



MAK ONE

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1. RFView® for MAK ONE First Experience

Thank you for deciding to try RFView® for MAK ONE.

RFView for MAK ONE is a client-server application that simulates synthetic-aperture radar (SAR). RFView for MAK ONE was created in conjunction with Information Systems Laboratories, Inc. (ISL), taking advantage of their industry-leading RFView® software. There is the SAR server, RFView® Sidecar, and the terrain server, VR-Vantage 3.1.1 with the RFView for MAK ONE plug-in. You load a terrain database and, optionally, connect to a simulation. A client application requests SAR images from the server. RFView for MAK ONE includes a simple client application as an example, but it is expected someone else will develop a client application as part of their solution.

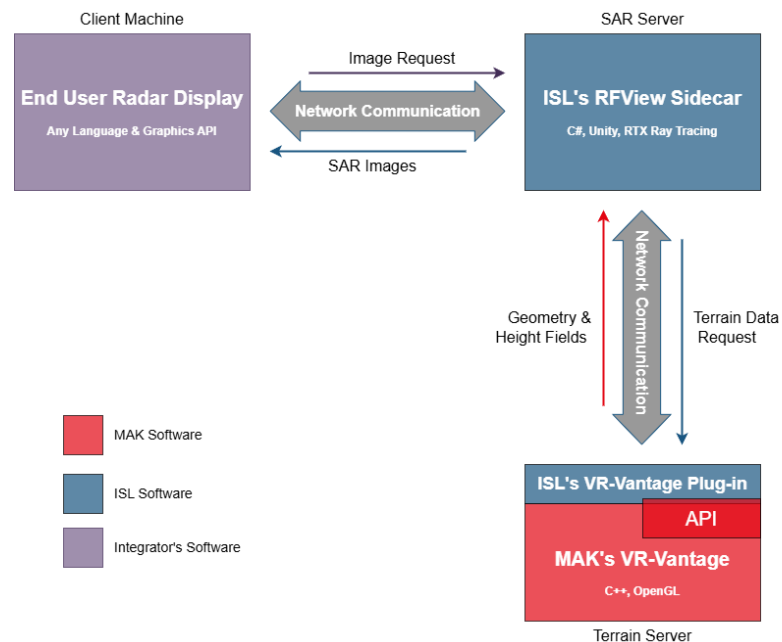
This first experience guide provides a quick guided tour of RFView for MAK ONE, including the RFView® Simple Client. This guide provides only enough information about VR-Vantage to allow you to use RFView for MAK ONE. It assumes that you are running on Microsoft Windows. If you have not used VR-Vantage, review the *VR-Vantage First Experience Guide* before trying this guide. This guide also does not provide detailed information about using ISL's RFView Sidecar. The user documentation for that product is included in the installation and you should consult it for directions on its use.

1.1. Product Interactions and Data Flow

RFView for MAK ONE is a collaboration between MAK and ISL. RFView for MAK ONE enables a client application to send a request through RFView Sidecar and receive a SAR image from the server of the scene shown in VR-Vantage.

- The client application is the end user radar display, for example, an instructor operator station, a radar training pod, or a flight simulator. RFView for MAK ONE includes the RFView Simple Client, which demonstrates the basic functionality of such an application.
- The communication between the SAR server (RFView Sidecar) and the terrain server (VR-Vantage):
 - Uses a socket interface.
 - Does not need to rebuild when one side changes.
 - Avoids language compatibility issues.
 - Can be different computers or a local loopback.
- The client machine and SAR server are typically different computers.

Figure 1. Data Flow



The flow of data is:

1. The user of the radar display application on the client machine configures the sensor location and then requests an image from the SAR server.
2. RFView Sidecar on the SAR server receives the requests and in turn requests the terrain data from VR-Vantage on the terrain server.

3. VR-Vantage returns the geometry and height field information to RFView Sidecar.
4. RFView Sidecar sends the SAR image to the radar display.

1.2. Start VR-Vantage with RFView for MAK ONE

With the RFView for MAK ONE plug-in for VR-Vantage, you can load terrains and navigate through them. When it is connected to a simulation, you can also view the simulation objects it discovers over the network. This capability enable you to set up views of the terrain that can then be served as SAR images to client applications.

You must have an internet connection to proceed.

- To start the application from the Start menu, choose **MAK Technologies > RFView for MAK ONE**. VR-Vantage launches in the foreground and loads the MAK Earth (online) terrain. RFView Sidecar launches minimized in the background.

 RFView Sidecar is minimized because you do not need to change the parameters for this experience. If you are interested in making changes, consult ISL's RFView documentation that is included in the RFView for MAK ONE installation.

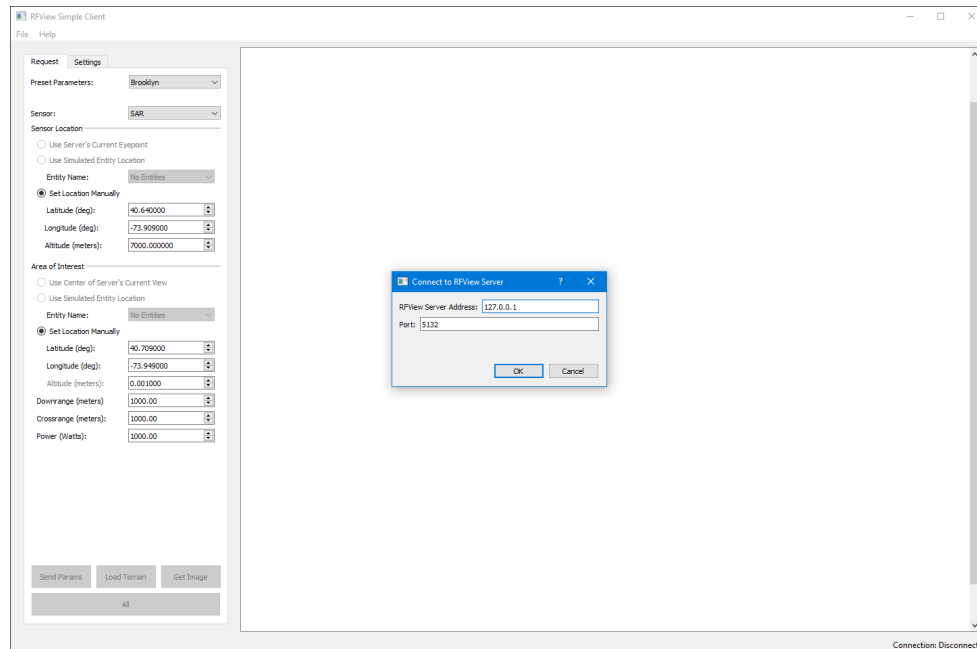
1.3. Start RFView® Simple Client

RFView® for MAK ONE comes with a client application that you can use to request images from the server.

- **To start the simple client:**

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

Figure 2. RFView Simple Client



1.4. Request a SAR Image

Use the client to request SAR images based on the eyepoint in the server, the location of a simulated entity, or a specific latitude, longitude, and altitude. The image includes the geometry shown in VR-Vantage at the time of capture. If there are any entities in the scene, those are included as well. For this first experience, we simply use one of the preset parameters and accept the default values.

- The Send Params button send the parameters of where the sensor is and where it is looking. It does not re-render the image.
- The Load Terrain button loads the terrain at the specified location. It does not render the image.
- The Get Image button gets the SAR image at the eyepoint.
- The All button runs all of these processes.

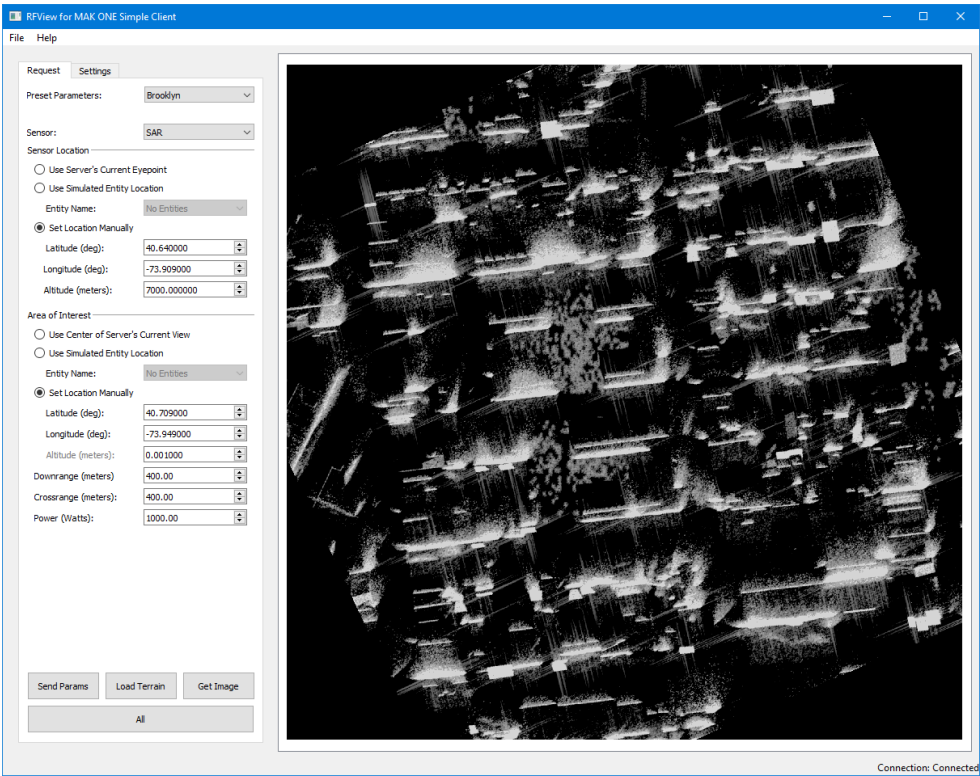
► To request an image:

1. On the Request tab, select an option from the Preset Parameters list, for example, Seattle or Brooklyn.
2. Click All.

The status area at the bottom left of the client window indicates that you have sent a request and it is loading the image. This process can take a minute or so. As the RFView Simple Client builds the SAR image, the VR-Vantage window displays the area that you selected from the Preset Parameters list.

When the full image is returned, it displays in the client window (Figure 3).

Figure 3. RFView Simple Client with image of Brooklyn





2. Installation and Licensing

Your MAK Technologies salesperson has given you a link to the RFView® for MAK ONE installer as well as links to other MAK ONE 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 RFView for MAK ONE 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 RFView® for MAK ONE

- To install RFView for MAK ONE, run the application installer. Follow the instructions in the installation wizard, which includes accepting the license agreements for both RFView for MAK ONE and ISL's RFView Sidecar.

You must also have data installed to run RFView for MAK ONE. If you do not already have an installation of MAK Data version 18, download the MAK Software Manager installer and the data package.

► **To install the data:**

1. Install the MAK ONE Software Manager for your operating system.
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 RFView for MAK ONE 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/18/2024-03-14* and the new files are installed in *./SharedData/18/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.

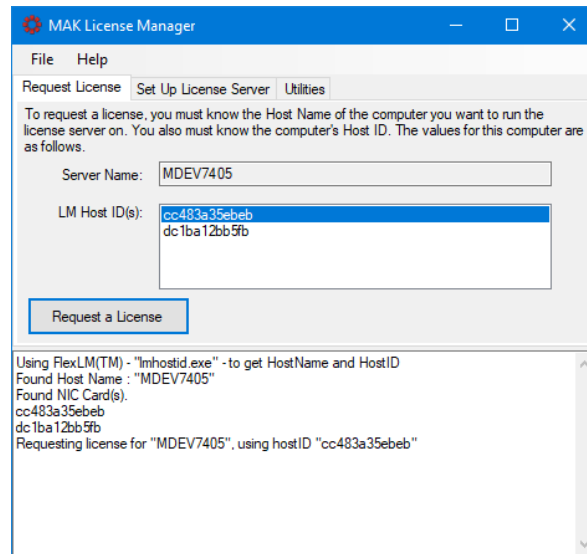
The general procedure for configuring license management is as follows:

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 RFView for MAK ONE 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 4).

Figure 4. 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

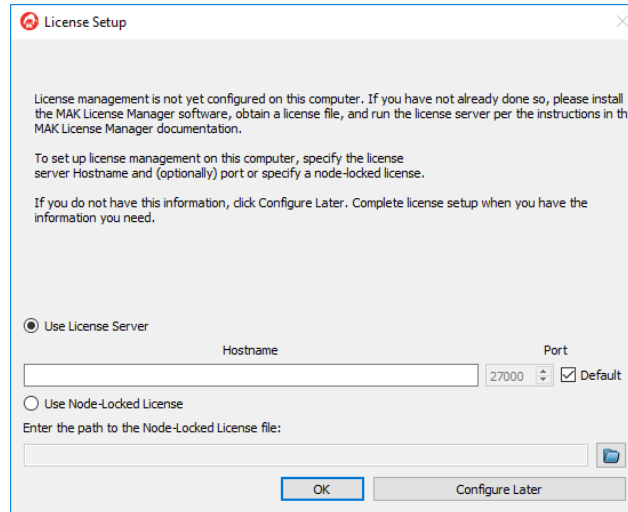
- To start the license server daemon, on the server machine only, execute **runLm** from the *MAKLicenseManager* directory.

Shutting Down the License Server

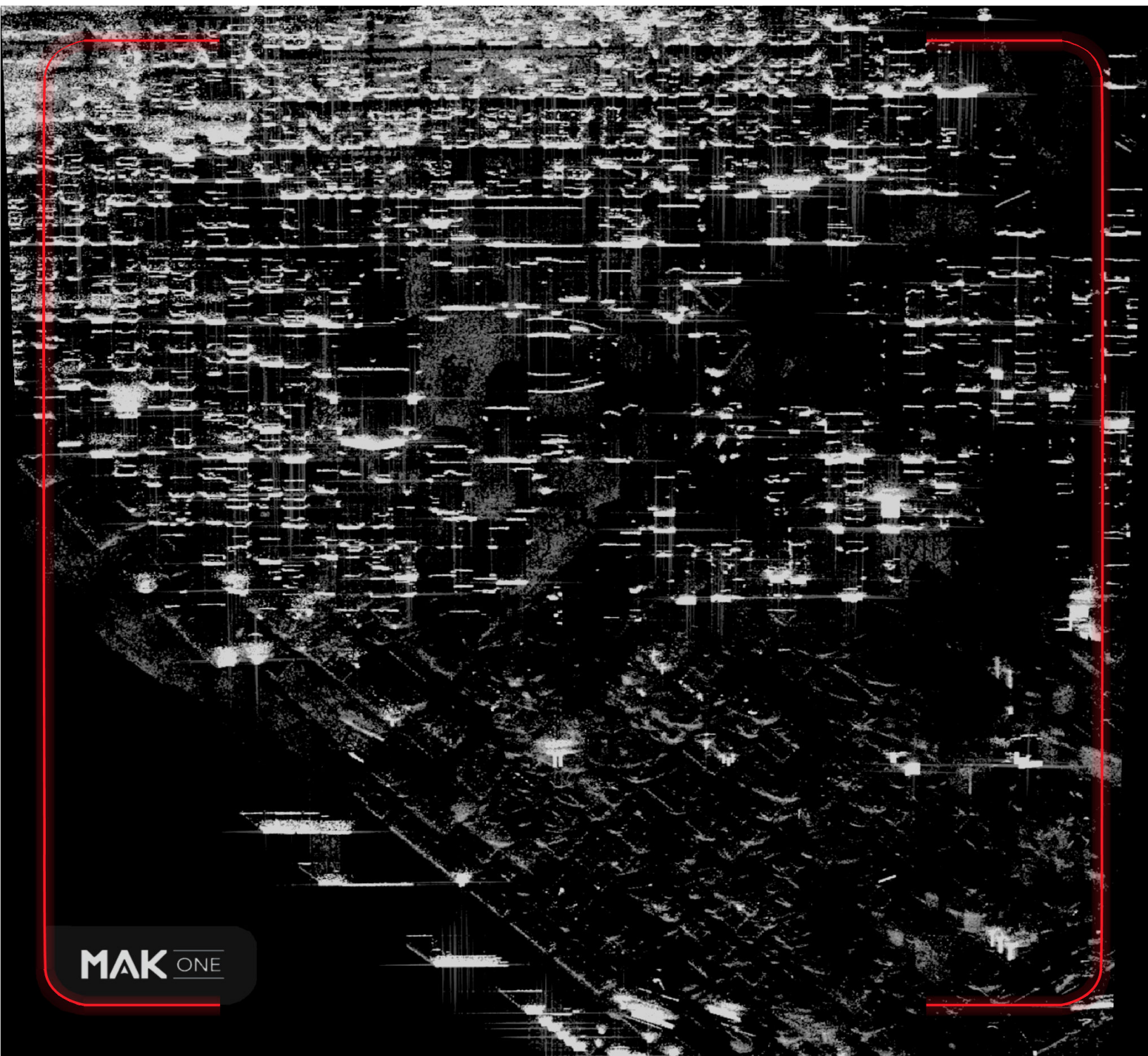
- To force all applications to check in their licenses and shut down the license server daemon, run **lmddown**.

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 5). It prompts you to enter the hostname of the license server and optionally, a port number.

Figure 5. License Setup dialog box

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



MAK ONE

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