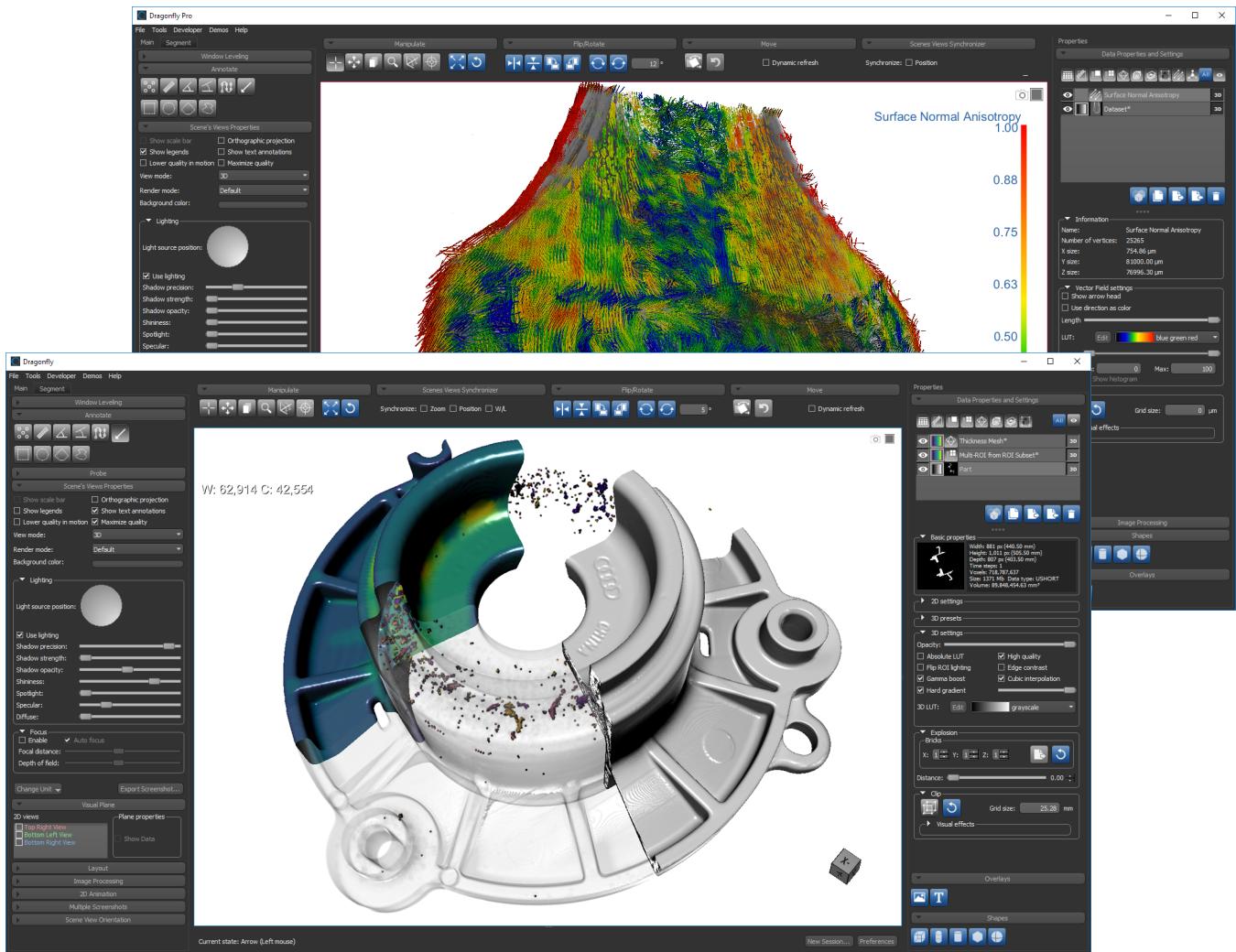




DRAGONFLY INSTALLATION GUIDE



VERSION 4

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Installing and Activating Dragonfly

This document provides instructions for installing and activating Dragonfly software licenses. It includes the following topics:

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System Requirements

In this topic you will find the minimum system requirements that must be met to work with Dragonfly and some further recommendations to fully experience all the benefits of Dragonfly.

NOTE If you plan to use Dragonfly's Deep Learning solution, you should also review the requirements in the topic *Is Your System Ready for Deep Learning?*, which is available on the ORS website at: www.theobjects.com/dragonfly/deep-learning-get.html.

Minimum Requirements

Dragonfly can run on any workstation with the following minimum specifications. However, you should note that performance and productivity will likely be limited and that such a system may not be able to handle larger-sized research datasets.

- 64-bit Windows 7, 64-bit Windows 8 or 8.1, 64-bit Windows 10.
- 64-bit Linux operating system, which is available starting from Ubuntu 15.10.
- Dedicated GPU graphics card with at least 1 GB of VRAM.
- Support for OpenGL 4.3 or higher.
- 8 GB of RAM.
- 5+ GB of local hard disk storage for download and installation.

NOTE Some remote connections and virtual machines, most notably Windows Remote Desktop and VMWare, are not supported by Dragonfly.

System Recommendations

Dragonfly needs a high-performance workstation in order to handle the image processing and visualization demands of large data. If you want maximal performance, then you should exceed these specifications and purchase whatever your budget permits.

- Dedicated GPU graphics card with at least 6 GB of VRAM.
- 32+ GB of RAM (plan on having 4x as much RAM as the largest scans you need to process).
- 2.4 GHz or faster Intel 4-core Xeon or i7 CPU (or AMD equivalent).
- 2 TB of local hard disk storage.

Your hardware choices should be prioritized as follows:

- GPU (graphics processing unit).
- RAM (random access memory).
- CPU (central processing unit).
- Hard disk storage.

GPU (Graphics Processing Unit)

You should choose a workstation-class (Nvidia Quadro or ATI FirePro) or a gamer-class (Nvidia GeForce or ATI Radeon) graphics card. Dragonfly performance will improve with more video RAM (VRAM) and more GPU processing capability (GPU cores). Refer to the ORS website (www.theobjects.com/dragonfly/system-requirements.html) for a list of

the highest-performance graphics cards to consider, which are ranked from highest to lower performance.

NOTE When building a system yourself, you must confirm that your system is compatible with your preferred graphics card. The constraints are the interface of the motherboard (e.g. PCIe 3.0) and the power capacity of the power-supply unit (e.g. 800 W).

RAM (Random Access Memory)

Some image processing tasks are very demanding of memory. We suggest you equip your workstation for 4x the size of the largest scan that you wish to work with. For example, if you typically work with 25 GB scans, then you should arrange for 100+ GB of RAM.

Note that when building a system, you may wish to have a future upgrade path. Many budget systems will not permit you to upgrade beyond 32 GB of RAM. Always pay attention to the maximum supported memory for any system you purchase.

CPU (Central Processing Unit)

Dragonfly performance will benefit from faster clock speed CPUs and from more cores. If you are doing mostly visualization and minimal image processing, then CPU is less important. If you expect to do extensive image processing, then you should invest in faster clockspeed and more cores.

Hard-Disk Storage

Dragonfly installations typically require less than 1 GB of space, so it has no meaningful requirements for hard-disk storage. However, users will need space to store data they are working on, as well as intermediate and final results. Because users are typically working on large data, we encourage you to get at least 2 TB of local storage.

Installing Dragonfly

The following instructions provide information for installing Dragonfly. You should note that installation is a two-part process. The required Anaconda Python distribution will be installed first and then Dragonfly. If you are a Python user, the private installation of the Anaconda distribution for Dragonfly should not disrupt your regular usage of Python.

How to Install Dragonfly

1. Make sure that you are logged onto the client computer with administrator privileges.

NOTE The installation procedure is the same for *node-locked (static)* and *floating (concurrent)* licenses and for all versions of Dragonfly.

2. Double-click the Dragonfly installer you downloaded. For example, `InstallDragonflyWithDL_647.exe`.

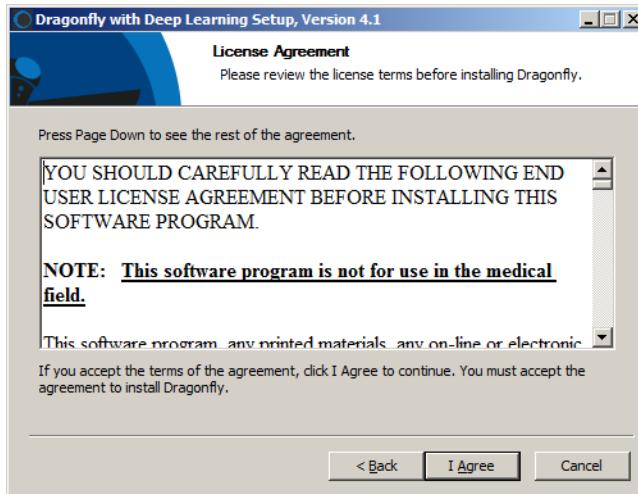
NOTE If the User Account Control dialog appears, click **Yes** to allow the program to make changes to your computer.

The **Dragonfly Setup Wizard** appears.



3. Click **Next** to continue with the installation.

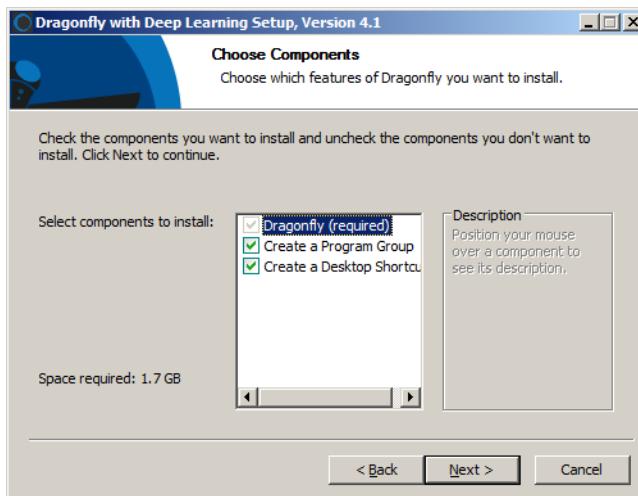
The **License Agreement** screen appears.



4. Review the license agreement and then click **I Agree** if you accept the terms. You cannot install the program without first accepting the license agreement.

The **Choose Components** screen appears.

5. Select the optional components you want to install — a program group and/or a desktop shortcut on the **Choose Components** screen.



6. Click **Next** to continue.

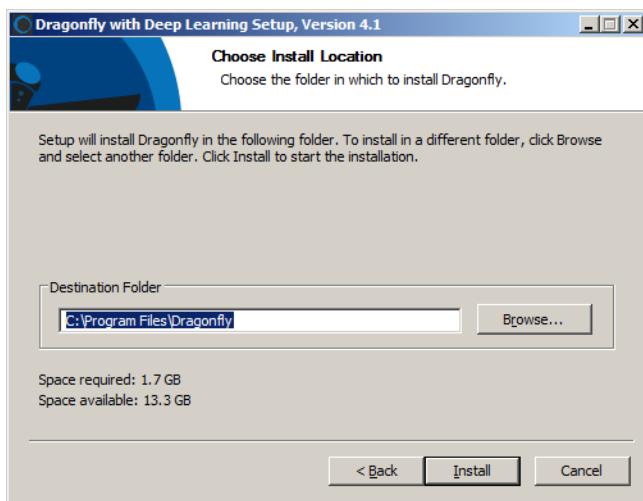
The **Create Shortcuts** screen appears.

7. Select the required option for creating shortcuts — **All users** or **Current user only** — on the **Create Shortcuts** screen.



8. Click **Next** to continue.

The **Choose Install Location** screen appears.

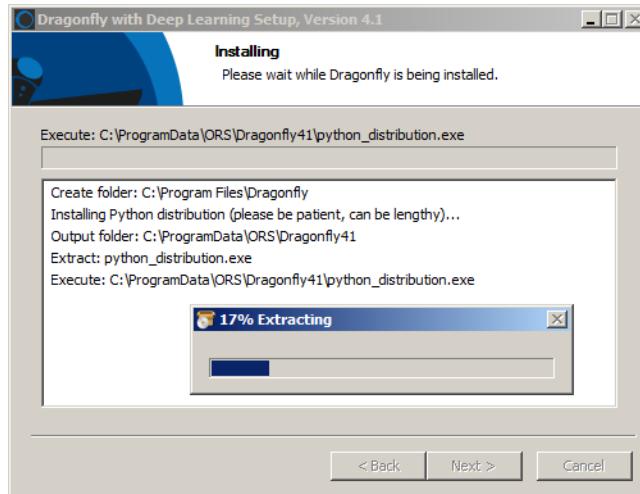


By default, the program will be installed in `C:\Programs Files\Dragonfly\`.

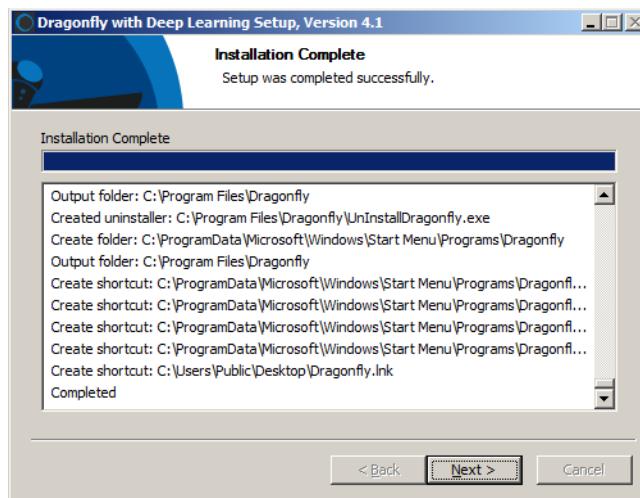
To install the program in a different folder, click the **Browse** button and then select another folder in the **Browse For Folder** dialog.

9. Click **Install** to start the installation.

Wait for the first part of the process — extraction and installation of the Anaconda Python distribution for Dragonfly — to be completed.

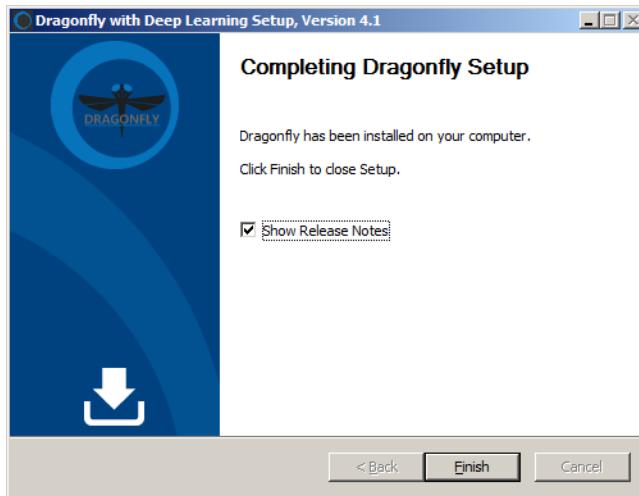


Wait for the second part of the process — installation of Dragonfly — to be completed.



10. Click **Next** when installation of Dragonfly is complete.

11. Click **Finish** to close the wizard.



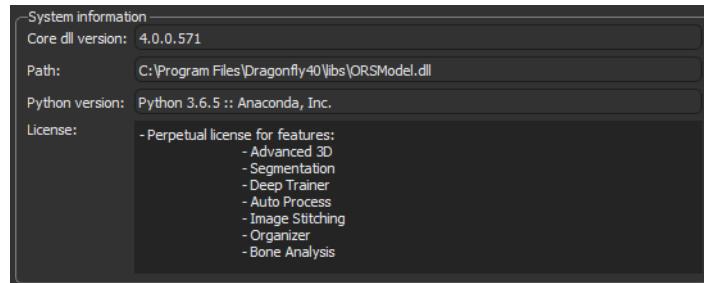
The Welcome to Dragonfly web page appears. If selected, the release notes for the installed version will appear in Adobe Acrobat Reader.

Dragonfly Licenses

Licenses define the rights to use Dragonfly on designated equipment at a certain level of functionality. In addition, licenses can be perpetual or may be restricted to a specific period of time. Trial licenses sent for evaluation purposes, non-commercial licenses, and for annual and monthly subscriptions, are only valid until a given date. Each time the software runs, it checks for a valid license. If a valid license is found, the application will run with all of the licensed features.

The currently licensed features are listed in the **System information** box in the About dialog, shown below. Choose **Help > About** on the menu bar to open the dialog.

System information



NOTE You can purchase commercial licenses for Dragonfly directly from our Online Store (www.theobjects.com/buy/index.php) or you can request an obligation-free quote (www.theobjects.com/dragonfly/get-quote.php). Refer to Non-Commercial Licensing (www.theobjects.com/dragonfly/get-non-commercial-licensing-program.html) for information about requesting non-commercial licenses.

The following table summarizes features that can be separately licensed for Dragonfly:

Licensing options

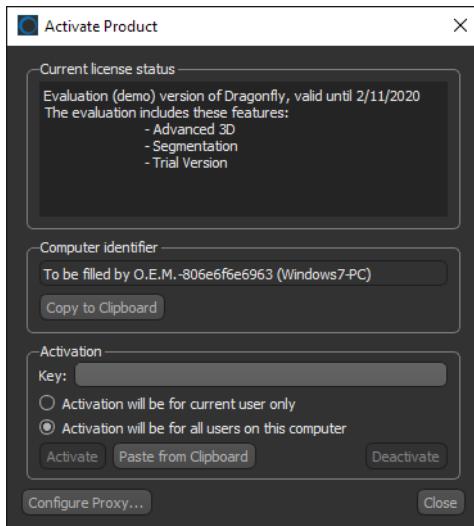
Item	Description
Deep Trainer	Lets you advance your image processing results to new levels by harnessing the power of convolutional neural networks (CNNs), which have proven to outperform classic machine learning techniques in many image processing applications, such as segmentation and denoising.
Auto Process	Enables real-time processing of serial section 2D stack experiments. Instead of having to wait for an entire image stack to be available, you can set required operations — such as filtering, registration, classification, or operations saved in a macro — to be applied automatically to new images as they arrive.
Image Stitching	Provides automated and manual alignments to precisely combine, or stitch, overlapping 2D or 3D image tiles to create a single high-resolution image.
Organizer	Provides an easy way to organize, manage, and share your data and analysis results.
Bone Analysis	Is a pre-clinical research application designed for the evaluation of high-resolution micro-CT image data of bone specimens.
Pro Features	A number of specific features, listed below, are available only for Dragonfly Pro. <ul style="list-style-type: none">• Support for TXM (*.txm extension) and CZI (*.czi extension) file formats.• Manual RBF and Non-Local Means shading compensation filters.• Watershed transforms. Split and merge connected components.• Computations of connected porosity. <p>NOTE Contact Object Research Systems for information about the availability of Dragonfly Pro.</p>

Activating Dragonfly

You will need to unlock Dragonfly if your current license has expired, for example in cases in which a trial period has ended, or if you need to activate a new license that includes additional features. In either case, you will need to enter an activation key in the Activate Product dialog.

Choose **Help > Activate Product** on the menu bar to open the Activate Product dialog, shown below. You can also click **Activate the Product** in the License Expired message box to open the dialog.

Activate Product dialog



Licenses define the rights to use Dragonfly on designated equipment at a certain level of functionality (see [Dragonfly Licenses](#) on page 11). You should note that Dragonfly has two licensing models — node-locked and floating — which determine how licenses are configured and distributed.

Node-locked (static) license... This type of license allows Dragonfly to run on only one particular computer (see [Activating Node-Locked Licenses](#) on page 13).

Floating (concurrent) license... This type of license allows Dragonfly to run on multiple computers that "share" a license (see [Activating Floating Licenses](#) on page 14).

Offline Activations

In most cases, your system must be connected to the Internet to activate a Dragonfly license. However, customers may request an offline activation option. In this case, you will need to provide the computer identifier of the systems on which Dragonfly will be installed before you activate the product.

If required, you can open the Activate Product dialog — by choosing **Help > Activate Product** on the menu bar — and then copy the computer identifier to your clipboard. The option to copy the computer identifier is available in the **Computer identifier** box. You may then need to email it to the ORS Support Center to receive a license that can be activated offline (see [Contacting the ORS Support Center](#) on page 18).

NOTE The option to activate Dragonfly offline is not available for non-commercial versions that are free-of-charge.

Activating Node-Locked Licenses

This type of license allows Dragonfly to run on only one particular computer. You should note that all trial licenses are node-locked. Unless specified otherwise, your system must be connected to the Internet to activate a commercial or non-commercial Dragonfly license.

How to Activate a Node-Locked License

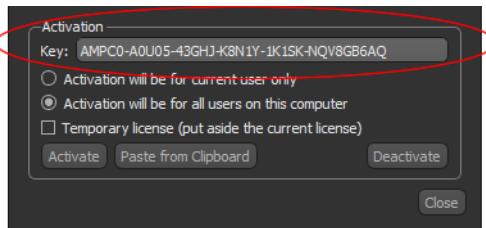
1. Do one of the following:

- Choose **Help > Activate Product** on the menu bar.
- Click **Activate the Product** in the License Expired message box.

This message box will appear onscreen if your Dragonfly license has already expired and the application is locked.

The Activate Product dialog appears.

2. Enter or paste the activation key you received in the **Key** box, circled below.



3. Select an activation option — **Activation will be for current user only** or **Activation will be for all users** on this computer.

NOTE See [Activating Temporary Licenses](#) on page 17 for information about activating temporary licenses.

4. Click **Activate** to activate the new license.
5. Click **Close** to exit the dialog.

Activating Floating Licenses

With a floating license, Dragonfly can run on multiple computers that “share” the license. The number of systems that can run Dragonfly at the same time depends on the number of “seats” that you purchase. You can configure a floating license to use a network share or the ORS public web server as the license server. You should note that if the license server is shut down or taken offline, workstations will be unable to obtain a license until connectivity is restored.

NOTE You can add additional systems to a configured floating license at any time by copying the credentials file from the activated system to any other machine that will share the floating license (see [Adding Systems to Configured Floating Licenses](#) on page 16).

Configuring Floating Licenses

Whenever you configure a floating license, you can choose to install the Dragonfly license server on a network share or to use the license server hosted on the ORS public web server. Contact the ORS Support Center for additional information about using the ORS public web server (see [Contacting the ORS Support Center](#) on page 18).

NOTE Unless specified otherwise, your system must be connected to the Internet to configure a floating license.

How to Configure a Floating License

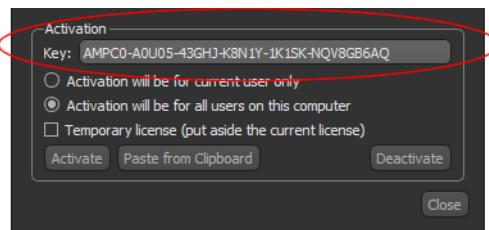
Do one of the following on only one of the systems that will share the floating license:

1. Do one of the following on only one of the systems that will share the floating license:
 - Choose **Help > Activate Product** on the menu bar.
 - Click **Activate the Product** in the License Expired message box.

This message box will appear onscreen if your Dragonfly license has already expired and the application is locked.

The Activate Product dialog appears.

2. Enter or paste the activation key you received in the **Key** box, circled below.

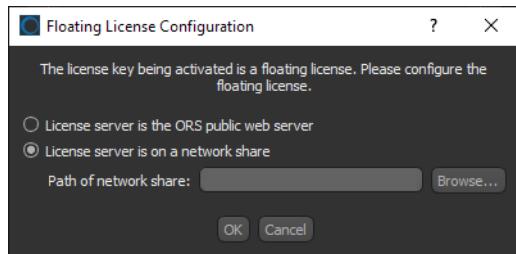


3. Select an activation option — **Activation will be for current user only** or **Activation will be for all users** on this computer.

NOTE See [Activating Temporary Licenses](#) on page 17 for information about activating temporary licenses.

4. Click **Activate**.

The Floating License Configuration dialog appears.



5. Do one of the following:

- Choose **License server is the ORS public web server** if you made arrangements to use ORS' public web server as your license server.
- Choose **License server is on a network share** to install the license server on a network share.

You must then enter the path of the network share on which you want the license server to be installed in the **Path of network share** field. You must have write access to selected network share and all systems that share the floating license must have read access to the network share.

NOTE You can also click **Browse** and then select the network share in the **Path of Network Share** dialog.

6. Click **OK** to configure the floating license and close the dialog.7. Click **Close** to exit the Activate Product dialog.

NOTE Refer to the topic [Adding Systems to Configured Floating Licenses](#) on page 16 for information about adding systems to a configured floating license.

Adding Systems to Configured Floating Licenses

You can add additional systems with an installed version of Dragonfly to a configured floating license by copying the credentials file of the activated system to any other machine that will share the floating license. You should note that all systems that share the floating license must have read access to the network share on which the license server is installed or an Internet connection to ORS public web server.

How to Add Systems to a Configured Floating License

1. If not already done, configure the floating license (see [Configuring Floating Licenses](#) on page 14).
2. Create a copy of the **ORSVisualCred.xml** from the system on which you configured the floating license as follows:
 - If you activated Dragonfly for the current user only, copy the file in the folder: `InstalledDrive:\Users\UserName\AppData\Local\ORS\xx`, where `xx` is the version number.
 - If you activated Dragonfly for all users, copy the file in the folder: `InstalledDrive:\ProgramData\ORS\xx`, where `xx` is the version number.
3. Install Dragonfly on all of the other systems that will share the floating license.
4. Replace the **ORSVisualCred.xml** file on each system with the one you copied from the configured system as follows:
 - If you are activating Dragonfly for the current user only, copy the file to the folder: `InstalledDrive:\Users\UserName\AppData\Local\ORS\xx`, where `xx` is the Dragonfly version number.
 - If you are activating Dragonfly for all users, copy the file to the folder: `InstalledDrive:\ProgramData\ORS\xx`, where `xx` is the Dragonfly version number.

Note In most cases, it is best to copy the credentials file to a network share for easy access.

3. Install Dragonfly on all of the other systems that will share the floating license.
4. Replace the **ORSVisualCred.xml** file on each system with the one you copied from the configured system as follows:
 - If you are activating Dragonfly for the current user only, copy the file to the folder: `InstalledDrive:\Users\UserName\AppData\Local\ORS\xx`, where `xx` is the Dragonfly version number.
 - If you are activating Dragonfly for all users, copy the file to the folder: `InstalledDrive:\ProgramData\ORS\xx`, where `xx` is the Dragonfly version number.

Note Each time an instance of Dragonfly is launched, the license server will check if a “seat” is available.

Activating Temporary Licenses

If some cases, you may need to activate a temporary license. For example, in cases in which you want to evaluate features that are not included with your current license, such as Bone Analysis.

Whenever you activate a temporary license, your current license will be suspended until the temporary one expires. Afterward, your current license will be automatically reinstated.

How to Activate a Temporary License

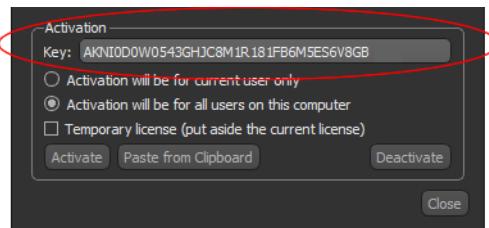
1. Do one of the following:

- Choose **Help > Activate Product** on the menu bar.
- Click **Activate the Product** in the License Expired message box.

This message box will appear onscreen if your license has already expired and the application is locked.

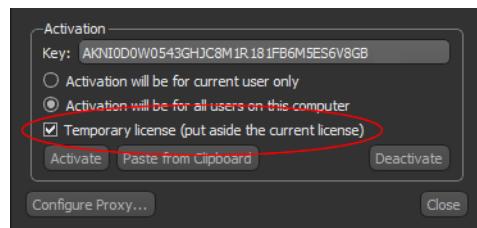
The Activate Product dialog appears.

2. Enter or paste the activation key you received in the **Key** box, circled below.



NOTE Do NOT change the current activation option — **Activation will be for current user only** or **Activation will be for all users on this computer**.

3. Check **Temporary license**, circled below.



4. Click **Activate** to activate the temporary license and put aside the current license.
5. Click **Close** to exit the dialog.

Contacting the ORS Support Center

If you require assistance with any issues you encounter while installing or working with Dragonfly, you can contact the ORS Support Center at:

Phone	+1 514 843 3861
Email	support@theobjects.com
Web	www.theobjects.com/dragonfly/gethelp.html

If you contact the ORS Support Center to report a problem, please have the following information at hand:

- A description of the problem and when it first occurred.
- The full error message and the steps required to reproduce the problem.
- The installed version of Dragonfly.
- The operating system of any affected machine.
- A description of the problem and when it first occurred.

If the problem affects a particular dataset or image, you may be asked to provide a copy of the dataset.