Managing SOLIDWORKS Network Licenses

NOTES:
- These instructions are for network licensing only. For stand-alone licensing see the Managing Licenses-Standalone document
- The program that will manage network licencing (SolidNetwork License Manager) is to be installed on a server that is accessible to all client machines
  - The SOLIDWORKS installation media (downloaded media or DVDs) should be accessible from the server/location where SolidNetwork License Manager is to be installed
- Examples shown below come from SOLIDWORKS 2016 and 2017

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A. Pre-Requisites: Opening Firewall Ports for SolidNetwork License Manager (aka SNLM)

Before Installing SNLM on the server, key ports need to be opened in the Windows Firewall. SNLM uses ports 25734 and 25735. To open these ports, do the following....

1. Access Windows Firewall Settings by:
   a. clicking on the Windows button
   b. in the search box type Windows Firewall
   c. Select Window Firewall

2. In the left pane of the window that appears, click Advanced settings.
3. In the left pane of the window that appears, click Inbound Rules.
4. In the far right pane, under Actions, Inbound Rules, click New Rule.

5. In the New Inbound Rule Wizard, on the Rule Type screen, in the right pane, select Port and click Next.
6. In the right pane of the Protocol and Ports screen:
   a. Select TCP.
   b. Select Specific local ports and type 25734,25735 (with a comma separating the two numbers)
   c. Click Next.
7. In the right pane of the Action screen, select Allow the connection and click Next.
8. In the right pane of the Profile screen, uncheck Public and click Next.
9. In the Name screen:
   a. For Name, type the exception name – for example, Enable TCP ports for inbound SolidNetwork License Manager Traffic and click Finish.
   b. The wizard closes and the rule is added to the list of inbound rules. It is enabled by default.

Once the ports have been opened, then SNLM can be installed.
B. Installing SNLM

1. Run the SNLM Installation program using one of two methods. Choose either Option a. OR Option b. below…

   a. To run a standalone installation of SNLM…

      i. Run setup.exe from the swlicmgr sub folder of the install media and follow defaults

      ii. From the Welcome screen, click Next

      iii. From the Information License screen, enter the license(s) for your networked products and then click Next. If you have multiple licenses, separate the license numbers with a comma (no spaces)

      iv. From the Destination Folders screen, use the Change… button to change the installation directory of SNLM, or simply click Next to leave it as the default location.
v. From the Ready to Install the Program Screen, click **Install**

![Install Screen](image)

vi. Once the Installation is complete, click **Finish**.

![Finish Screen](image)

b. To Install SNLM via the SOLIDWORKS Installation Manager…

i. Run **setup.exe** from the main installation media folder to run Installation Manager

![Installation Manager Screen](image)

ii. From the Welcome screen, select the option shown below and then click **Next**. **NOTE:** Make sure all other checkboxes in the Server products section are **UNCHECKED**
iii. From the Options screen, enter the license(s) for your networked products and then click **Next**. If you have multiple licenses, separate the license numbers with a comma (no spaces)

![Screenshot of the Options screen]

iv. From the Summary window, ensure the background downloader is turned off. Click the second **CHANGE** related to Download Options and then uncheck **Use the background downloader for future service packs**. Click **Back to Summary** once complete

![Screenshot of the Summary window]
v. Finally, select the **No, thank you** button and then click **Finish**.

2. Once SNLM has been installed, the network license(s) need to be activated. Open SNLM on the server, and the system will automatically prompt the user to activate the license(s). Click **Yes** and then follow the steps outline in **Section D**, starting at **Step 4**.

**NOTE:** If a firewall exists on the server that houses SNLM, It is recommended that two files be added to the firewall exceptions list. This is especially true for companies that are running PDM in a replicated environment. The files are **lmgrd.exe** and **sw_d.exe** that are stored in the main SNLM program folder (usually **C:\Program Files (x86)\SOLIDWORKS SolidNetWork License Manager 20XX**).

To add files to the firewall exceptions list go to the Windows firewall settings, select **Allow a program or feature through Windows Firewall** and from the window that appears, click the **Allow another program…** button. Select the files listed above and then click **Add**.
C. Upgrading SNLM

1. From the Server where SNLM resides, open SNLM (For Windows 7 or Windows Server 2008...Start>>Programs>>SOLIDWORKS>>SOLIDWORKS Tools>>SolidNetWork License Manager Server)

2. From the Server Administration tab, click Stop (shown right)

3. Close SNLM

4. Run the SNLM Upgrade program using one of two methods. Choose either Option a. **OR** Option b. below...

   a. To run a standalone installation of SNLM...
      i. Run `setup.exe` from the `swlicmgr` sub folder of the installation media and follow defaults **OR**
      ii. Follow the same steps outlined in the Section B above (Installing SolidNetWork License Manager (aka SNLM)).
      iii. Instead of being asked to enter serials numbers, the system will know that an upgrade is being performed and skip this page.

   b. To Install SNLM via the SOLIDWORKS Installation Manager...
      i. Run `setup.exe` from the main installation media folder to run Installation Manager
      ii. Select the options shown below from the Welcome screen. Make sure all other checkboxes in the Server products section are **UNCHECKED**

      ![Welcome to SOLIDWORKS Installation Manager](image)

      iii. Follow the same steps outlined in the section above (Installing SolidNetWork License Manager (aka SNLM))

      iv. Instead of being asked to enter serials numbers, the system will know that an upgrade is being performed and skip this page.
5. Once the upgrade is complete, open SNLM and when prompted, click Yes to re-activate SNLM after the upgrade

   a. From the **SNLM Server Information** window, leave everything as is and click **Next**
   b. From the **Activate** window, click the **Select All** button to re-activate all licenses at once and ensure a valid email is in the applicable box, and then click **Next**.

   ![SNLM Server Information window](image1)

   ![Activate window](image2)

   c. The program will take a few moments to communicate with the SOLIDWORKS server. Once complete, the Currently Activated Product window appear where the activated products can be reviewed. Click **Finish** to complete the re-activation process.

   ![Currently Activated Product window](image3)

6. Once the activation is complete, on the **Server Administration** tab, click **Start**

7. Close SNLM
D. Activating/Reactivating Licenses

1. From the License Server, open SNLM (For Windows 7 or Windows Server 2008…Start>>Programs>>SOLIDWORKS>>SOLIDWORKS Tools>>SolidNetWork License Manager Server)

NOTE: If SNLM was installed for the first time or upgraded (as Per Section B or C), the system will automatically prompt the user to activate the license(s). Click Yes and then proceed to Step 4.

2. From the Server Administration Tab, click Modify…

3. From the screen that appears, select Activate/Reactivate a software license and then click Next

4. Next, if a firewall is being used, check the **A firewall is in use on this server** checkbox and enter the applicable details as shown below, with **25734** being the Port Number and **25735** being the Vendor Deamon Port Number. Then click Next >
5. Next, from the window that appears…

a. Select the license(s) you wish to activate/reactivate or click the Select All button to activate/reactivate all licenses listed.
b. Select Automatically over the Internet (recommended) to activate/reactivate your licenses (the Manually via e-mail option requires a waiting period and a text file to be sent to the client)
c. Enter a valid email to be associated to the activation
d. Click Next

6. The system will then connect to the SOLIDWORKS servers and activate/reactivate your licenses. The results will be displayed in the Currently Activated Products Window. Click Finish to complete the process.
7. If a single serial # was activated in Step 5 above, repeat the process to activate/reactivate other licenses as required.

8. To confirm that the licenses have been activated, navigate to the License Usage tab and review how many activated licenses are available. Use the Product pull-down list to select the product you have licenses for and then review the number below.
E. Viewing and Managing Licenses and License Information

The SNLM program provides several ways to view and monitoring network licensing.

1. To view how many licenses are available and to see who is currently using licenses…
   a. Navigate to the License Usage tab
   b. Use the Product pull-down to view are particular networked product
   c. Active users will be shown in the Licenses used by: section of the window while Total licenses and Free licenses are shown above

2. To view active license information without having to go through the re-activation process
   a. Click the Modify button from the Server Administration tab
   b. From the window that appears select the Show activated product license information button and then click Next >
   c. The results are as shown below. Click Finish to complete the action.

3. Refer to Section G for more information about managing borrowed licenses.
4. In addition to the functionality available in the SNLM program, a log file is managed by the program which contains additional important information.

   a. To access the log file, go to the SNLM installation folder (typically C:\Program Files (x86)\SOLIDWORKS SolidNetWork License Manager 20XX) and open the file named lmgrd.log

   b. This file includes the details of who, what and when SNLM is accessed as well as any errors which may have occurred. Of particular note are the following…

      i. who accessed a license and for how long.
      ii. How was denied access because of exceeded licenses
      iii. Which products not covered under current licenses users have attempted to access.
      iv. Below is an example of one such log file

F. New SOLIDWORKS Installs - Linking Client Machines to a Network License

Typically when SOLIDWORKS is first installed on a client machine, Installation Manager will ask for the License Manager server if a network license (serial #) has been inputted. The window to input the SNLM server is shown below.

What to put in this window can be gleaned from SNLM itself and is typically 25734@<server>, where <server> is the name of the server that SNLM resides.

NOTE: See Section I for switching standalone licenses to network licenses.
G. Borrowing Licenses

Borrowing licenses (i.e. taking a network license in order to use SOLIDWORKS while not connected to the company network) is done from the client machine. However, the administrator can monitor borrowed licenses from the server through the same License Borrowing tab in the server edition of SolidNetwork License Manager…

Notes about Borrowing Licenses:

- The user sets the time they wish to borrow the license for.
- Licences can only be borrowed for a maximum of 30 days.
- You cannot force the return of a license. Licenses will automatically be returned by the return date set by the user or after 30 days regardless of how long they have been borrowed for
- The machine that has borrowed the license has to be attached to the network in order for the license to be returned

If the license does not appear to be returned in a timely manner or if the user is unable to return a license, contact CAD MicroSolutions Support for further assistance.
H. Adding, Deleting and Modifying Licenses (Serial Numbers)

If you have new serial numbers or you need to delete or modify serial numbers from SNLM, do the following…

1. From the computer or server hosting SNLM, go to the Control Panel and open Apps and Features or simply click the Windows button, start typing Apps and Features and select the result that appears.

2. Navigate to and select the Program SOLIDWORKS SolidNetwork License Manager and then click Change
3. This will open the Setup window that was used when first installing SNLM. Click Next >, and then from the second window that appears, select Modify and then click Next > again.

![Modify window](image)

4. From the screen that appears, modify the serial number(s) as required.
   a. Use a comma to separate the numbers if you have multiple licenses
   b. For each license number, maintain the space every 4 characters.
   c. Click Next > when complete

![License Information window](image)

5. Click Install and then Finish once the updates are complete.

6. Open SNLM and re-activate the licenses as per the Section D (Activating/Reactivating Licenses) above.
I. **Changing Standalone Licenses to Network Licenses**

If a company is switching from standalone licenses to network licenses, there are a few steps that need to be taken…

1. **Install and Activate License Manager** as per Sections A, B and D above.

2. **Next**, the standalone serial number(s) currently on the user machines need to be changed to the network serial number. Follow the Steps outlined in Section H to do this. The basic steps are as follows:
   
   a. Go to the Control Panel on the user’s machine and open Programs and Features.
   b. Select the SOLIDWORKS installation and then click Change.
   c. From the Installation Manager program that appears **Modify the individual installation (on this machine)** and then click Next.
   d. In the applicable box, enter in the new serial number and then click Next.
   e. Accept default all the way through. **Click Modify Now** once complete.
   
   f. **When prompted to enter the location of the license server**, enter `25734@<server>`, where `<server>` is the server name where SolidNetwork License Manager was installed as per Section B above.

3. **If the registry was used to modify the serial number** (Step 2.b above), each user machine needs to be ‘pointed’ to the license server. To do this, do the following:
   
   a. Go to **Start>>Programs>>SOLIDWORKS>>SOLIDWORKS Tools>>SolidNetwork License Manager Client**
   b. Click the **Server List** tab.
   c. If there is an entry already in this window, select that entry and click the Remove… button.
   d. Click the **Add…** button.
e. Type 25734@<server>, where <server> is the server name that License manager was installed on and then click OK.

**HINT:** Have a look at SNLM on the server to see what the proper name is.

f. Click OK again to close the Client License Manager Window
J. Moving SNLM and Licenses from One Server to Another

Moving SNLM from one server to another is a relatively simple process but requires the steps involved to be followed in a specific order so that user can continue to use networked products with minimal downtime. Make sure these steps are followed exactly.

**NOTE:** There will be a slight disruption between Steps 3 and 4 below as the licenses are deactivated from one server and re-activated on another.

1. Install License Manager onto the new server as per Sections A and B above but do not activate it yet.

**NOTE:** SNLM can exist and be run in multiple locations, but the network licenses themselves can only be active in one location (i.e. SOLIDWORKS licenses can be managed in one location while PDM licenses can be managed in another). When Installing SNLM in the new location, enter only the licenses to be moved.

2. ‘Point’ the client machines to the new SNLM server
   a. Go to Start>>Programs>>SOLIDWORKS>>SOLIDWORKS Tools>>SolidNetwork License Manager Client
   b. Click the Server List tab
   c. Click the Add... button
   d. Type 25734@<server>, where <server> is the new server name that License manager was installed on and then click OK.
   e. Repeat the above steps for all user machines

**HINT:** If your I.T. department is able to be push out registry updates to client machines, this can be done expedite the process. The SNLM server name added in the above steps is located in HKEY_LOCAL_MACHINE\SOFTWARE\FlexLM License Manager. The registry update simply needs to change the value of SW_D_LICENSE_FILE to include the new server. For multiple servers, separate each entry with a semicolon. This same process can be used to remove the old license server once it is decommissioned.
3. Deactivate the licenses from old server
   a. Open SNLM and from the Server Administration tab, click Stop (shown right)
   b. Follow Steps 1 and 2 of Section D above to start the deactivation process.
   c. In Step 3, click the Move your product license(s) to a new/upgraded computer button and then click Next > (moving a license is in fact deactivating a license from a particular server or machine)
   d. Continue with the steps outlined in Section D above to deactivate the desired licenses (Section D, Step 5) and complete the process

4. Activate the licenses on new server
   a. Follow the steps outlined in Section D above to activate the licenses on the new server

**NOTE:** If the old license server is to be completely decommissioned, it is recommended that the old server be removed from the client machines to avoid confusion. See Section I (Changing Standalone Licenses to Network Licenses), Step 3 on how to remove old license servers from client machines.
K. **Using the Options File**

SNLM adds significant flexibility to the way organisations can use their SOLIDWORKS licences, but this flexibility can be customised and extended further using the SNLM options file. Adding an options file allows the administrator to reserve, exclude and group licenses to particular users within an organization.

Creating and using an options file is a 3 step process which includes adding the file to the license server, building the ‘code’ to manage licenses and finally activating the options file for use in a live environment.

1. **Add an options file to the license server**
   a. Navigate to the server that houses SNLM
   b. Navigate to the licenses sub folder of the main SNLM installation folder (typically C:\Program Files (x86)\SOLIDWORKS SolidNetWork License Manager 2016\licenses)
   c. In the licenses folder, save a blank text file with the name sw_d.opt (note the extension)

2. **Open the options file and build the ‘code’ to manage licenses.**
   a. Basic conventions are as follows (with examples)…

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td># THIS IS AN OPTIONS FILE</td>
<td>Adding a # in front of any line turns that line into a comment</td>
</tr>
<tr>
<td>RESERVE 1 swofficepro USER john.smith</td>
<td>Reserve 1 license of SOLIDWORKS Professional (swofficepro) for the user John Smith (john.smith represent the Windows Active Directory User name of the person in question)</td>
</tr>
<tr>
<td>EXCLUDE swofficepremium USER jeff.brown</td>
<td>Prevents the user Jeff brown, from using a license of SOLIDWORKS premium</td>
</tr>
<tr>
<td>GROUP DESIGNERS john.smith jeff.brown lisa.anderson</td>
<td>Puts the users John Smith, Jeff Borwon and Lisa Anderson into a group called DESIGNERS</td>
</tr>
<tr>
<td>INCLUDE piping GROUP DESIGNERS</td>
<td>Allow the group DESIGNERS to use SOLIDWORKS Pipe Routing</td>
</tr>
<tr>
<td>MAX 2 swofficepremium GROUP DESIGNERS</td>
<td>Only a maximum of 2 users from the DESIGNERS group can use SOLIDWORKS Premium at any one time.</td>
</tr>
<tr>
<td>EXCLUDE_BORROW cae_cwpro USER bill.nye</td>
<td>Bill Nye is not allowed to borrow a license of SOLIDWORKS Simulation premium</td>
</tr>
</tbody>
</table>

b. The results of the above conventions, if put into an options file, would look as follows…

```
# THIS IS AN OPTIONS FILE
GROUP DESIGNERS john.smith jeff.brown lisa.anderson
RESERVE 1 swofficepro USER john.smith
EXCLUDE swofficepremium USER jeff.brown
INCLUDE piping GROUP DESIGNERS
MAX 2 swofficepremium GROUP DESIGNERS
EXCLUDE_BORROW cae_cwpro USER bill.nye
```

**WARNING:** The options file is case sensitive and syntax must match user and product names exactly!

c. Save and close the file.
3. Activate the options file in SNLM
   a. Follow Section D, Steps 1 through 3 to start the activation process
   b. In Step 4 of Section D, check the Options File check box and then click the Browse button
   c. Navigate to the folder identified in Step 1.b above, select the options (sw_d.opt) file and then click Save. The result is as shown below.
   d. Click Next > and continue with the steps shown in Section D

**NOTE:** Users will then have to Exit out of SOLIDWORKS and then go back in for the options file to take affect.