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1. RadarFX First Experience

Thank you for deciding to try RadarFX. RadarFX is a client-server application that can simulate synthetic-aperture radar (SAR), strip SAR, and inverse synthetic aperture radar (ISAR). RadarFX was created using technology from JRM Technologies. The server application, which is based on VR-Vantage and SensorFX, loads a terrain database and, optionally, connects to simulations. A client application requests SAR images from the server. RadarFX includes a sample client application.

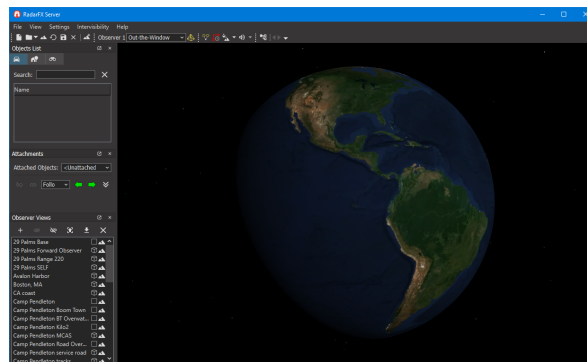
This first experience guide provides a quick guided tour of RadarFX. RadarFX includes the documentation for VR-Vantage and SensorFX, which completely explain how to use those products. This guide provides only enough information about those applications to allow you to use RadarFX. It assumes that you are running on Microsoft Windows. If you have not used VR-Vantage, review *VR-Vantage First Experience Guide* before trying this guide.

1.1. Start RadarFX Server

The RadarFX Server graphical user interface (GUI) lets you load terrains and navigate through them. If it is connected to a simulation, you can select and view the simulation objects it discovers over the network. These capabilities let you set up views of the terrain that can then be served as SAR images to client applications.

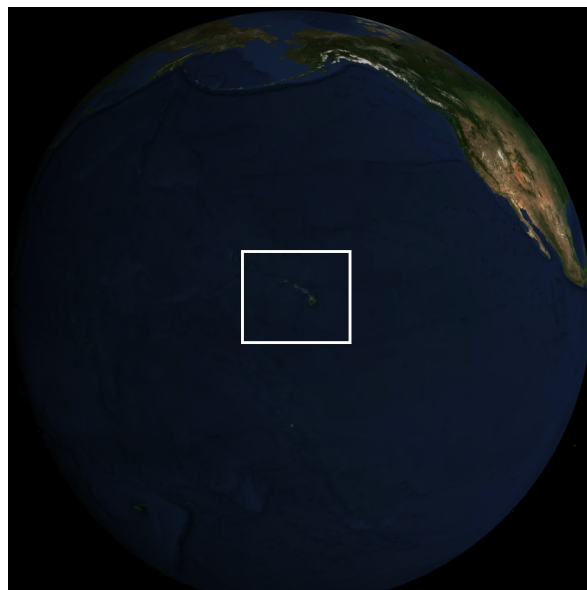
1. On Windows 10, on the Start menu, choose **MAK Technologies > RadarFX Server**. RadarFX Server starts up. The Load Terrain dialog box opens.
2. Select the Load Terrain option.
3. In the Load Terrain list, select *MAK Earth (online).mtf*.
4. Click OK. The map displays the Hawaii terrain (Figure 1).

Figure 1. Ala Moana terrain



5. Hold down the left mouse button and drag the terrain so that the Hawaiian islands are centered (Figure 2).

Figure 2. Hawaii



6. Press the **W** key to zoom in and then drag the terrain to center on Honolulu (Figure 3).

Figure 3. Honolulu



7. Zoom in to the high-resolution Ala Moana inset outlined in Figure 3 and shown in Figure 4.

Figure 4. Ala Moana inset



8. Use the mouse and keyboard to change the eyepoint so that you have a view of the buildings (Figure 5). (Hold down the right mouse button to change the orientation and the **E** key to change altitude.)

Figure 5. Ala Moana buildings

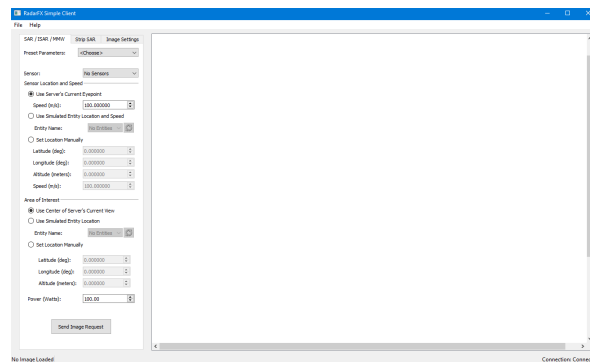


1.2. Start RadarFX Simple Client

RadarFX comes with a client application that you can use to request images from the server.

1. On Windows 10, on the Start menu, choose **MAK Technologies > RadarFX Simple Client**. RadarFX Simple Client starts. RadarFX Simple Client opens and the Connect to RadarFX Server dialog box opens with default values.
2. Click OK. RadarFX Simple Client is ready to use (Figure 6).

Figure 6. RadarFX Simple Client



1.3. Request a SAR Image

The client lets you request SAR images based on the eyepoint in the server, the location of a simulated entity, or a specific latitude, longitude, and altitude. We will use the eyepoint that we set up in the first part of this tutorial. We will also accept all the default values.

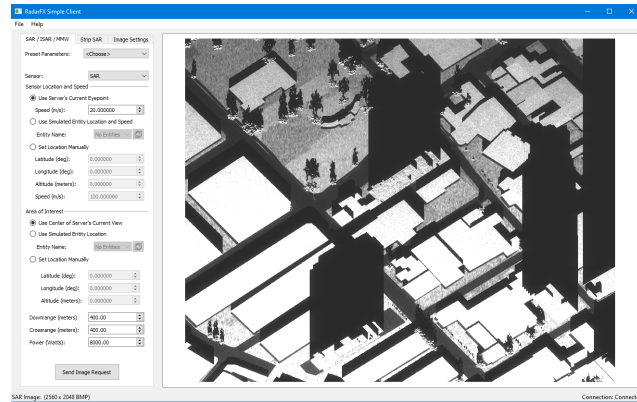
- To request an image, on the SAR / ISAR / MMW tab click Send Image Request.

The status area at the bottom of the client window indicates that you have sent a request and then indicates that the client is waiting for a response. This process can take several minutes.

As the server builds the image, it changes its observer view to SAR and might display portions of the image it is building.

When the full image is returned, it appears in the client window (Figure 7).

Figure 7. RadarFX Simple Client with image



1.4. Learn More

For more on using RadarFX, see the *RadarFX Users Guide*.



2. Installation and Licensing

Your MAK Technologies salesperson has given you a link to the RadarFX installer as well as links to other MAK applications and data to support your first user experience. Download the files. Before you install the applications, note the following possible issues:

- When you install RadarFX on Windows, there may be a delay of up to several minutes from the time you try to run the setup program to the time that an installation dialog box is displayed. If you experience this problem, turning off User Access Control can reduce or eliminate this delay.
- These instructions assume you are familiar with installing Windows applications that use a wizard-style installer.

2.1. Install RadarFX

Before installing RadarFX, download an application installer, a MAK Software Manager installer, and a data package.

- To install RadarFX, run the application installer. Follow the instructions in the installation wizard.

► **To install the data:**

1. Install the MAK ONE Software Manager.
2. Run the MakOneSoftwareManager executable in the `.\bin64` folder.

On Windows 10 and 11, you can also open the Start menu and then choose **MAK Technologies > MAK ONE Software Manager**. (To launch MAK ONE products more easily than the Windows 10 Start menu, please see the *MAK ONE Installation Guide* or this blog entry: [Tech Tip: Starting MAK ONE Applications on Windows 10](#).)

3. Click Select and Install Data Packages in the welcome page.
4. Specify the directory where you saved the data files. The default is your Downloads folder, but you can click the folder icon to navigate to another folder.
5. Select the data files that you want to install.



MAK Technologies recommends that you install all of the data files if you have the space and are not absolutely sure which files you require.

You must install the Core data for RadarFX to function. To have access to other terrains and to see anything other than notional models, install the other data packages provided by MAK. If you do not install any other data, it is assumed that you are providing your own models and terrains.

6. Optionally, choose the location where you want to install the data.

MAK recommends that you install the files in the default location. While MAK ONE products allow for diverse installations, the typical use is the standard installation. If you require a more complex installation, refer to the *MAK ONE Installation Guide*.

7. If you have a previous installation of data for the same compatibility version, you are prompted to choose whether to back up the previously installed data, delete it, or overwrite it. See "2.1.1 Options When Installing a Data Package" below.
8. Click Install. The MAK ONE Software Manager shows the progress of the data installation.
9. When the installation is complete, click Exit.

2.1.1 Options When Installing a Data Package

When installing a data package using the MAK ONE Software Manager, if you have no preexisting installations of that compatibility version, it simply installs the data files in the `./SharedData/##/latest` folder (where `##` is the compatibility version).

If there is already a previous release of the same compatibility version installed, however, you are prompted to choose whether to back up, delete, or overwrite the data from the previous release.

- **Backup.** If you install a newer release and choose to create a backup the previous release, the files in the *latest* directory are moved to a new directory named for the data version's date in the same compatibility folder and the new files are then installed in the latest folder. For example, the old files move to `./SharedData/16/2022-11-13` and the new files are installed in `./SharedData/16/latest`.

Creating a backup is the recommended option in most circumstances. It allows all MAK ONE applications to use the newest data, while also giving you the option to revert to a previous release using command-line options or setting a Windows environment variable. See the *MAK ONE Installation Guide* for details.

- **Delete.** The installer deletes the old data from the *latest* directory and then installs the new data.
- **Overwrite.** The installer overwrites the previous data files in the *latest* directory with the newer ones you chose to install. It also adds files that are new and ignores files that were previously installed if the package you are installing does not include that file.

2.2. Setting Up the License Manager

To use a MAK product, you must install the MAK License Manager and get a license for your product. Before you can use a MAK product, you must obtain a valid license file and specify the license server.

- To install the MAK License Manager, run the installer.

The general procedure for configuring license management is as follows:

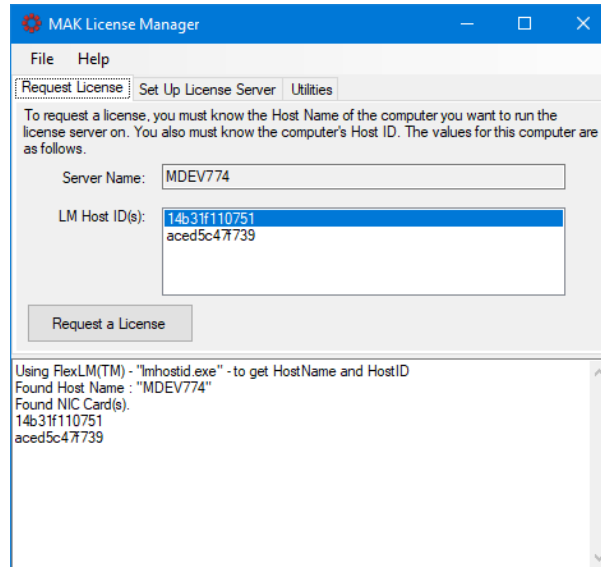
1. Identify the name and ID of the license server and request a license file.
2. Put the license file in the *MAK/MAKLicenseManager* directory on the license server.
3. Run the license server.
4. Specify the license server location.

2.2.1 Identify the Host ID and License Server Name

For simplicity, use the computer on which you installed RadarFX as the license server. To find out the host ID and license server name:

1. On the Start menu, choose **MAK Technologies > MAK License Manager**. The MAK License Manager utility opens (Figure 8).

Figure 8. License Manager



2. Select the Request License tab. It displays the server name and the IDs for your network cards.
3. If you have more than one network card, select the one that you want to use as Host ID.
4. Send the host ID and hostname to your MAK salesperson. MAK will e-mail you a license file.

2.2.2 Put the License File in the *MAKLicenseManager* Directory

When you receive your license file, put it in the *MAKLicenseManager* directory on the license server. The file name should have the extension *.lic*. If it does not, please contact keys@mak.com to clarify why it did not follow this convention.

2.2.3 Run the License Server

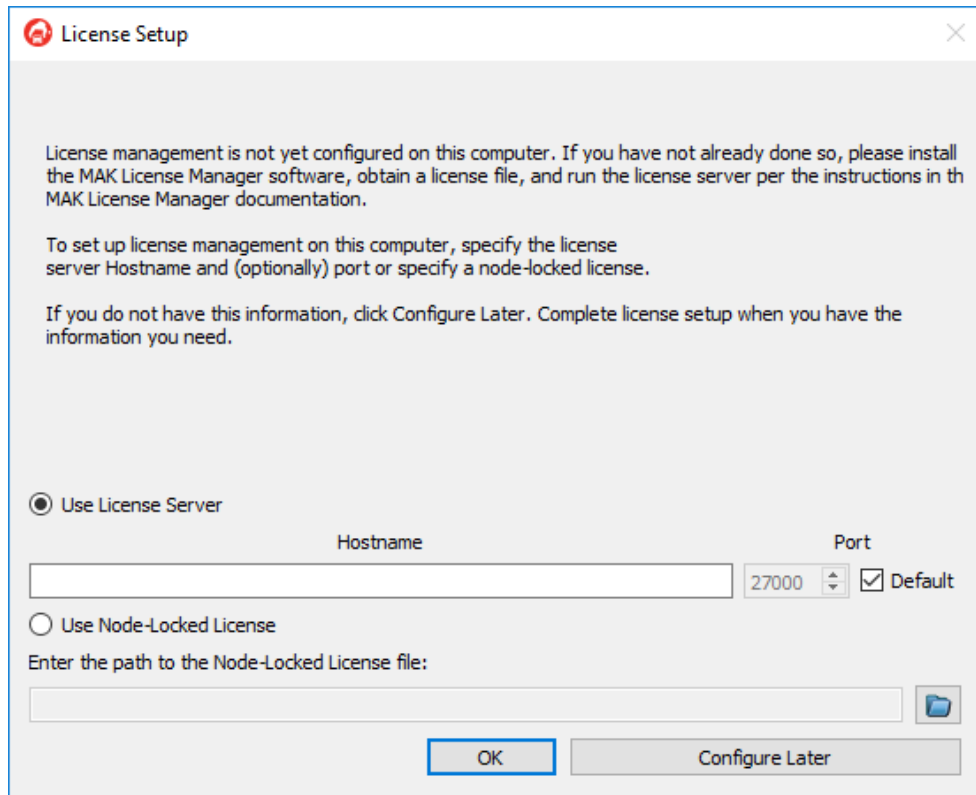
- To start the license server daemon, on the server machine only, execute **runLm** from the *MAKLicenseManager* directory.

Shutting Down the License Server

- To force all applications to check in their licenses and shut down the license server daemon, run **lmdown**.

2.2.4 Specify the License Server

The first time you run a MAK application on a computer, the License Setup dialog box opens (Figure 9). It prompts you to enter the hostname of the license server and optionally, a port number.

Figure 9. License Setup dialog box

The dialog box is titled "License Setup" and contains the following text:

License management is not yet configured on this computer. If you have not already done so, please install the MAK License Manager software, obtain a license file, and run the license server per the instructions in the MAK License Manager documentation.

To set up license management on this computer, specify the license server Hostname and (optionally) port or specify a node-locked license.

If you do not have this information, click Configure Later. Complete license setup when you have the information you need.

There are two radio buttons for selection:

- ☒ Use License Server
- ☐ Use Node-Locked License

For the "Use License Server" option, there is a "Hostname" text box and a "Port" section with a spinner box set to "27000" and a checked "Default" checkbox.

For the "Use Node-Locked License" option, there is a text box labeled "Enter the path to the Node-Locked License file:" with a folder icon button to its right.

At the bottom, there are two buttons: "OK" and "Configure Later".

1. Type the hostname in the Hostname box.
2. Click Add License Server. The application starts.



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