authentication**, choose **SQL Server and Windows Authentication mode**. technical content, contact your AWS Account Manager.

7. Keep the remaining default settings, and then choose **OK**.
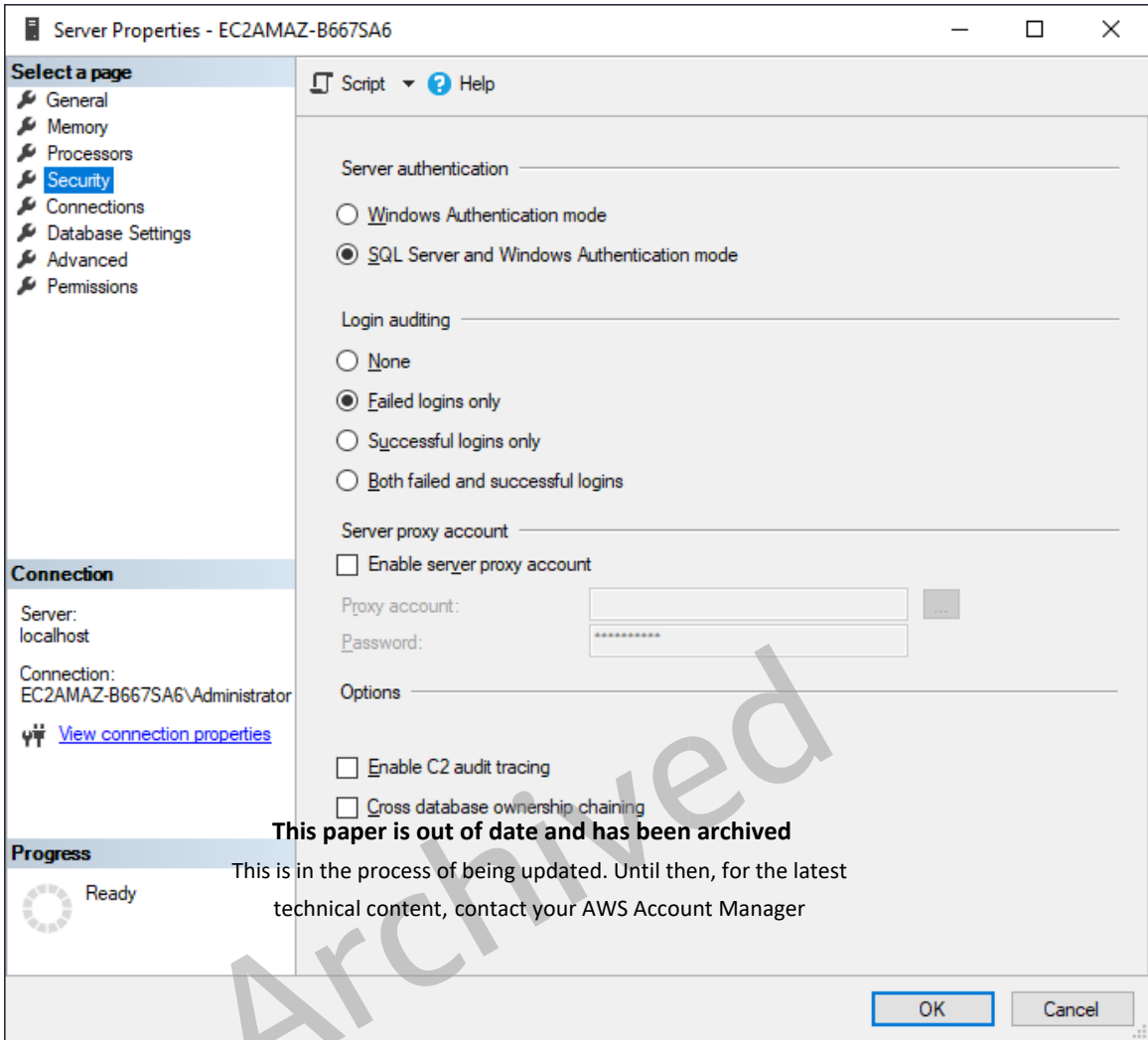
Figure 11: SQL Server properties: SQL Server and Windows Authentication mode

8. A message notifies you that some of your configuration changes will not take effect until SQL Server is restarted. Choose **OK**.

9. In Object Explorer, right-click the **Security** folder, and then choose **New**, **Login**.

10. The **General** page displays. To configure account login settings, do the following:

a. For **Login name**, type **swpdm**.

b. Change the authentication type from **Windows authentication** to **SQL Server authentication**.

c. For **Password**, enter and then confirm a strong password.

d. Clear (unselect) the box for **Enforce password policy**.

11. The **General** page should display as follows:
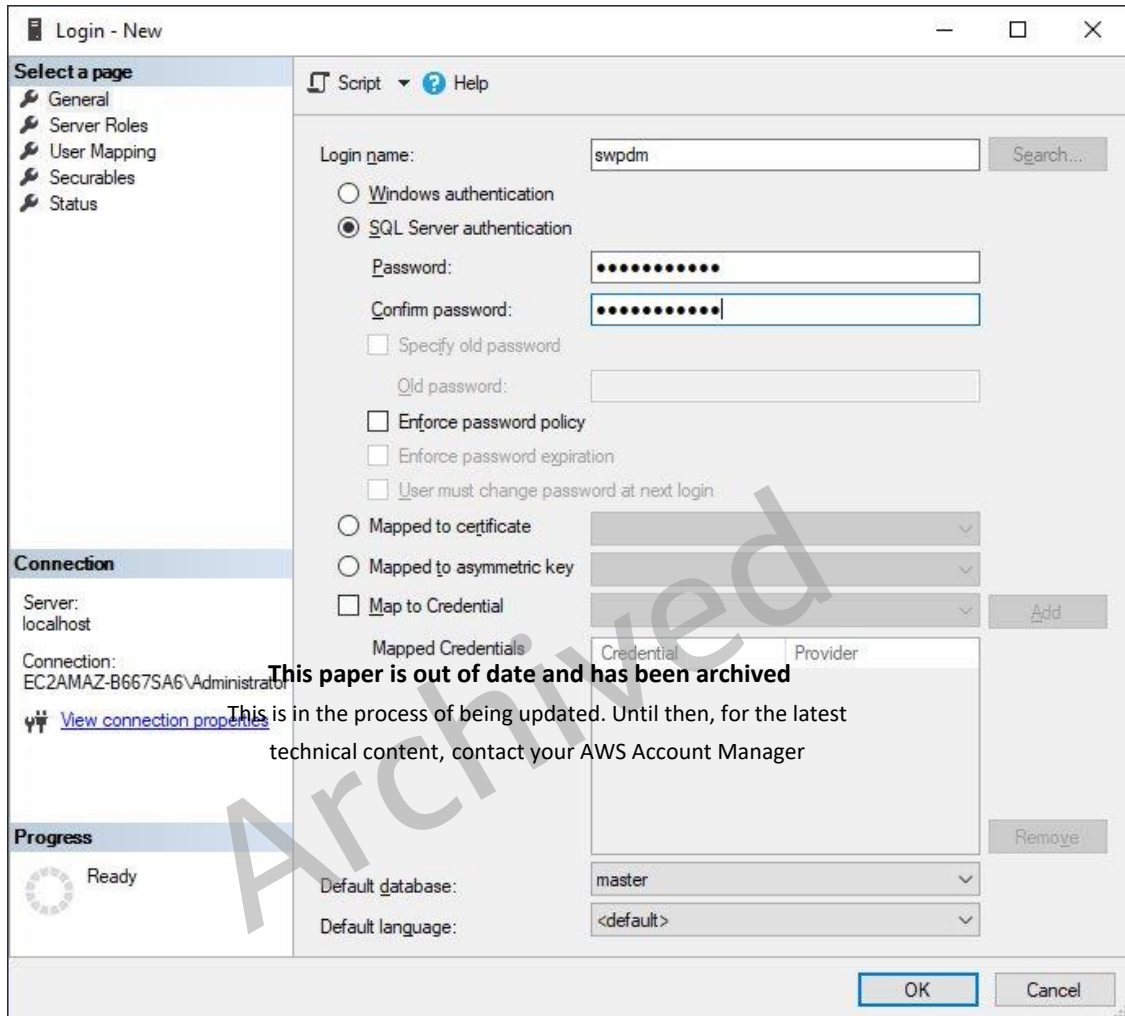
*Figure 12: SQL Server properties: **General** page*

12. Under **Select a page**, choose **Server Roles**.

13. Select the check box for **sysadmin**, and keep the check box for **public** selected.

14. The **Server roles** page should display as follows:
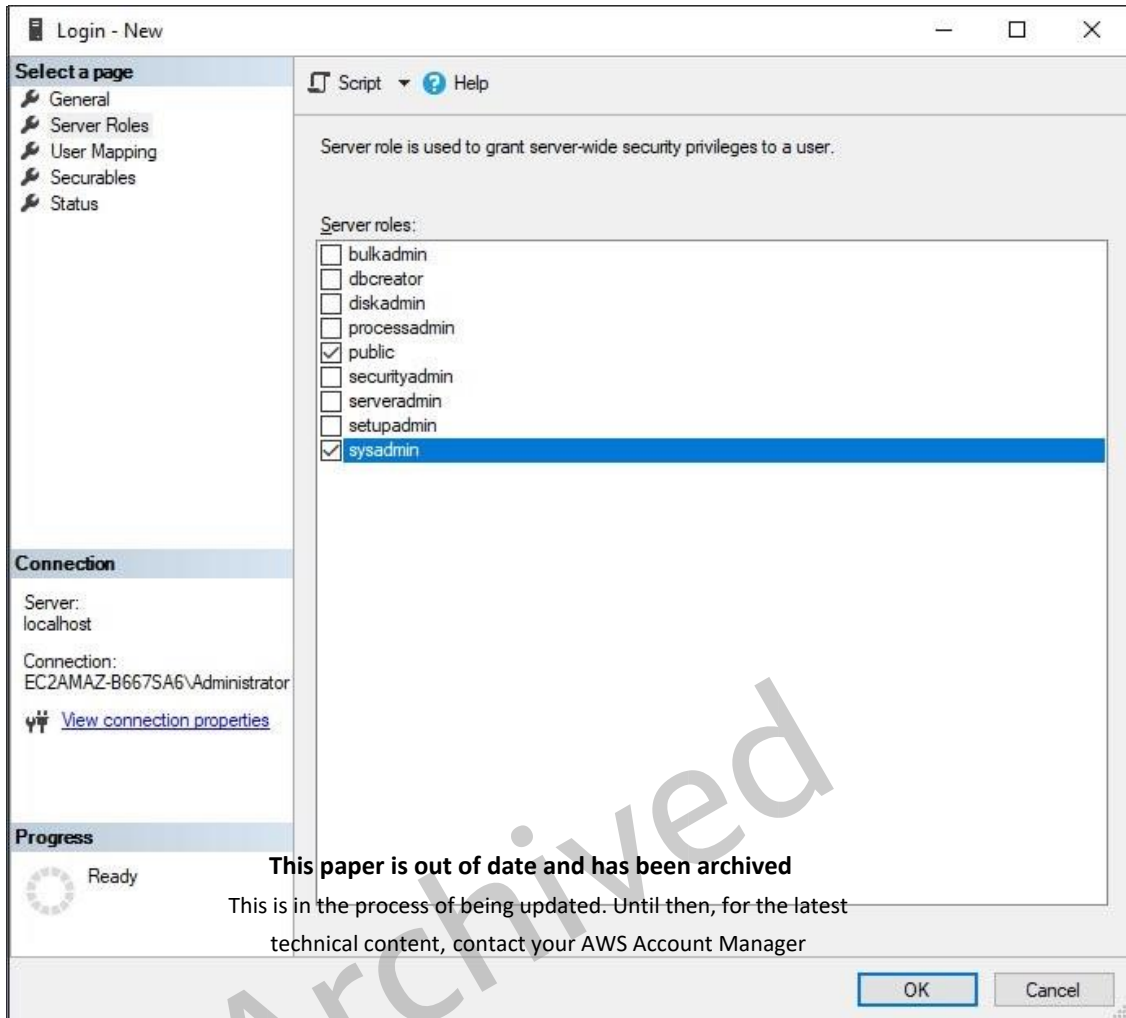
*Figure 13: SQL Server properties: **Server roles** page*

15. Choose **OK**.

16. Close **SQL Server Management Studio** and restart the SOLIDWORKS PDM Professional server instance.

17. After the instance restarts, reconnect to it.

Install SOLIDWORKS PDM Professional and SolidNetwork License Manager

1. On the SOLIDWORKS PDM Professional server instance, open a web browser and sign in to the SOLIDWORKS customer portal at https://customerportal.solidworks.com.

2. In the **DOWNLOAD** section of your account page, choose **Downloads and Updates**.

3. On the **Downloads** page, for **Select Version**, choose **2020**.

4. Under **Product**, select the **SOLIDWORKS Products** link for **Service Pack 4**, released **07/27/2020**.

5. On the **SOLIDWORKS Download EULA** page, choose **Accept Agreement & Continue**.

6. On the **Download and Install SOLIDWORKS Products Using the Installation Manager** page, choose the **Download** link to download SOLIDWORKS 2020 Service Pack 4.0.

7. Download the **SolidWorksSetup.exe** zip file to an accessible location on the license server.

8. Extract the contents of the downloaded zip file to a known file path. After the files are extracted, the **setup.exe** file starts the setup program automatically.

9. On the **Welcome to the SOLIDWORKS Installation Manager** page, under **Specify the type of installation**, choose **Install server components**, and select the check boxes that correspond to the following installation options:

   - **Install SOLIDWORKS PDM Server components on this computer**

   - **Install SolidNetWork License Manager (distributed licensing) on this computer**

10. Choose **Next**.

11. If the **SolidNetWork License Manager Options** page displays, enter the SOLIDWORKS PDM license serial number, specify a location for the directory, and choose **Next**.

12. On the **Summary** page, for **SOLIDWORKS PDM Server**, choose **Change** to provide the additional information required.

13. On the **SOLIDWORKS PDM Server** page, do the following:

   a. For **Select Server Product**, choose **SOLIDWORKS PDM Professional**.

   b. For **Installation Location**, choose **Browse**, and specify a file path.

   c. For **Select Features**, select the following check boxes: **Archive Server**, **Database Server**, and **Client**.

   d. After you select the **Database Server** check box, enter the following information for your SQL Server database:

      - For **Server Name**, enter **localhost**.

- For **Login Name**, type **swpdm**, the login name that you specified when you completed the steps in the SQL Server Configuration section of this guide.

- For **Password**, type the password that you specified for this account.

14. Choose **Back to Summary**.

15. On the **Summary** page, select the **I accept the terms of the SOLIDWORKS** check box.
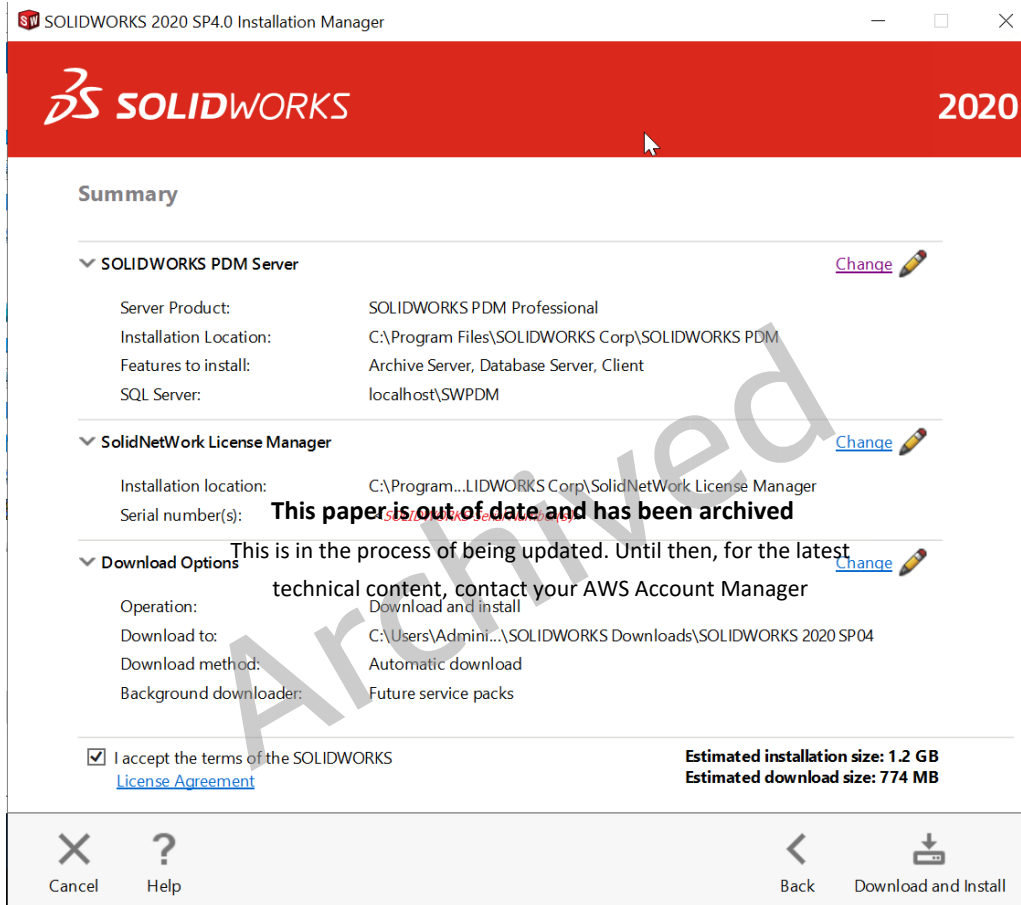
Figure 14: SOLIDWORKS PDM Server and SolidNetwork License Manager installation summary

16. On the bottom right of the **Summary** page, choose **Download and Install**.

17. After the installation completes, choose **Finish**.

If the installer prompts you to restart the instance, choose **Restart Later**.

Configure the SolidWorks Archive Server

1. The Archive Server Configuration wizard **Welcome** page opens. Choose **Next**.
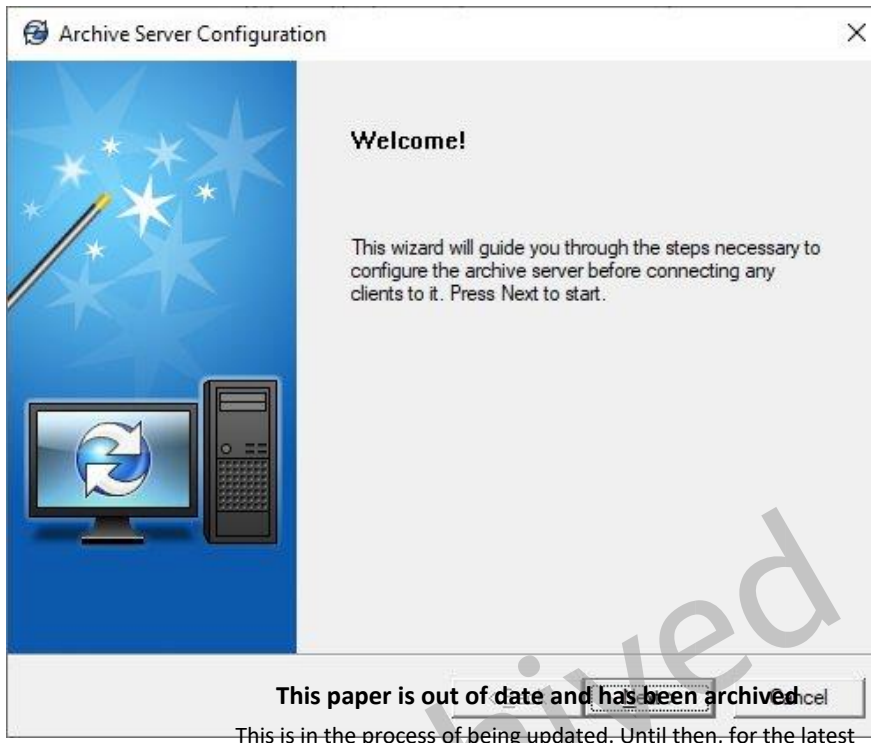
Figure 15: Archive Server Configuration Wizard: Welcome Page

2. The Archive Server Configuration wizard guides you through the steps for configuring the archive server.

3. On the **Archive folder** page, you select an archive folder where SOLIDWORKS PDM should store the file vaults. If a path doesn't exist and a message prompts you to choose whether to create the path, choose **Yes**.

4. **On the SQL user login and password** page, you are prompted to provide your SQL Server credentials. Specify the same login name and password that you specified when you completed the steps in the SQL Server Configuration section of this guide.

5. Follow the remaining prompts in the wizard to finish the installation.

6. Restart the SOLIDWORKS PDM Professional server instance and then reconnect to it.

Configure Windows Defender Firewall

1. Open Windows Defender Firewall. To do so, choose the Windows **Start** button, and then choose **Control Panel**, **System and Security**, **Windows Defender Firewall**.

2. In the left pane, select **Advanced settings**.

3. Right-click **Inbound Rules**, and then choose **New Rule**.

4. For the rule type, Choose **Port**, and then choose **Next**.

5. For the protocol, verify that **TCP** is selected.

6. For the ports, choose **Specific local ports**, and enter the following ports:

   25734,25735

7. Choose **Next**.

8. For the action, keep **Allow the connection** selected, and then choose **Next**.

9. For the profile, keep the **Domain**, **Private**, and **Public** check boxes selected, and then choose **Next**.

10. For the name, type **SW Licensing server ports**, and then choose **Finish**.

11. Repeat steps 3 through 10 for TCP ports 3030 and 1433. For the name, type **SW PDM server ports**, and then choose **Finish**.

12. Close Windows Defender Firewall.

Activate a license for the SolidWorks PDM Professional server

1. Start SolidNetWork License Manager Server 2020. To do so, choose the Windows **Start** button, and then choose **SOLIDWORKS Tools 2020**, **SolidNetwork License Manager Server 2020**.

2. When prompted to activate licensing, choose **Yes**.

3. On the **SolidNetWork License Server Information** page, do the following:

   a. Keep the **A firewall is in use on this server** check box selected.

   b. For **Port Number**, verify that **25734** is specified.

   c. For **Vendor Daemon Port Number**, verify that **25735** is specified.

d. Choose **Next**.

4. On the **Activate/Deactivate Your SOLIDWORKS Product** page, do the following:

   a. Choose the serial number that is associated with your SolidWorks PDM Professional server.

   b. For the license activation method, keep **Automatically over the Internet** selected.

   c. Choose **Next**.

5. On the **Activation/Reactivation Succeeded** page, choose **Finish**.

Create a PDM file vault

1. Start PDM Server Administration. To do so, choose **Start**, **SolidWorks PDM**, **Administration**.

2. In the navigation pane, under **SOLIDWORKS PDM Administration**, right-click the name of your SOLIDWORKS PDM Professional server, and then choose **Create new vault**.

3. The Archive Server Configuration wizard **Welcome** page opens. Choose **Next**.

4. On the **Choose Vault Type** page, choose **Solidworks PDM Professional Vault**, and then choose **Next**.
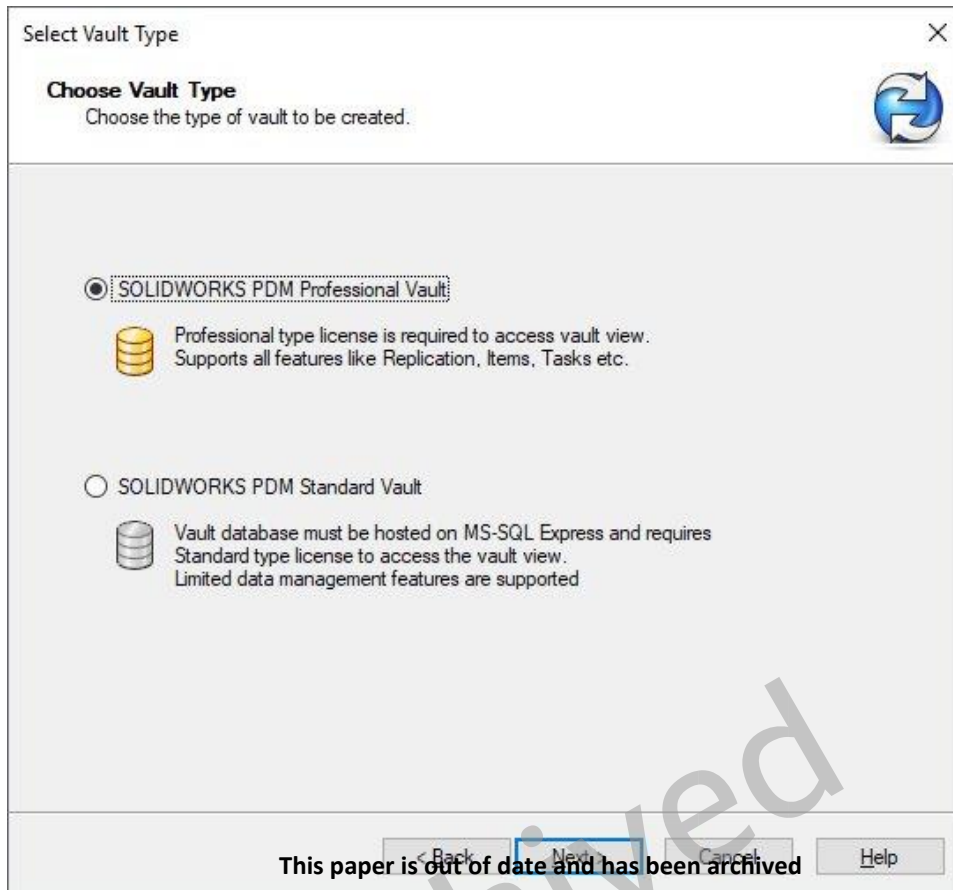
Figure 16: SOLIDWORKS PDM Archive Server Configuration Wizard: Choose vault type

5. On the **Choose vault name** page, type a name and description for your vault, and then choose **Next**.

6. On the **Select vault archive folder** page, select the archive folder where you want to store the vault archives for the SOLIDWORKS PDM Professional server.
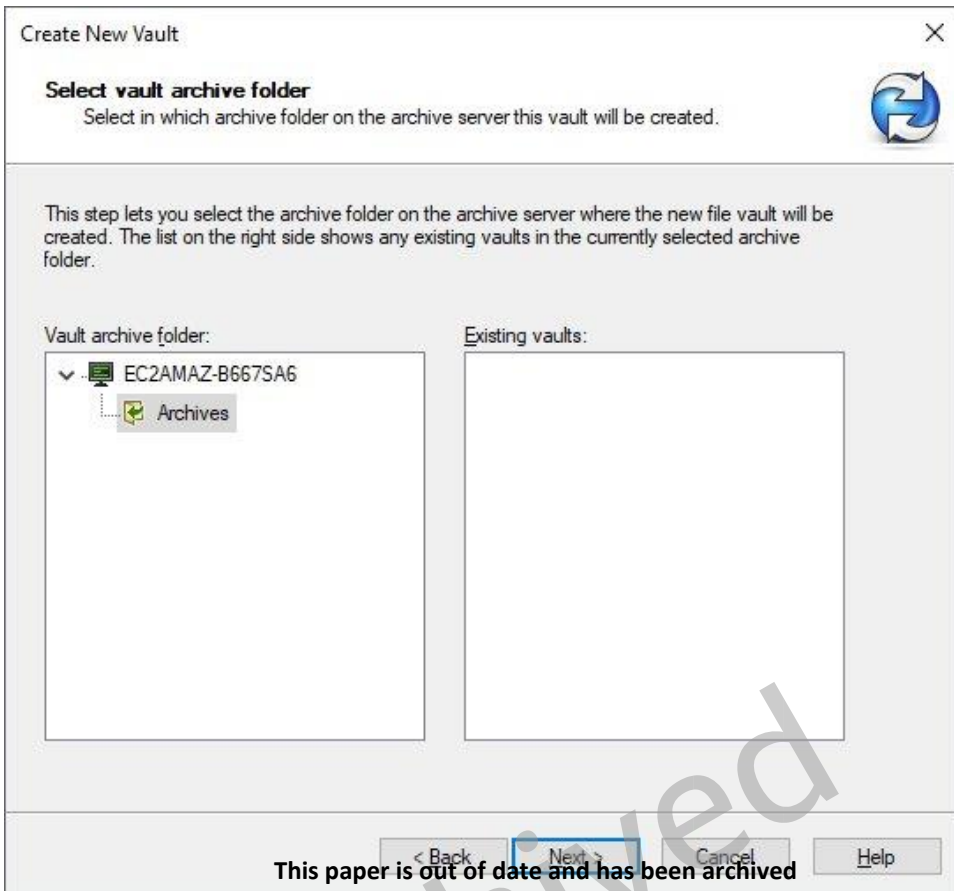
Figure 17: SOLIDWORKS PDM Archive Server Configuration Wizard: Select vault archive folder

7. On the **Choose database** page, in **Select MS-SQL database server**, enter the DNS name of the SOLIDWORKS PDM Professional server instance.

Note

If you are prompted to provide your SQL Server credentials, specify the same login name (**swpdm**) and the password that you specified when you completed the steps in the SQL Server Configuration section of this guide.
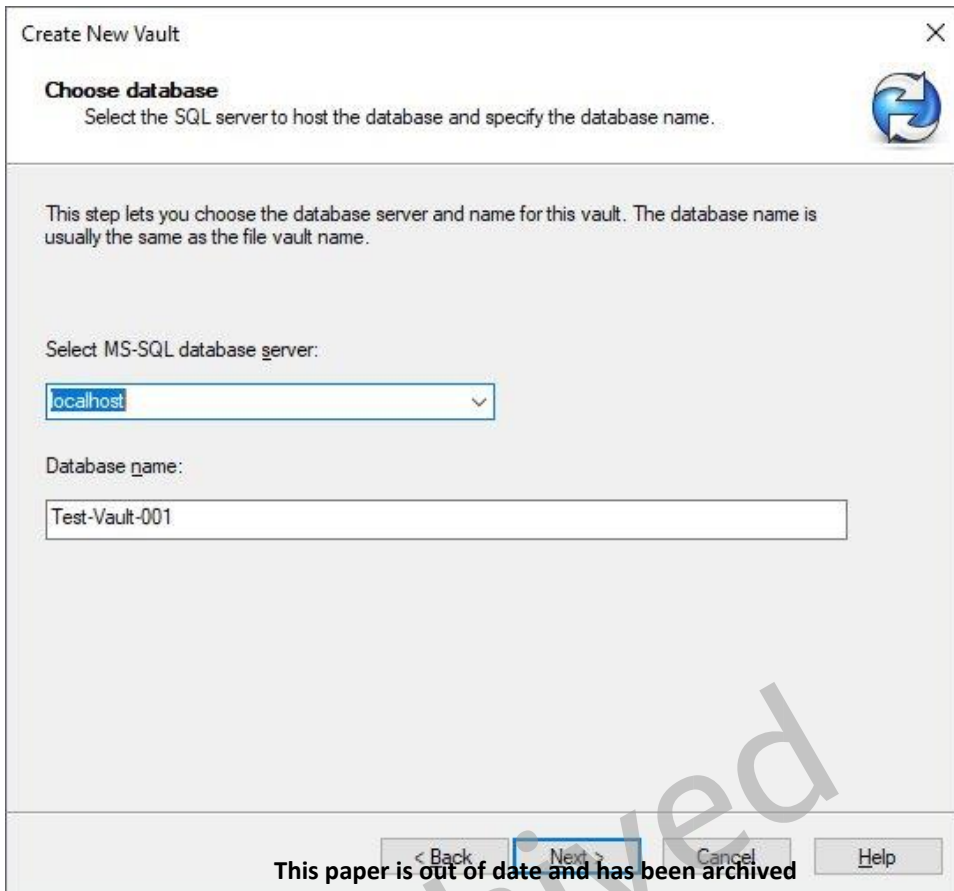
Figure 18: SOLIDWORKS PDM Archive Server Configuration Wizard: Choose SQL Server database

8. Choose **Next**.

9. On the **License Server for Vault** page, choose **Add** to add a new license
    server.

10. In the **Add Server** dialog box, for the server name, type the DNS name of the
    the SOLIDWORKS PDM Professional server instance. For example:

    25734@localhost

11. Choose **OK**, and then choose **Next**.

12. For the remaining wizard pages, keep the default values.

13. On the **Review information** page, review the settings and verify that your
    configuration is correct. When you're done, choose **Finish**.

14. On the **Completed** page, a message confirms that the new file vault has been
    created successfully. Choose **Close**.

15. After the vault is created, it displays in the navigation pane of the SOLIDWORKS PDM Administration window. Select the vault.

16. If you are prompted to accept the SOLIDWORKS PDM License Agreement, choose **Accept**.

17. After you accept the License Agreement, the login page for the vault displays. After you log in, you can create additional vault users as required.
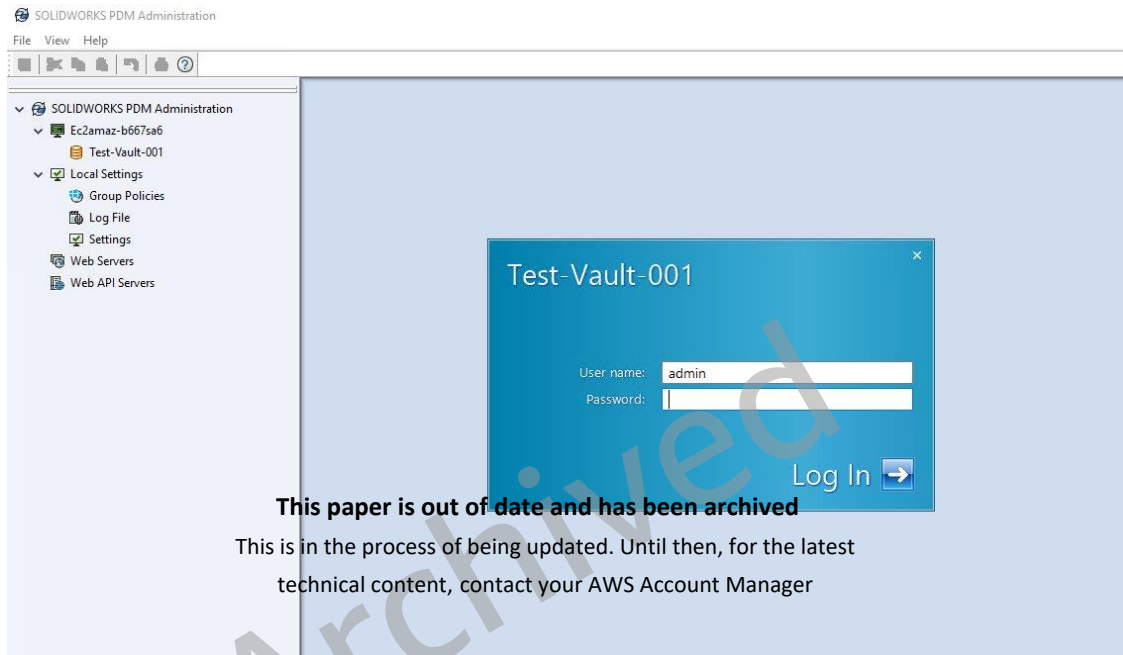
Figure 19: SOLIDWORKS PDM Administration login page

18. Close SolidWorks PDM Administration.

Step 4: Create an AppStream 2.0 image builder

AppStream 2.0 uses EC2 instances to stream applications. You launch instances from base images, called *image builders*, which AppStream 2.0 provides. To create your own custom image, you connect to an image builder instance, install and configure your applications for streaming, and then create your image by creating a snapshot of the image builder instance.

To install and configure applications to stream to your users, you must create an image builder instance as described in the following procedure.

Deploy an image builder instance to install applications

1. Open the AppStream 2.0 console at
   https://console.aws.amazon.com/appstream2.

2. If you have not previously configured any AppStream 2.0 settings, the following
   page displays:
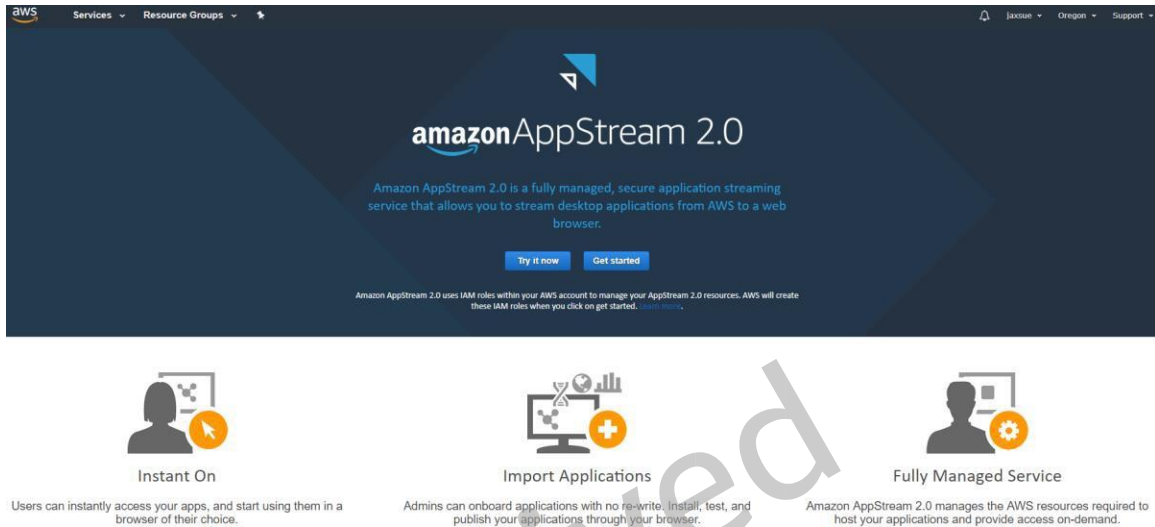
This paper is out of date and has been archived

Figure 20: The AppStream 2.0 first experience page

This is in the process of being updated. Until then, for the latest
technical content, contact your AWS Account Manager

Note: If the AppStream 2.0 navigation page displays instead, skip to step 5.

3. Choose **Get started**.

4. In the lower right corner of the page, choose **Skip** (this guide describes a
   different process for getting started with AppStream 2.0).
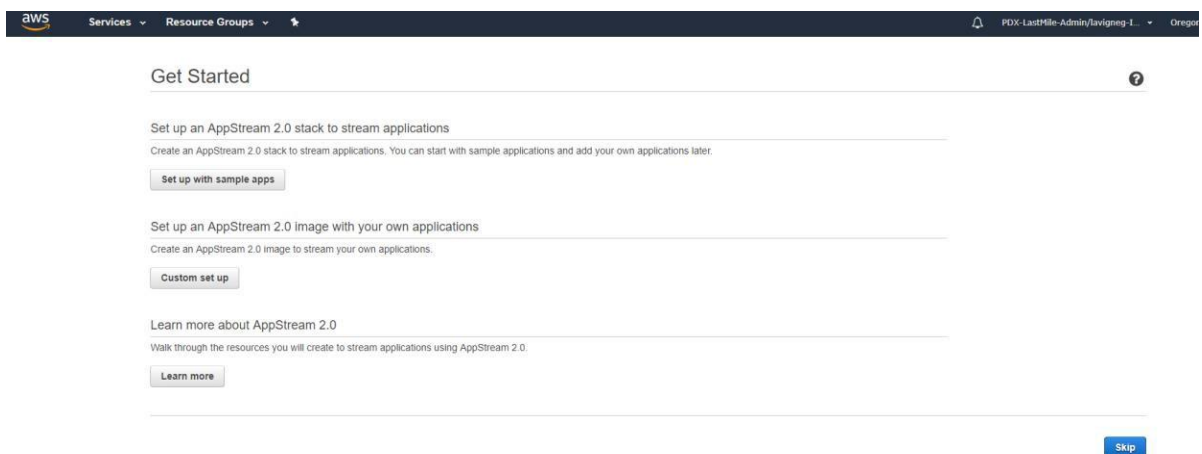
*Figure 21: AppStream 2.0 **Get Started** page*

5. In the navigation pane, choose **Images**, **Image Builder**, **Launch Image Builder**.

6. In the **Step 1: Choose Image** window, in the **Instance family** list, choose **Graphics Design**.

7. Select an image builder with the name **AppStream-Graphics-Design-***OperatingSystemVersion*-*mm-dd-yyyy*, where:

   OperatingSystemVersion represents one of the following Microsoft Windows operating systems: Windows Server 2012R2, Windows Server 2016, or Windows Server 2019.

   mm-dd-yyyy represents the most recent date.

   Base images are Amazon Machine Images (AMIs) that contain software configurations specific to the Windows platform. For AppStream 2.0, each base image includes the AppStream 2.0 agent and the latest version of one of the following Microsoft Windows operating systems: Windows Server 2012 R2, Windows Server 2016, or Windows Server 2019. You use this base image to create a custom image that includes your own applications.

Figure 22: Choosing an image builder in the AppStream 2.0 console

8. At the bottom of the page, choose **Next**.

9. In **Step 2: Configure Image Builder**, configure the image builder options as described in the following table. When you're done, choose **Review**.

Option	Value
Name	Enter a unique name for the image builder, such as *SOLIDWORKSPDM_ImageBuilder_v1_mm-dd-yyyy*. You can use any of the following characters: a-Z,0–9,-,_,. Note: The name cannot begin with "Amazon," "AWS," or "AppStream."
Display Name	Enter a user-friendly name to display in the console, such as *SOLIDWORKS PDM Image Builder v1 <Month> <Year>*.
Tags	Skip this option.
Instance Type	Choose **Graphics Design**.
Instance Family	Select **stream.graphics-design.xlarge** from the list of available instance types.
VPC Endpoints (Advanced)	Skip this option.
IAM role (Advanced)	Skip this option.

Choose **Next** to continue to **Step 3. Configure Network** and then type the following information

Option	Value
Default Internet Access	Make sure that this option is not selected.
VPC	Choose the **SolidWorksPDM** VPC*.*
Option	**Value**
Subnet 1	Choose the subnet with the IP address range 10.192.20.0/24 (**SOLIDWORKSPDM Private Subnet AZ1**).
Security group(s)	Choose the security group that is associated with the EC2 instance that is functioning as the SOLIDWORKS PDM Professional server and SolidNetwork Licensing server. The name follows this format: launch-wizard-<*number*>
Active Directory Domain (Optional)	Do **not** configure any options.

10. Choose **Review**, and confirm the details for the image builder. To change the configuration for any section, choose **Edit** and make your changes.

11. After you finish reviewing the configuration details, choose **Launch**.

   Important

   If an error message notifies you that you don't have sufficient limits to create the image builder, submit a limit increase request through the Service Quotas console. For more information, see [AWS service quotas](#).

12. The process of creating the image builder takes about 15 minutes to complete. During this process, the status of the image builder displays as **Pending** while AppStream 2.0 provisions the necessary resources.

13. Select the **Refresh** icon periodically to update the image builder status. After the status changes to **Running**, the image builder is ready to use and you can create a custom image.

   Note

   Charges accrue for an image builder instance while it is running, even if no user is actively connected. You can stop or delete the image builder at any time. No user fees are incurred when users connect to an image builder. For more information, see [AppStream 2.0 Pricing](#).

Step 5: Install and configure SOLIDWORKS software on your AppStream 2.0 image builder

Now that you have provisioned an image builder, you can use it to install and configure the SOLIDWORKS application that you plan to stream to users. In addition, you must also install the SOLIDWORKS PDM Client on your image builder and configure a vault view.

First, you must establish a remote connection to the image builder instance to install and configure SOLIDWORKS software.

Connect to the image builder instance

1. Open the AppStream 2.0 console at
   https://console.aws.amazon.com/appstream2.

2. In the navigation pane, choose **Images**, **Image Builder**.

3. Select the image builder instance that you created earlier
   (*SOLIDWORKSPDM_Image_v1_mm-dd-yyyy*). Verify that its status is **Running**
   and choose **Connect**.

   Note

   If the status is **Stopped**, select the instance, and choose **Actions**, **Start**. Select
   the **Refresh** icon periodically to update the instance list until the status is
   Running.

4. The new browser tab opens, displaying options for logging into the image
   builder instance. Choose **Local User**, **Administrator**.

   Local User

   Choose a local user account to install and configure apps. After you install
   your apps, open Image Architect with guidance to start the image
   creation process.

   This paper is out of date and has been archived

   This is in the process of being updated. Until then, for the latest
   technical content, contact your AWS Account Manager

   Administrator — Choose **Administrator** to install your apps on the
   image builder and create an image.

   Template User — Choose **Template User** to create the default app
   and Windows settings.

   Test User — Choose **Test User** to launch your apps and verify
   their settings.

   Figure 23: Image builder login

   Note: If a new browser tab does not open, configure your browser to allow pop-
   ups from https://console.aws.amazon.com/.

5. After a few moments, you are connected to the image builder instance with
   administrator rights.

Install SOLIDWORKS

1. On the image builder desktop, open Firefox and sign in to the SOLIDWORKS customer
   portal at https://customerportal.solidworks.com.

2. In the **DOWNLOAD** section of your account page, choose **Downloads and Updates**.

3. On the **Downloads** page, in the **Select Version** list, choose **2020**.

4. Under **Product**, select the **SOLIDWORKS Products** link for **Service Pack 4**, released **07/27/2020**.

5. On the **SOLIDWORKS Download EULA** page, choose **Accept Agreement & Continue**.

6. On the **Download and Install SOLIDWORKS Products Using the Installation Manager** page, choose the **Download** link to download **SOLIDWORKS 2020 Service Pack 4.0**.

7. Download the **SolidWorksSetup.exe** zip file to an accessible location on the image builder.

8. Extract the contents of the downloaded zip file to a known file path and open the **setup.exe** file to start **SolidWorks Installation Manager**.

9. On the **Welcome to the SOLIDWORKS Installation Manager** page, under **Specify the type of installation**, choose **Install on this computer**.

10. Choose **Next**.

11. On the serial number screen, select the products that you want to install. Where required for each product, enter your SOLIDWORKS license key.

12. Choose **Next**.

13. On the **Summary** page, select the check box to acknowledge that you accept the terms of the SOLIDWORKS License Agreement.
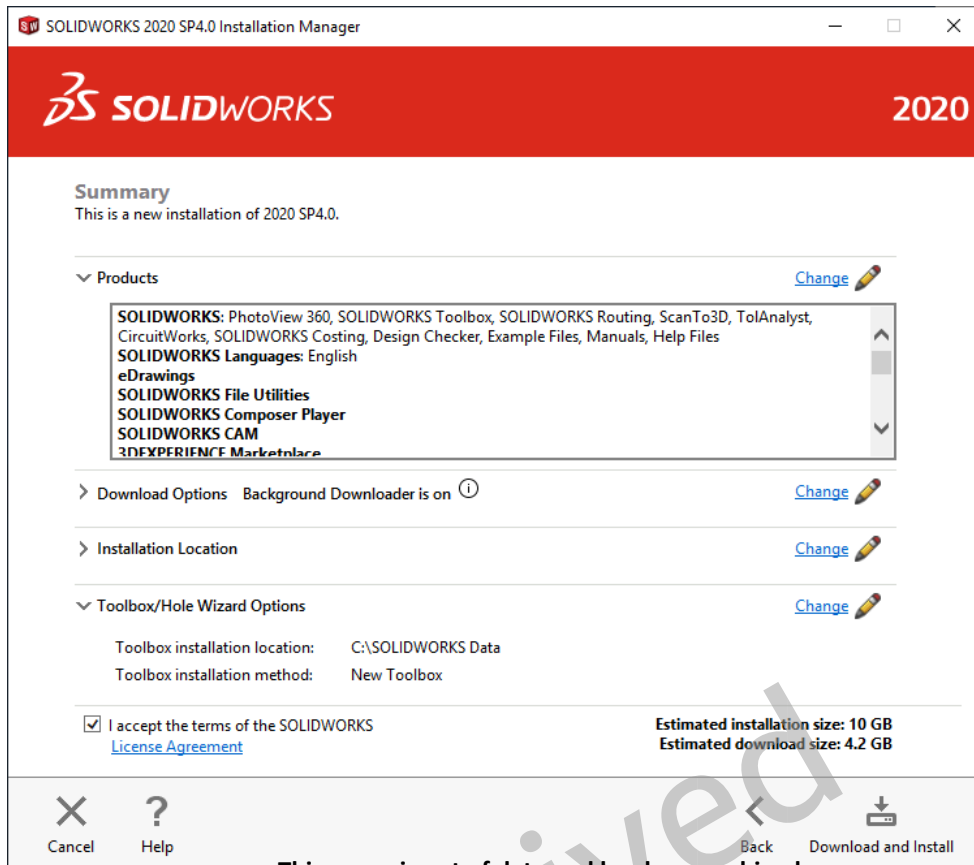
Figure 24: SOLIDWORKS installation

14. On the bottom right of the page, choose **Download and Install**.

15. When prompted, enter the port number and server DNS address for your SolidWorks
Licensing Server. For example:

25734@ip-192-0-2-254.example.test-net-1

16. After the installation completes, on the lower right of the **Installation is Complete** page,
choose **Finish.**

17. When prompted, restart the instance.

After you install SOLIDWORKS, you must run the **SolidWorks Installation Manager**
again. This time, you'll install the SOLIDWORKS PDM Client.

Install the SOLIDWORKS PDM Client

1. Reconnect to the image builder, open the **SolidWorks Installation Manager**.

2. On the **Welcome to the SOLIDWORKS Installation Manager** page, under **Specify the type of installation**, choose **Install server components**, and select the check box for **Install SOLIDWORKS PDM Server components on this computer**.

3. **Note**: When you select this check box, if the **Install SolidNetwork License Manager** check box is selected as well, clear (de-select) the **SolidNetwork License Manager** check box.

4. Choose **Next**.

5. On the **Summary** page, for **SOLIDWORKS PDM Server**, select the **Change** link.

6. On the **SOLIDWORKS PDM Server** page, under **Select Features**, select the **Client** check box.

7. On the lower right of the page, choose **Back to Summary**.

8. On the bottom left of the **Summary** page, select the check box to acknowledge that you accept the terms of the SOLIDWORKS License Agreement.

9. On the bottom right of the page, choose **Download and Install**.

10. On the lower right of the **Installation is Complete** page, choose **Finish**.

11. After the installation finishes, restart the instance when you are prompted to do so.

Configure a vault view on your AppStream 2.0 image builder

1. Reconnect to your image builder and open **SOLIDWORKS PDM View Setup**. To do so, choose the Windows **Start** button, and then choose **SOLIDWORKS PDM**, **View Setup**.

2. A wizard opens to guide you through the steps for configuring a local vault view. On the **Welcome** page, choose **Next**.

3. On the **Select archive server(s)** page, choose **Add**.

4. In the **Add server manually** dialog box, in **Server name**, type the DNS name of your PDM Server.
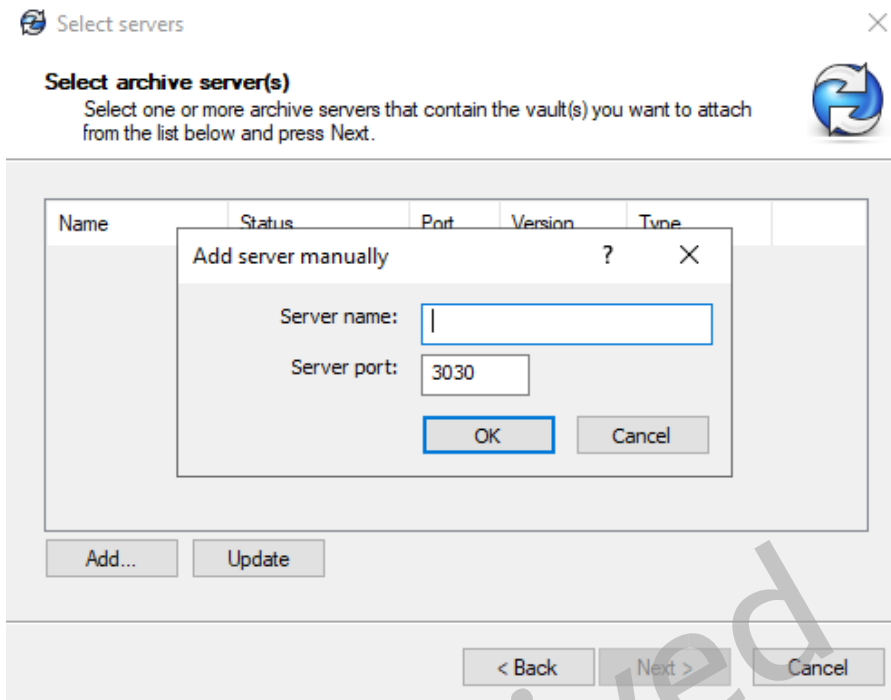
Figure 25: SOLIDWORKS PDM View: Select archive server(s)

5. Choose **OK**.

6. When you are prompted to enter a user name and password, enter the credentials for the Windows Administrator account of the SOLIDWORKS PDM Professional server instance.

7. On the **Select vault(s)** page, select the check box for the vault for which you want to create a view.
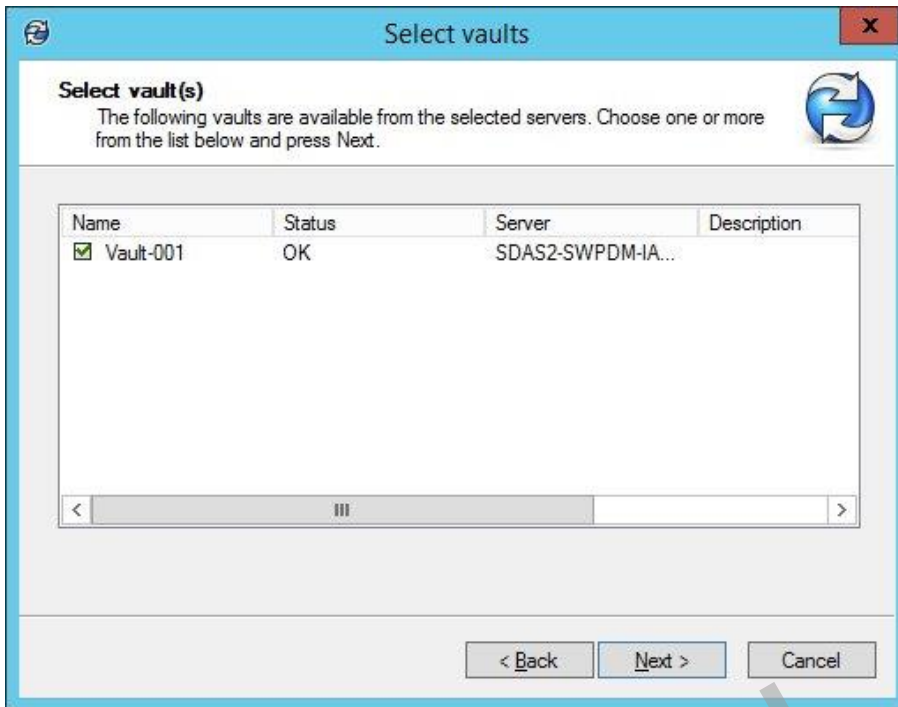
Figure 26: SOLIDWORKS PDM View: Select archive server(s)

8. Choose **Next**.

9. On the **Select location** page, under **Attach location**, browse to the location where you want to create the view. Make sure that the location you specify is accessible by all users.

10. Under **Attach type**, verify that **For all users on this computer** is selected.
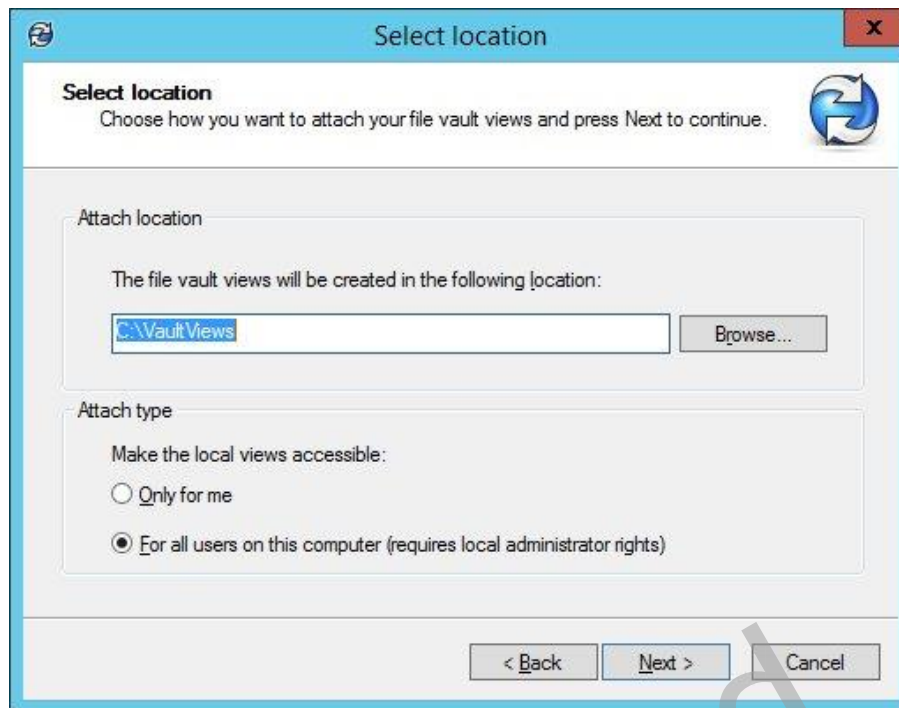
11. Choose **Next**.

12. On the **Review information** page, review the settings and verify that your configuration is correct. When you're done, choose **Finish**.

13. Verify that you can access the vault view that you just created. To do so, open the VaultViews folder and double-click the vault view. When prompted, enter your vault credentials.

Disable Internet Explorer Enhanced Security Configuration

SOLIDWORKS applications use Internet Explorer to open http links embedded in applications. When you launch one of these links, Internet Explorer displays a warning message for every webpage that it opens. This behavior is due to Internet Explorer ESC, a security setting that decreases your exposure to potential attacks that can occur through web content and application scripts. You can safely disable this setting.

1. On your image builder, open Server Manager. Choose the Windows **Start** button, and then choose **Server Manager**.

2. In the left navigation pane, choose **Local Server**.

3. In the right properties pane, choose the **On** link next to **IE Enhanced Security Configuration**.

4. In the **Internet Explorer Enhanced Security Configuration** dialog box, choose the **Off** option for both **Administrators** and **Users**, and then choose **OK**.

5. In the upper right of the image builder desktop, choose **Admin Commands, Switch User**.

6. This disconnects your current session and opens the login menu. Log in to the image builder as **Template User**.

7. Open Internet Explorer and reset your settings by doing the following:

8. In the upper right of the Internet Explorer browser window, choose the **Tools** icon, and then choose **Internet options**.

9. In the **Internet Options** dialog box, choose the **Advanced** tab, then choose **Reset**.

10. When prompted to confirm your choice, choose **Reset** again.

11. When the **Reset Internet Explorer Settings** message displays, choose **Close.**

12. Choose **Admin Commands, Switch User**, and log back in as **Administrator**.

13. On the image builder desktop, open **Image Assistant**.

14. Choose **Next** to proceed to the **Configure Apps** tab.

15. On the **Configure Apps** tab, choose **Save settings.** Doing so saves the Internet Explorer ESC settings that you just configured when logged in as a Template User. These settings are saved as the default user settings.

16. Choose **Switch user**, **Test User**.

17. Open Internet Explorer.

18. Confirm that the message "Internet Explorer Enhanced Security configuration is not enabled" displays on the home page. Browse to any website to confirm that Internet Explorer is not displaying any blocking prompts.

Step 6: Use Image Assistant to create an AppStream 2.0 image

At this point, you have launched an image builder instance and installed SOLIDWORKS on the image builder. Now you'll prepare the applications for streaming, optimize them for streaming performance, and create your image.

In this section, you'll do the following:

- Create an application catalog by using Image Assistant.

- Test the applications by using a local user account that has the same permissions that end users will have in their streaming sessions.

- Optimize the applications' launch performance.

- Configure the image.

- Finish creating the image.

Create your AppStream 2.0 application catalog

The process of creating an AppStream 2.0 application catalog includes specifying the name, display name, executable file to launch, and icon to display for each application that you plan to stream.

1. From the image builder desktop, open Image Assistant.
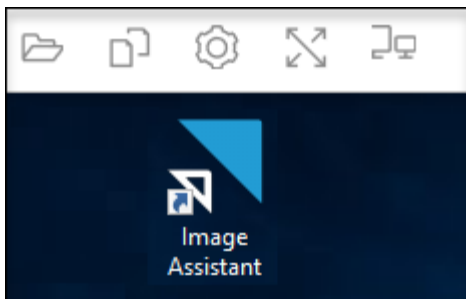
Figure 28: The AppStream 2.0 Image Assistant

2. In Image Assistant, on the **Add Apps** tab, choose **Add App**.
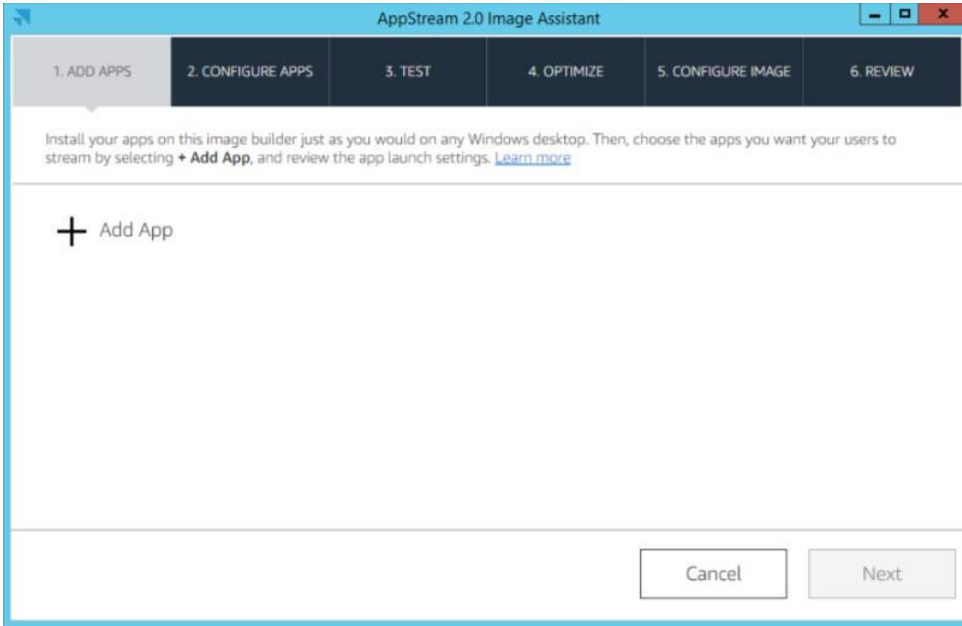
*Figure 29: The **Add Applications to Image** dialog box in Image Assistant*

3. Navigate to the location of the SOLIDWORKS executable file, select it, and then choose **Open**.

4. In **App Launch Settings**, review the following application properties and modify any as needed. When you are done, choose **Save**.

Option	Value
Name	A unique name for the application, in this case SOLIDWORKS_x64_v*W.X.Y.Z* (where *W.X.Y.Z* matches the version number of the installer).
Display Name	The name of the application that displays for your users. Enter **SOLIDWORKS**.
Launch Path	The location of the executable file for your application. Keep the default value.
Icon Path	The location of your application icon. Accept the default value of C:\ProgramData\Amazon\Photon\AppCatalogHelper<*GUID*>.<*file name extension*>.
Launch Parameters	Command line arguments that can be passed to the application at launch. Leave this blank.
Working Directory	Leave this blank.

5. SOLIDWORKS is now added to the application catalog that displays for your users.

6. Choose **Next**, and then choose **Next** again to skip the **Configure Apps** tab and proceed to the **Test** tab in Image Assistant.

Test your applications by using a local user account

An image builder includes a test user account that lets you test your applications by using the same policies and permissions as your users. Follow these steps to confirm that your applications open correctly.

1. On the **Test** tab, choose **Switch User**, **Test User**.

   You are now logged into the same Windows Server instance as a local user who has regular (non-administrative) user rights.

2. Open Image Assistant. In **Test Apps**, the SOLIDWORKS application displays.

3. Choose the application to open it. After SOLIDWORKS opens and loads fully, close the application.

4. After you complete the testing, choose **Switch user**.

5. On the **Local User** tab, choose **Administrator** to reconnect to the image builder with administrative rights.

6. On the Image Assistant **Test** tab, choose **Next**.

Optimize the launch performance of your applications

During this step, Image Assistant opens your application, identifies launch dependencies, and performs optimizations to ensure that the application launches quickly.

1. On the **Optimize** tab, choose the SOLIDWORKS application, and then choose **Launch**.

2. Wait for SOLIDWORKS to start completely. An Image Assistant message notifies you when this occurs.

3. After you complete the first run experience for the application and verify that it functions as expected, choose **Continue**.

Configure the image

1. On the **Configure Image** tab, configure the image options as described in the following table. When you're done, choose **Next**.

Option	Value
Name	Enter a unique name for the image, such as *SOLIDWORKSPDM_Image_v1_mm-dd-yyyy*. You can use any of the following characters: a-Z,0–9,-,_,. Note: The name cannot begin with "Amazon," "AWS," or "AppStream."
Display name	Enter a user-friendly name to display in the console, such as *SOLIDWORKS PDM Image v1 <Month> <Year>*.
Description	You can enter an optional description for the image, such as *Image containing SOLIDWORKS PDM applications. Created on mm-dd-yyyy by <your initials or name>*.
Tags	You can add one or more optional tags for the image. For more information, see Tagging Your AppStream 2.0 Resources.
Always use latest agent version	Keep this check box selected so that streaming instances that are launched from your image always include the latest AppStream 2.0 features, performance improvements, and security updates that are available from AWS. For more information, see AppStream 2.0 Agent Release Notes.

Finish creating the image

Complete the following steps to disconnect from the remote session and start the image creation process.

1. Review the image details and choose **Disconnect and Create Image**.

2. The remote session disconnects within a few moments.

3. After the remote session disconnects, the **Failed to reserve a session** message appears. Close the message, and then close the browser tab.

    Return to the [Amazon AppStream 2.0 console](#) and choose **Images**, **Image Registry**. While your image is being created, the image builder status in the console appears as **Pending**. While your image is being created, you cannot connect to it.

4. Select the **Refresh** icon periodically to update the status. After your image is created, the image status changes to **Available** and the image builder is automatically stopped.

    Note

    After you create an image, you can't change it. To add other applications, update existing applications, or change image settings, you must start and reconnect to the image builder that you used to create the image, or, if you deleted that image builder, launch a new image builder that is based on your image. Then, make your changes and create a new image.

Step 7: Provision a fleet

An AppStream 2.0 fleet defines the hardware, network, Active Directory (if applicable), and scaling configuration for your application streaming infrastructure. For more information, see [Fleets and Stacks](#).

In this section, you'll do the following:

- Provide details for your fleet.
- Choose an image.
- Configure the fleet.
- Configure the network.

Provide fleet details

1. Open the AppStream 2.0 console at https://console.aws.amazon.com/appstream2.

2. In the navigation pane, choose **Fleets**, **Create Fleet**.

3. For **Step 1: Provide Fleet Details**, configure the fleet options described in the following table. When you're done, choose **Next**.

Option	Value
Name	Enter a unique name for the fleet, such as *SOLIDWORKSPDM_Fleet_v1_mm-dd-yyyy*. You can use any of the following characters: a-Z,0–9,-,_,. Note: The name cannot begin with "Amazon," "AWS," or "AppStream."
Display Name	Enter a user-friendly name to display in the console, such as *SOLIDWORKS PDM Fleet v1 <Month><Year>*.
Description	You can enter an optional description for the fleet, such as *Fleet for SOLIDWORKS PDM. Created on mm-dd-yyyy by <your initials or name>*.
Tags	You can add one or more optional tags for the fleet.

4. **For Step 2: Choose an image**, choose the image that you created, scroll to the bottom of the page, and then choose **Next**.

Configure the fleet

1. **For Step 3: Configure fleet**, in **Choose instance type**, you define the hardware configuration for each of the instances that make up your fleet. For this exercise, leave the **Graphics Design** instance type selected, and then choose **stream.graphics-design.xlarge**. For more information, see Amazon AppStream 2.0 Instance Families.

2. Under **Fleet Type details**, choose a fleet type that suits your needs. The fleet type determines the availability of streaming instances and affects your costs. You can choose either of the following:

   - **Always-On**: Instances run all the time, even when no users are streaming applications. When this option is selected, instances are immediately available for the next user to connect to.
   - **On-Demand**: Instances run only when users are streaming applications. Idle instances that are available for streaming are in a stopped state. When this option is selected, a user must wait for one to two minutes for an instance to start up.

3. For this exercise, choose **On-Demand.**

4. Under **User session details**, define the maximum amount of time that users can be connected to streaming sessions and how long streaming sessions should remain active after users disconnect.

   - **Maximum session duration in minutes** defines how long users' streaming sessions can remain active. If users are still connected to a streaming session five minutes before this limit is reached, they are prompted to save any open documents before being disconnected. Type **480**, which sets the maximum session duration to 8 hours.
   - **Disconnect timeout in minutes** defines how long user streaming sessions can remain active after users disconnect. If users try to reconnect to the streaming session after a disconnection or network interruption within this time interval, they are connected to the previous session. After the disconnect timeout expires, the session is terminated, and the user must start a new session to reconnect. Keep the default setting of **15**.
   - **Idle disconnect timeout in minutes** defines how long users can be idle (inactive) before they are disconnected from their streaming session and the **Disconnect timeout in minutes** time interval begins. Users are notified before they are disconnected due to inactivity. Keep the default setting of **15**.

5. Under **Fleet capacity**, set **Minimum capacity** to 2 and **Maximum Capacity** to 4.

   Notes

   Capacity is defined in terms of the number of instances within a fleet and, consequently, every unique user streaming session that is served by a separate instance.

   The *minimum capacity* for your fleet is the minimum number of users who are expected to stream at the same time.

   The *maximum capacity* for your fleet is the maximum number of users who are expected to stream at the same time.

6. Under **Stream view**, keep the default value, **Application**, to display only the windows of applications opened by users.

7. Skip the **Scaling details (Advanced)** and **IAM role (Advanced)** sections, and choose **Next**.

Configure the network

1. For **Step 4: Configure Network**, make sure that the **Default Internet Access** check box is not selected. You don't need to select this option because you already configured a VPC with a NAT gateway to provide internet access.

2. For **VPC**, select **vpc-xxxxxxxx (SOLIDWORKSPDMVPC)**.

3. For **Subnet 1**, choose **subnet-xxxxxxxx | (10.192.20.0/24)**. This is the SolidWorksPDM Private Subnet1.

4. For **Subnet 2**, choose **subnet-xxxxxxxx | (10.192.21.0/24)**. This is the SolidWorksPDM Private Subnet2.

5. For **Security group(s)**, select the security group that is associated with the EC2 instance that is functioning as the SOLIDWORKS PDM Professional server and SolidNetwork Licensing server. The name will follow this format: launch-wizard-<*number*>

6. Skip the **Active Directory Domain (Optional)** section.

7. Choose **Next**.

8. **For Step 5: Review**, confirm the fleet configuration details. To change the settings for any section, choose **Edit**, and make the needed changes. After you finish reviewing the configuration details, choose **Create**.

9. In the pricing acknowledgement dialog box, select the acknowledgement check box, and choose **Create** to begin provisioning your fleet with the initial set of running instances.
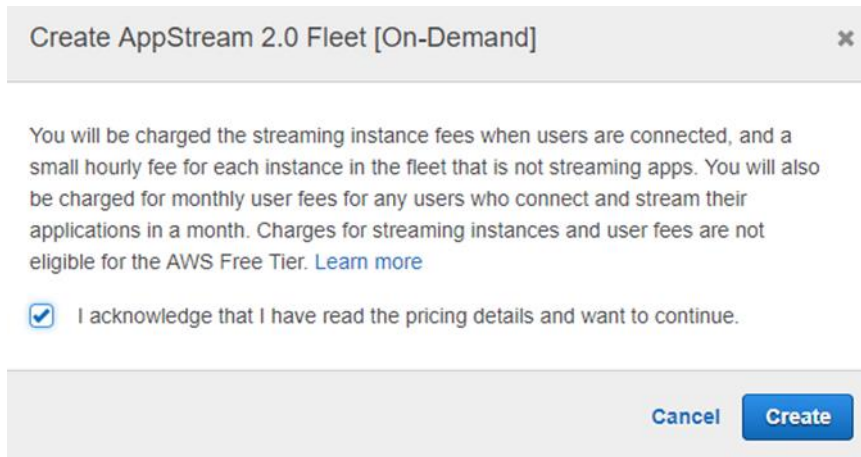
Figure 30: The AppStream 2.0 streaming instance pricing acknowledgement dialog box

Note

If an error message notifies you that you don't have sufficient limits to create the fleet, submit a limit increase request through the Service Quotas console. For more information, see [AWS service quotas](#).

10. Fleet provisioning usually takes 10 minutes to finish. While your fleet is being created and fleet instances are provisioned, the status of your fleet displays as **Starting** in the **Fleets** list. Choose the **Refresh** icon periodically to update the fleet status until the status is **Running**.

11. After the status changes to **Running**, the fleet is available. After your fleet is available, you can create a stack and associate your stack with the fleet.

Step 8: Create an AppStream 2.0 stack and a streaming URL

An AppStream 2.0 stack consists of a fleet, user access policies, and storage configurations. You create a stack to start streaming applications to users.

In this section, you'll do the following:

- Provide details for your stack and associate your stack with a fleet.

- Enable persistent storage for the stack.

- Create a streaming URL.

Provide stack details and associate the stack with a fleet

1. Open the AppStream 2.0 console at https://console.aws.amazon.com/appstream2.

2. In the navigation pane, choose **Stacks**, **Create Stack**.

3. For **Step1: Stack Details**, configure the stack options as described in the following table.

Option	Value
Name	Enter a unique name for the stack, such as *SOLIDWORKSPDM_Stack_v1_mm-dd-yyyy*. Use any of the following characters: a-Z,0–9,-,_. Note: The name cannot begin with "Amazon," "AWS," or "AppStream."
Display Name	Enter a user-friendly name to display in the console, such as *SOLIDWORKS PDM Stack v1 <Month><Year>.*
Description	You can enter an optional description for the stack, such as *Stack for SOLIDWORKS PDM. Created on mm-dd-yyyy by <your initials or name>.*
Redirect URL	An optional URL to which users are redirected at the end of their streaming session. For example: *https://www.solidworks.com*
Fleet	Choose the *SOLIDWORKSPDM_Fleet_v1_mm-dd-yyyy* fleet that you created.
Tags	You can add or more optional tags for the stack.

4. Skip **VPC Endpoints (Advanced)** and **Embed AppStream 2.0 (Optional)**, and choose **Next**.

Enable persistent storage for the stack

1. For **Step 2: Enable Storage**, verify that the **Enable Home Folders** check box is selected, and then choose **Next**.

When this check box is selected for an AppStream 2.0 stack, users of the stack are presented with a persistent storage folder in their AppStream 2.0 sessions.

Data stored by users in their home folders is backed up to an Amazon S3 bucket that is automatically created in your AWS account. For more information, see [Persistent Storage with AppStream 2.0 Home Folders](#).

2. For **Step 3: User Settings**, keep the default options.

3. Choose **Review**.

4. For **Step 4: Review**, confirm the stack configuration details. To change the settings for any section, choose **Edit** and make the needed changes. After you finish reviewing the configuration details, choose **Create**. After a few moments, the **Stacks** list reappears. Your stack is listed with a status of **Active**.

Create a streaming URL

To test application streaming without setting up users, create a temporary URL that you can paste into a new browser window.

1. In the navigation pane, choose **Stacks**.

2. For **Stacks**, select the stack that you just created.

3. Choose **Actions**, **Create streaming URL**.

4. In the **Create streaming URL** dialog box, configure the URL as described in the following table. When you're done, choose **Get URL**.

Option	Value
User id	An ID for the user of the streaming URL. For this exercise, type **SOLIDWORKSTestUser1**.
	This entry is not connected to Active Directory or an LDAP type of directory service. It is an identifier for creating a unique URL.
URL Expiration	The length of time that this URL is available to use. For this exercise, choose 1 hour.

5. The **Create streaming URL** dialog box refreshes, displaying the user ID that you entered and the URL that AppStream 2.0 generated for the user.

6. Choose **Copy Link** to copy the full URL to the clipboard, and then save the URL to an easily accessible location.

The **Create streaming URL** dialog box refreshes again, confirming that the link was copied to the clipboard. Close the **Create Streaming URL** dialog box.

Notes

Providing access to an AppStream 2.0 streaming session through a console-generated link as described in this procedure is for testing only.

In a production environment, several authentication and authorization options are available to provide your users with access to AppStream 2.0. These options include federation through SAML 2.0, the AppStream 2.0 user pool (a built-in identity management feature), and custom identity solutions. For more information, see Setting up SAML and AppStream 2.0 User Pools.

7. In a browser, open a new tab, paste the streaming URL into the address bar, and press **Enter**. AppStream 2.0 displays an application catalog page that lists the SOLIDWORKS application that you have configured for streaming.

8. Choose the SOLIDWORKS icon to stream the SOLIDWORKS application, and confirm that it functions as expected.

Step 9: Manage user access with an AppStream 2.0 user pool

An AppStream 2.0 user pool is a built-in identity management feature that you can use to enable users to access their streamed applications. Alternatively, you can use SAML to federate through Microsoft Active Directory or any other custom identity solution provider that supports SAML 2.0.

Note

This guide describes how to manage user access to AppStream 2.0 with the user pool. For information about configuring third-party SAML 2.0 identity provider solutions to work with AppStream 2.0, see AppStream 2.0 Integration with SAML 2.0.

To enable users in the user pool to open applications after they sign in to the AppStream 2.0 user portal, you must assign each user to at least one stack that

contains applications. After you assign the user to a stack, AppStream 2.0 sends an optional notification email to the user with instructions about how to access the stack and a URL. The user can access the stack by using the URL until you delete the stack or unassign the user from the stack.

In this section, you'll configure an AppStream 2.0 user pool and grant a user access to AppStream 2.0 by doing the following:

- Create a user in the user pool. AppStream 2.0 then sends a welcome email with instructions and a temporary password.

- Assign the stack that you created to the user.

Create a user

1. Open the AppStream 2.0 console at
   https://console.aws.amazon.com/appstream2.

2. In the navigation pane, choose **User Pool**, **Create User**.

   In the **Create User** dialog box, enter the information as described in the
   following table. When you're done, choose **Create User**.

Option	Value
Email	An active email address that you can access.
First name	The first name of the user.
Last name	The last name of the user.

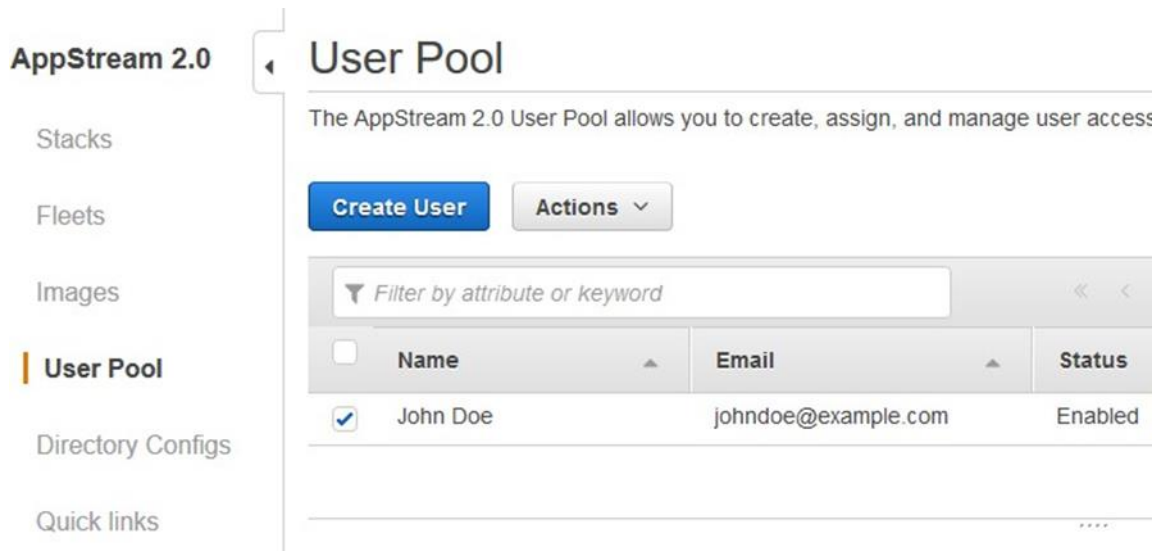3. After a few moments, the **User Pool** list refreshes, and the user is listed and enabled.

Figure 31: The **User Pool** dashboard displaying a newly created user

Assign a stack to the user

1. In the navigation pane, choose **User Pool**, and select the user that you created.

2. Choose **Actions**, **Assign stack**.

3. In the **Assign Stack** dialog box, for **Stack**, select the *SOLIDWORKSPDM_Stack_v1_mm-dd-yyyy* stack that you created earlier.

4. Keep the **Send email notification to user** check box selected.

5. Choose **Assign stack**.

Step 10: Test the AppStream 2.0 user experience

In the previous section, you added a user to the user pool by providing a name and an email address and then assigned a stack to the user. AppStream 2.0 sent an email to the email address after each action. To test the end user experience, sign in to AppStream 2.0 as the user that you created and start a streaming session.

1. Open the first notification email that you received, and open the **Login page** link. The AppStream 2.0 portal sign-in page opens in your browser.
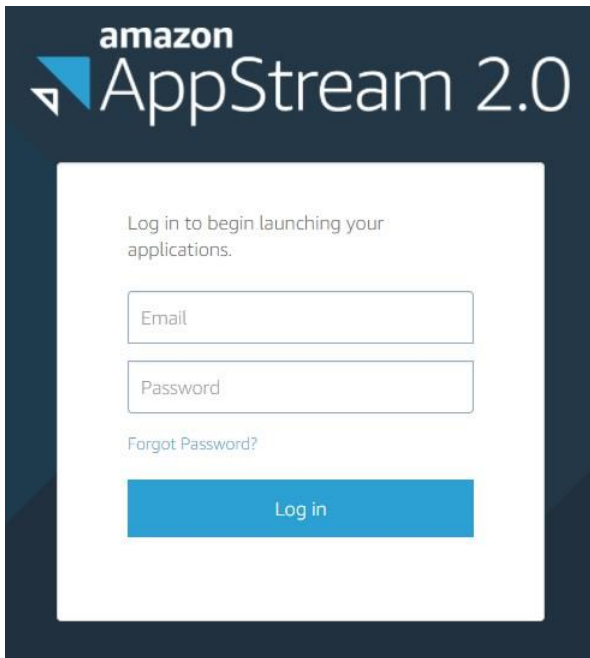
Figure 32: The AppStream 2.0 user login prompt

2. Type the email address for the user that you created and the temporary password provided in the email, and then choose **Log in**.

3. When prompted, type a new password, confirm it, and then choose **Set Password**. The AppStream 2.0 application catalog page opens, displaying the SOLIDWORKS application.

4. Choose the SOLIDWORKS application to begin streaming.

Appendix A. Clean up your AppStream 2.0 resources

Although you can continue to use this AppStream 2.0 environment, keep in mind that you pay for your running resources. For more information, see [Amazon AppStream 2.0](#) [Pricing](#).

Cleaning up the resources that you created frees up resources and helps you avoid unintended charges to your account.

Stop and delete your image builder

1. Open the AppStream 2.0 console at https://console.aws.amazon.com/appstream2.

2. In the navigation pane, choose **Images**, **Image Builder**.

3. Confirm whether the image builder that you created in Step 3 in this guide is in a stopped state. If not, select the image builder and choose **Actions**, **Stop**. If you created multiple image builders, repeat this step for each image builder that you created.

4. After the image builder has stopped, choose **Actions**, **Delete**. Repeat this step for each image builder that you created.

Revoke stack permissions for users in the user pool

1. In the navigation pane, choose **User Pool**.

2. Select the user you created in Step 9 in this guide and choose **Actions**, **Unassign stack**. This action revokes the stack permissions for the user.

Disassociate your fleets from your stack and delete your stack

1. In the navigation pane, choose **Stacks**.

2. Select the stack you created and choose **Actions**, **Dissociate Fleet.** This action dissociates the fleet from the stack.

3. To delete the stack, choose **Actions**, **Delete**.

Stop and delete your fleet

1. In the navigation pane, choose **Fleets**. Confirm whether the fleet that you created in Step 6 in this guide is in a stopped state. If not, select the fleet and choose **Actions**, **Stop**.

2. After the fleet has stopped, choose **Actions**, **Delete**.

Appendix B. Additional resources

For more information about AppStream 2.0, see:

- [Amazon AppStream 2.0 features](#)
- [Amazon AppStream 2.0 pricing](#)
- [Amazon AppStream 2.0 FAQs](#)
- [Amazon AppStream 2.0 Administration Guide](#)
- [Amazon AppStream 2.0 API Reference](#)
- [Amazon AppStream 2.0 CLI Command Reference](#)
- [Amazon AppStream 2.0: Try sample applications](#)
- [End User Compute: AppStream 2.0 hands-on-tutorials](#)
- [Amazon AppStream 2.0 resources](#)