



# **Arena-flow Installation Guide**

***Release 12.0.0***

**Arena-flow, LLC**

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# 1 Installation

## 1.1 Overview

This chapter documents the procedures for installing *Arena-flow* and connecting it to its license server, the Reprise License Manager (RLM). The following steps lead you through the process of getting started with *Arena-flow*:

1. Create a CPFD Support site account in order to access downloads
2. Acquire hardware that meets recommended *System Requirements* for *Arena-flow*
3. Download *Arena-flow*
4. Install *Arena-flow*
5. Configure License

### 1.1.1 Licensing

In order to use *Arena-flow*, you must have a valid RLM software license. *Arena-flow* uses a client-server model for licensing, meaning that your license(s) can be placed on one machine, which acts as a license server, and other machines on the same network can point to and request licenses from that server. The server may also use the license(s) that it hosts. *Arena-flow* also supports RLMCloud, which is a cloud-based solution for serving RLM licenses.

The licensing policy for *Arena-flow* is as follows:

- Each solver license allows the user to run one instance of the *Arena-flow* solver.
- The number of *Arena-flow* solvers that can be run simultaneously is limited to the number of solver licenses that have been purchased.
- With any license, an unlimited number of *Arena-flow* Graphical User Interfaces (GUIs) can be open at the same time. This allows users to set up simulations, review previously set up models, and use all functions of the GUI.
- *Run calculation setup* does not count against the number of *Arena-flow* solver licenses in use. This allows users to review a project setup at any time.
- An unlimited number of *Tecplot for Arena-flow* post-processing instances can be open at the same time.
- The RLM license server must be run on a physical machine. A virtual machine (VM) cannot be used as the RLM license server host.
- The RLMCloud service is only available to customers with a current lease or maintenance contract for *Arena-flow*.

## 1.2 System Requirements

*Arena-flow* can be used on either Linux or Windows. The following table lists minimum and recom-

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mended system requirements.

	Minimum	Recommended
Operating System	64-bit CentOS 7 (RHEL 7) or other recent 64-bit Linux 64-bit Windows 10	64-bit CentOS 7 (RHEL 7) or higher Windows 10 Pro 64-bit
CPU	Any 64-bit Intel compatible from the last 5 years	Intel Core i7-9800X (4.4 GHz, 8 cores, 16.5 MB cache) or better. Higher clock speed and newer Intel architecture are better.
Memory (RAM)	8 GB	16 GB. Faster is better.
Hard drive space	500 GB free space	4 TB ( 2 X 2 TB). More is better

### 1.2.1 Additional Considerations

Though *Arena-flow* simulations can be run on laptops, or lower-performance desktop machines, doing so is generally not recommended. Investing in an up-to-date calculation machine, with the fastest hardware currently available, will provide much faster calculation speeds. Additionally, since computer hardware advances in capacity and speed at such a fast pace, it is recommended to purchase updated hardware every 2 to 3 years to obtain the fastest performance.

*Arena-flow* can be installed on compute nodes of a cluster. However, it will not take advantage of the multi-node parallel computing capabilities of the cluster. Each *Arena-flow* simulation utilizes the computing resources of a single machine. Since each individual node of a cluster is not usually optimized for the fastest possible single-machine CPU performance, it is often the case that running *Arena-flow* on a cluster node will not give the best possible calculation speed. Instead, it is generally better to purchase a very fast single-CPU standalone calculation machine on which to run *Arena-flow*. This standalone machine will outperform a cluster node in the majority of cases, for the purpose of running *Arena-flow*.

## 1.3 Download *Arena-flow*

The current version of *Arena-flow* is available for [download on the CPFD support site](#). When downloading, be sure to choose the appropriate distribution for your operating system (Linux or Windows).

Physical installation media can be sent upon request via email to [licensing@cpfd-software.com](mailto:licensing@cpfd-software.com). Please specify Windows or Linux and USB stick or CD.

## 1.4 Install *Arena-flow*

*Arena-flow* must be installed on every client machine used for simulation. Multiple versions of *Arena-flow* can be installed on a single machine, and each version operates independently. It is not necessary to uninstall old versions of *Arena-flow* when installing a new version.

To ensure that *Arena-flow* is available to all users on a machine, it is recommended to run the installer as an administrator on Windows or as the root user on Linux.

### 1.4.1 GUI Install

1. Extract the downloaded file (.zip for Windows and .tar.gz for Linux). Navigate to the *Arena-flow* installation folder that was extracted.
2. Double-click on `arena-flow-12.0.0-Linux.run` (on **Linux**) or `arena-flow-12.0.0-Windows.exe` (on **Windows**) to start the *Arena-flow* Setup Wizard. Click *Next*.

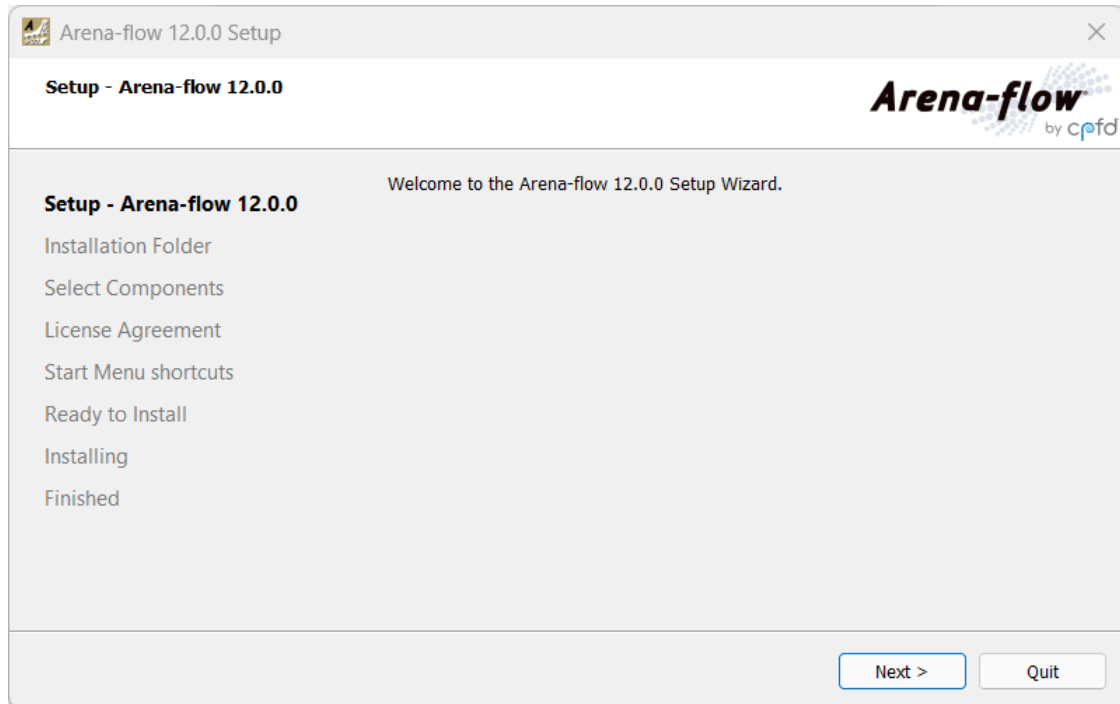


Figure 1.1. *Arena-flow* Setup Wizard

3. This window shows the default directory in which the *Arena-flow* version will be installed. It is recommended to use the default directory. Click *Next*.

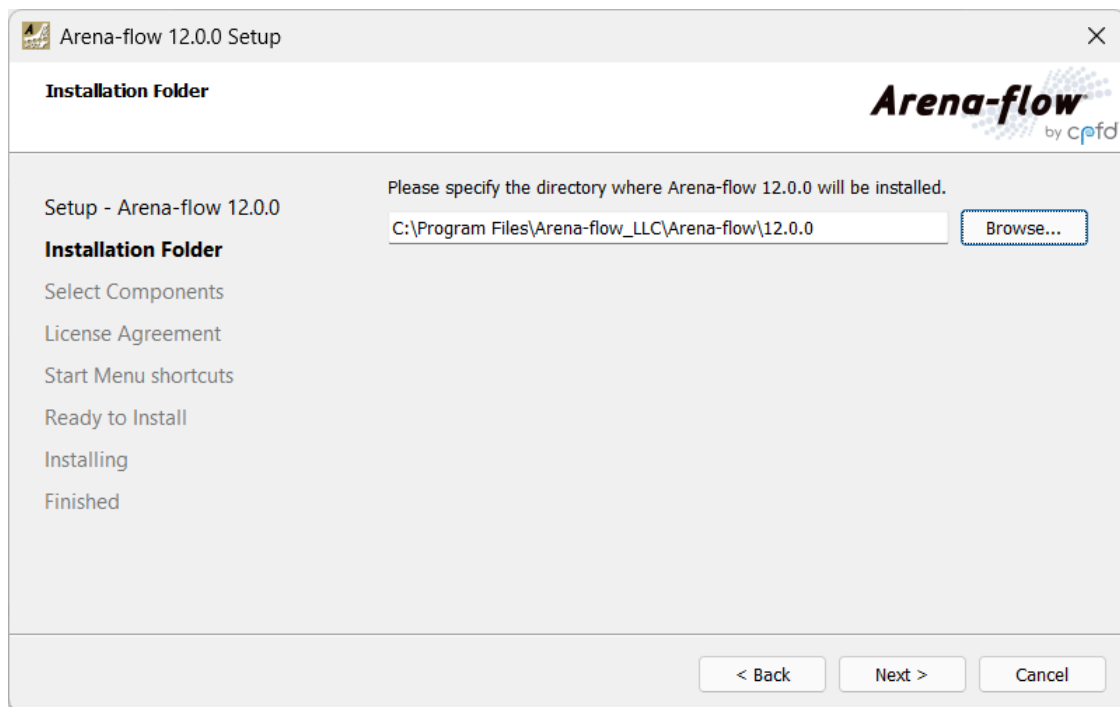


Figure 1.2. *Arena-flow* Installation Directory

4. This window allows you to choose the components to be installed. It is recommended that you leave all components checked and click *Next*.

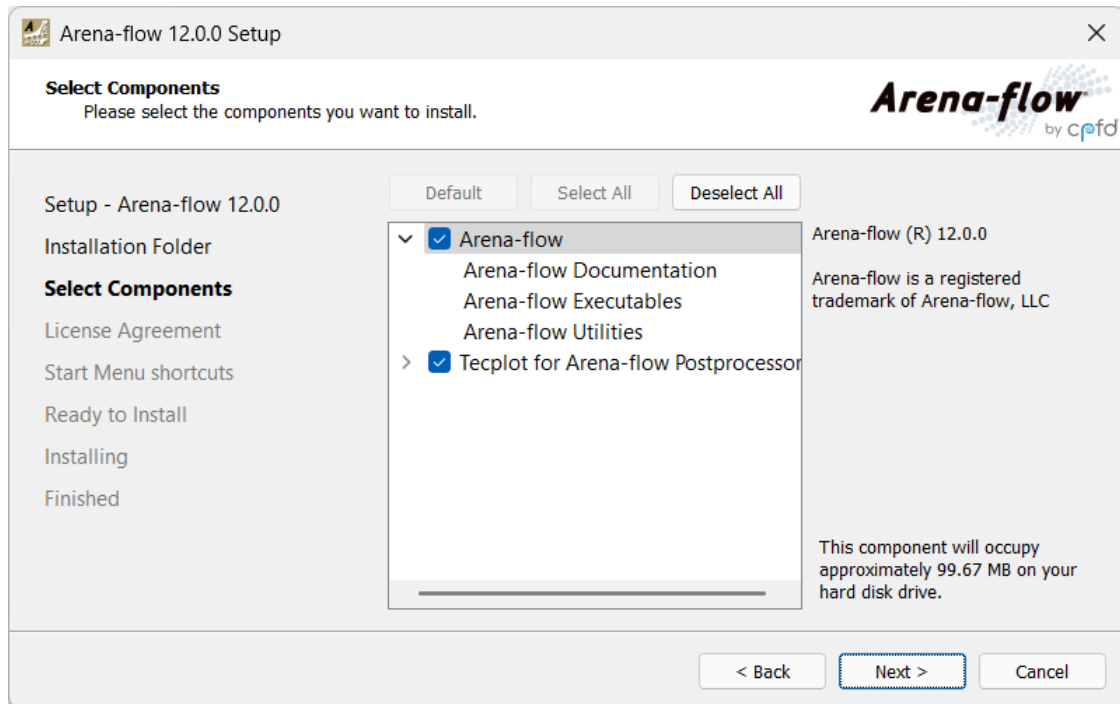


Figure 1.3. *Arena-flow* Setup Select Components

5. Read and accept the License Agreement and click *Next*.

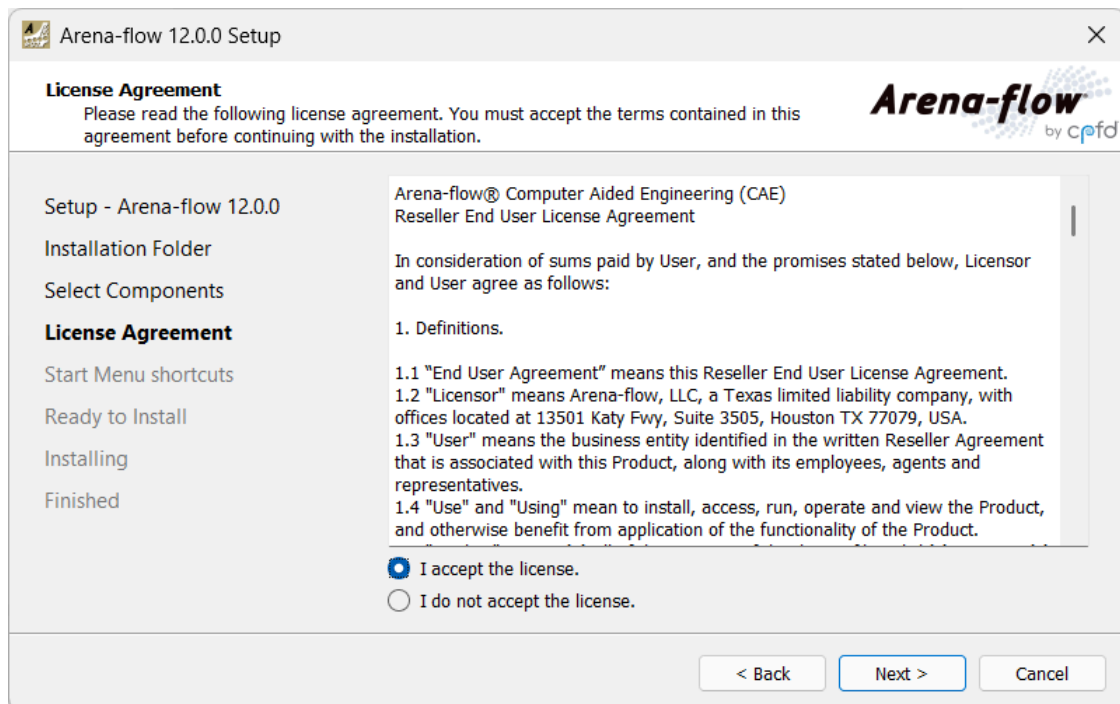
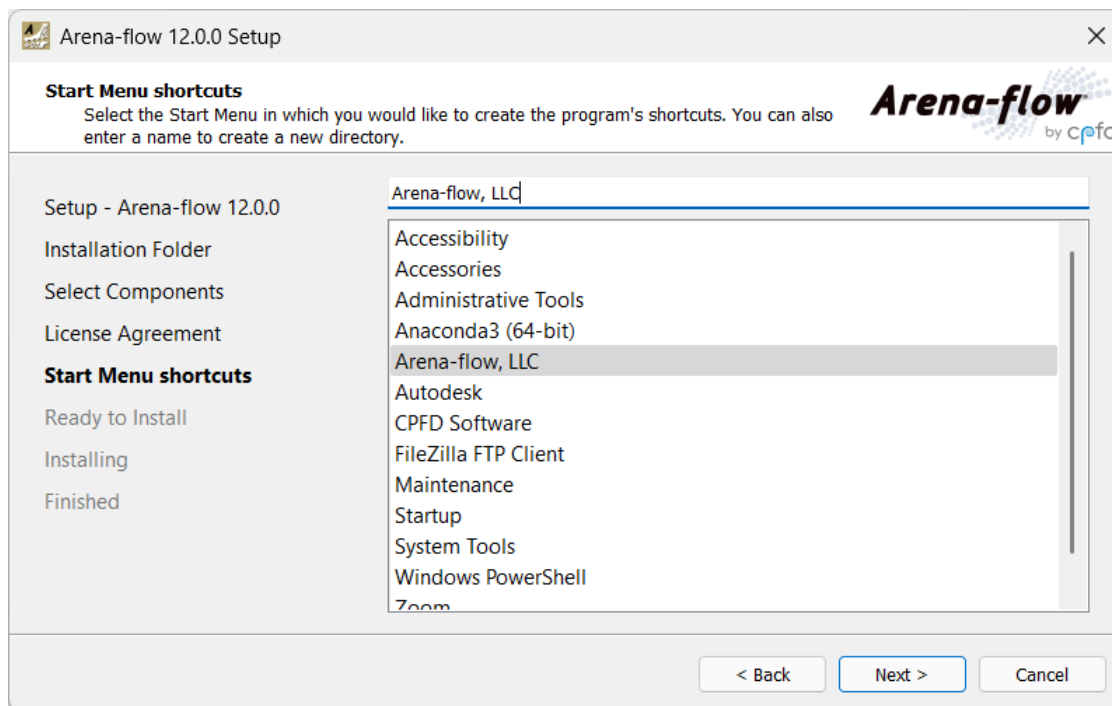


Figure 1.4. *Arena-flow* License Agreement

6. On Windows, create a Start Menu shortcut and click *Next*.

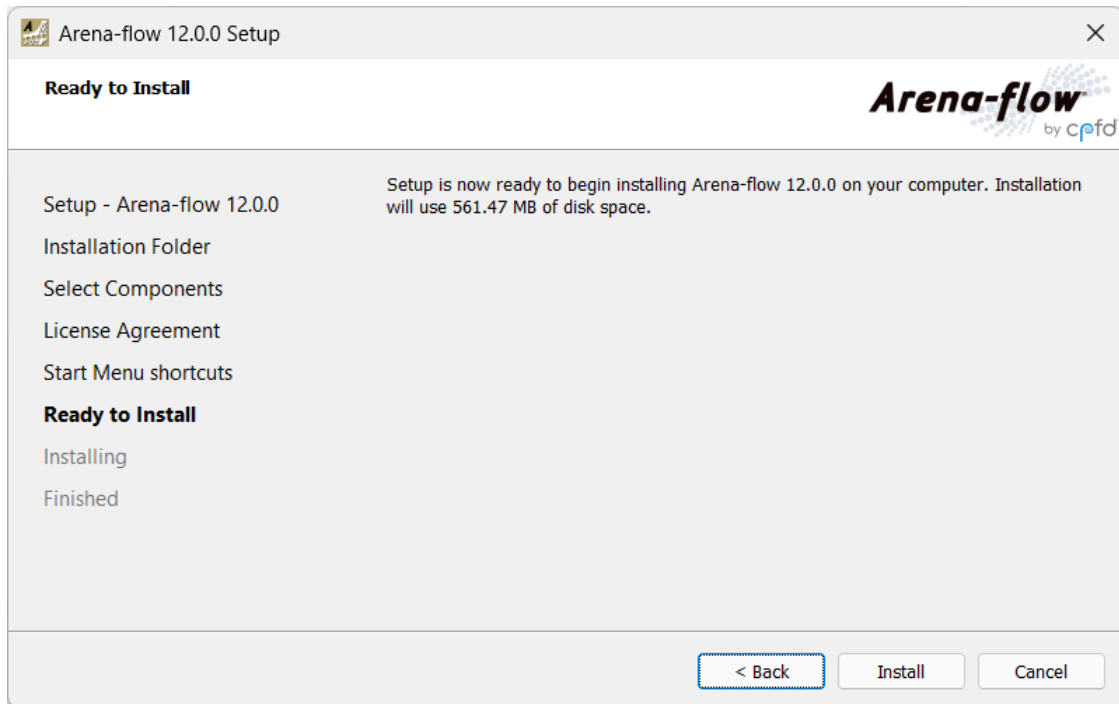


7. Click *Next* in order to begin the installation.



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The installer will display a progress bar as it installs *Arena-flow*.

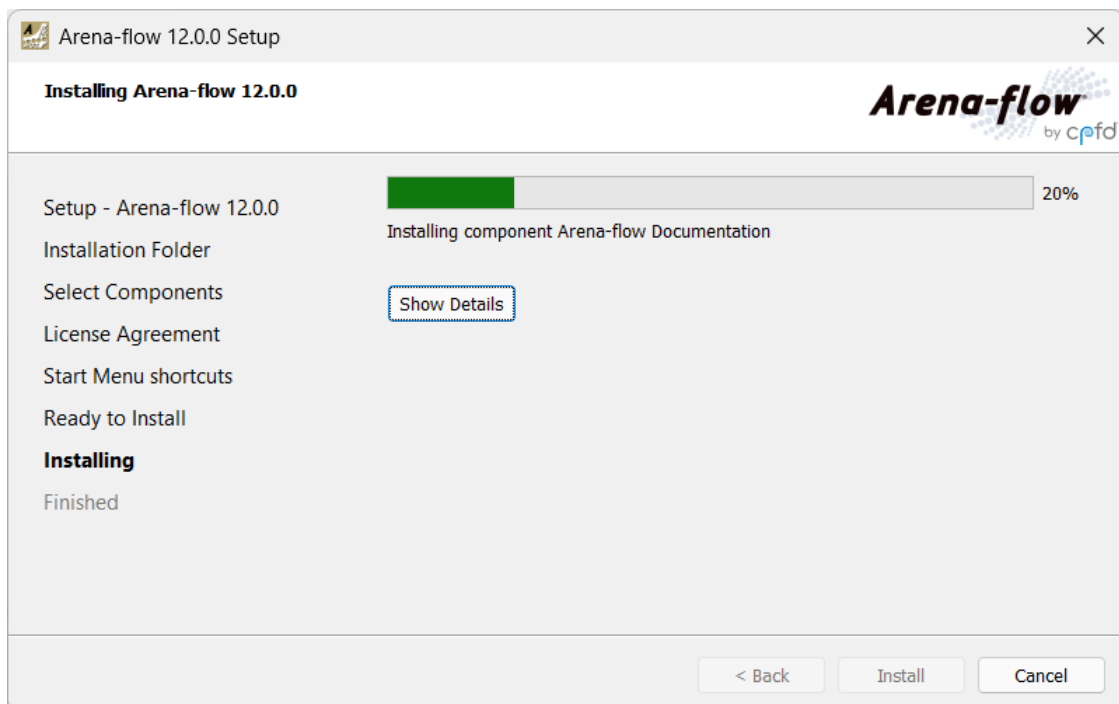


Figure 1.5. *Arena-flow* Setup Installing

8. Once the installation is complete, the final window of the *Arena-flow* Setup Wizard will be displayed.

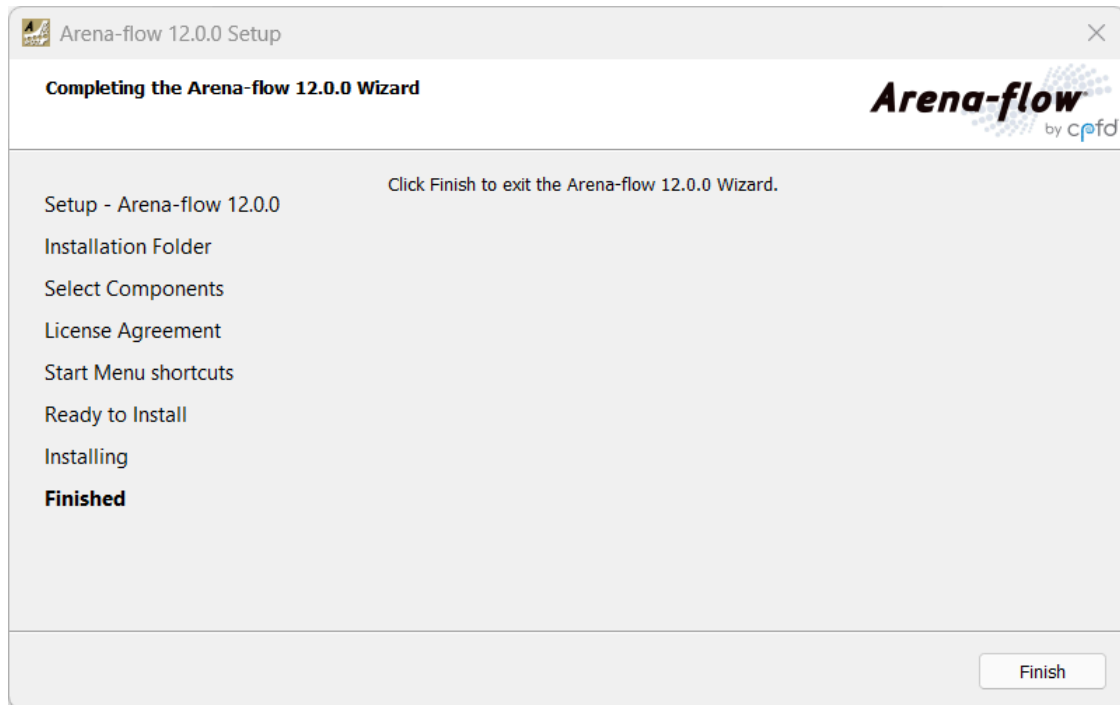


Figure 1.6. *Arena-flow* Setup Final Page

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**Note** After installing *Arena-flow* on a Linux machine, it may be necessary to log out and log back in to ensure that *Arena-flow* is placed correctly in the system menu.

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### 1.4.2 Headless Install

*Arena-flow* supports headless install and uninstall so the process can be scripted.

Linux

```
./arena-flow-12.0.0-Linux.run install --default-answer --accept-licenses  
--confirm-command --root /home/user/Arena-flow_LLC/Arena-flow/12.0.0
```

Windows

```
.\arena-flow-12.0.0-Windows.exe install --default-answer --accept-licenses  
--confirm-command --root "C:\Program  
Files\Arena-flow_LLC\Arena-flow\12.0.0"
```

If you wish to perform a headless uninstall, the uninstall tool can be found in the *Arena-flow* installation directory.

### Linux

```
./Uninstall-Arena-flow purge --confirm-command
```

### Windows

```
.\Uninstall-Arena-flow.exe purge --confirm-command
```

## 1.5 Configure License

*Arena-flow* uses the Reprise License Manager (RLM) to serve GUI, solver and *Tecplot for Arena-flow* licenses. RLM uses a client-server model, and it is necessary to configure the license for each machine that will be running simulations (i.e. each client). Two options exist for RLM servers:

1. **RLMCloud** is a cloud-based solution for serving RLM licenses. This is the most common and convenient server option for *Arena-flow* users. CPFD maintains the cloud-based server and no administration is required by the user. If you are using RLMCloud please refer to the [RLMCloud License Installation Instructions](#) to point clients to the server. RLMCloud performs best for users with very stable internet connections.
2. **On-premise** RLM servers are also supported. Customers must install and maintain their own server to act as on-premise RLM server (see [On-Premise RLM Server Installation](#)). Your license(s) can be placed on one machine (see [On-Premise RLM Server License Installation Instructions](#)), which acts as a license server, and other machines on the same network can point to and request licenses from that server. The server may also use the license(s) that it hosts. If you are using an on-premise RLM server please refer to [Point Clients to On-Premise RLM Server](#).

Clients can point to any combination of one or more RLMCloud and/or on-premise RLM license servers. It is possible to configure RLM in several ways, depending on your needs and preferences; see [Planning the RLM Client-Server Configuration](#).

The steps for pointing clients to the RLM license server(s) must be performed on the following occasions:

- The first time you install *Arena-flow* on a client machine
- Any time the on-premise RLM server changes its IP address or hostname; in this case, all client machines need to be updated to point to the new IP address or hostname

The recommended method for pointing clients to the RLM license server(s) is by using the *Arena-flow License Manager* dialog, which is accessed by choosing *Manage License Servers* in the *Arena-flow GUI Help* menu.

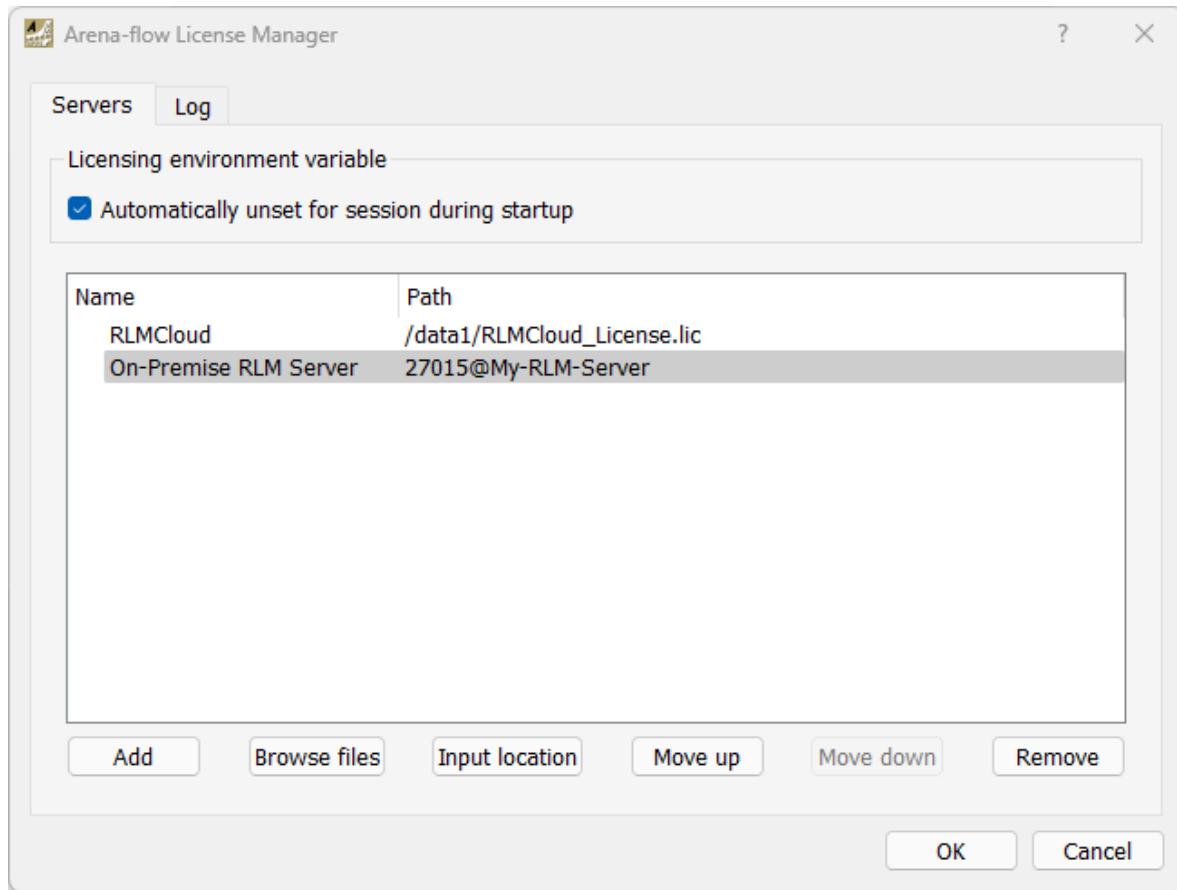


Figure 1.7. Servers tab of Arena-flow License Manager

The *Servers* tab, shown in Figure 1.7, is used to define one or more RLM license servers to be used by the client. The order in which license servers are listed in this dialog is the order the client will use to request licenses. The first available license from the configured servers will be checked out.

The *Licensing environment variable* section will appear if a *legacy cpfd\_LICENSE environment variable* has been set. This environment variable was used in pre-10.0.0 versions of *Arena-flow*, but is not the recommended method for pointing to the RLM license server in versions 10.0.0 and later. It is recommended that the option to *Automatically unset for session during startup* be checked so that *Tecplot for Arena-flow* is able to check out its license successfully. If your system is configured to use the legacy environment variable, you may need to un-check this box for licenses to be checked out.

In the *Servers* table, there are two columns:

**Name** This column is used to give each defined RLM license server a name for easy identification. There are no restrictions on the *Name* specified.

**Path** If an RLMCloud license server is being defined, this column holds the path to the RLMCloud license file. If an on-premise RLM license server is being defined, this column holds the port number and host name (or IP address) of the RLM server.

The following buttons are present below the list of defined RLM license servers:

**Add** This button adds a new entry to the list of defined RLM license servers. After clicking *Add*, the

entry can be given a *Name*.

**Browse files** This button opens a file browser to select an RLMCloud license file. When a file is selected, the full path to the file will be shown in the *Path* column.

**Input location** This button allows text to be directly typed into the *Path* column for the currently selected entry. Double-clicking in the *Path* column for the current entry has the same effect. Direct text entry is most commonly used for specifying the port and host name (or IP address) of an on-premise RLM license server.

**Move up** This moves the currently selected entry up in the list of defined RLM license servers.

**Move down** This moves the currently selected entry down in the list of defined RLM license servers.

**Remove** This removes the currently selected item from the list of defined RLM license servers.

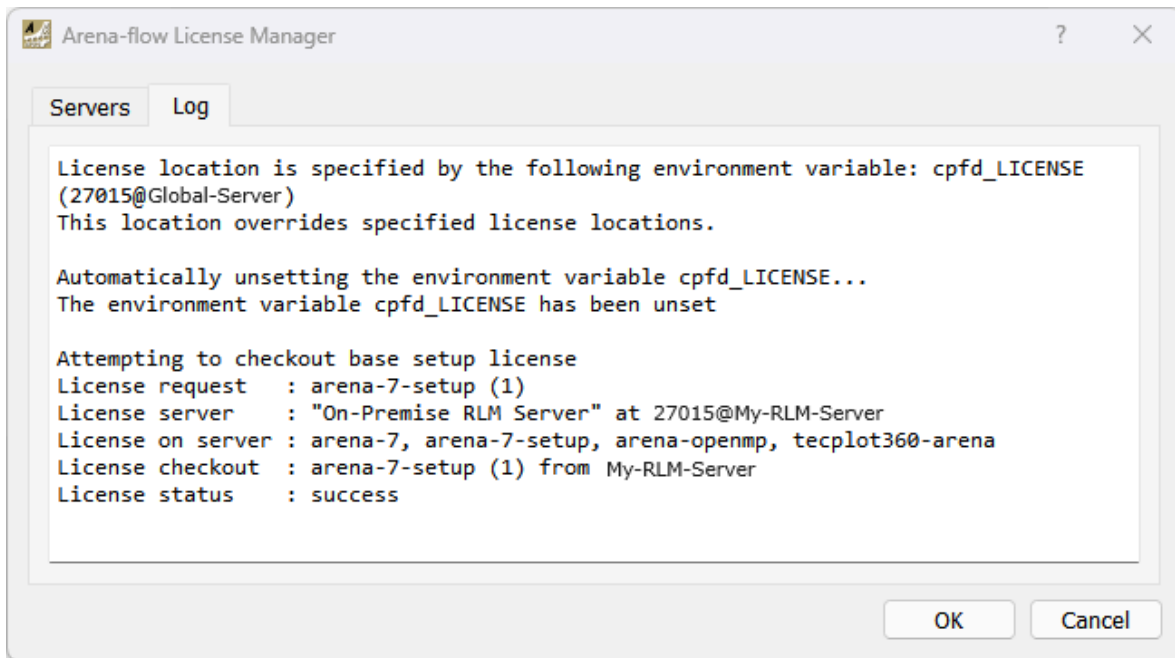


Figure 1.8. Log tab of Arena-flow License Manager

The *Log* tab, shown in [Figure 1.8](#), is used to view messages related to RLM license checkout. This is often useful for diagnosing and troubleshooting license issues.

A legacy method of pointing clients to RLM license servers is by defining an environment variable named `cpfd_LICENSE`. Using the IP address or `<hostname>` of an on-premise RLM server, or the file path for an RLMCloud server, the `cpfd_LICENSE` environment variable can be defined to point to one or more servers. If you are specifying multiple servers, separate each server's information with a colon `:`. The order in which you list the servers is the order in which licenses will be checked out.

- If the OS of the RLM client is **Linux**, you can define the environment variable by opening a terminal on the client and typing:

```
# Single RLMCloud server example:
echo "export cpfd_LICENSE=/path/to/myRLMCloudFile.lic">> ~/.bashrc
```

```
# Single on-premise server example:
echo "export cpfd_LICENSE=27015@<IP address or hostname>">> ~/.bashrc

# Multiple server example:
echo "export cpfd_LICENSE=27015@<IP address or
hostname>:/path/to/myRLMCloudFile.lic">> ~/.bashrc
```

Logout and login in order for settings to update.

- If the OS of the RLM client is **Windows**, you can define the environment variable by opening a **command prompt** on the client and typing:

```
rem Single RLMCloud server example:
setx cpfd_LICENSE "C:\path\to\myRLMCloudFile.lic"

rem Single on-premise server example:
setx cpfd_LICENSE 27015@<IP address or hostname>

rem Multiple server example:
setx cpfd_LICENSE 27015@<IP address or
hostname>:"C:\path\to\myRLMCloudFile.lic"
```