



PikeOS 5.0

Installation Guide

Document Revision 5.0.3

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Installation Considerations

Host System Requirements for Linux

The PikeOS distribution comes with a complete set of tools for the development and configuration of PikeOS-based systems. These tools are currently supported in a cross-development environment running on a standard PC Linux host. Although the tool chain is generally independent of the Linux distribution being used on the PC, a number of software packages are required that may not be installed by default in the Linux distribution. These are listed in the following table, along with package version numbers which have been verified to properly work with PikeOS. Thus, before installing the PikeOS distribution, you should check whether these packages are present on your host system, and install or update them as required.

Package	Description
glibc 2.11.3 or newer	C library. Required.
JRE 8 or compatible	Java Runtime Environment. Required.
GTK 3.x	The GIMP Tool Kit, needed by the Eclipse framework. Required.
libxtst6	Needed by the Eclipse framework. Required.
libasound2	ALSA sound library, required for QEMU.
libX11	X Windowing system library, required for QEMU. Its components xcb, Xau and Xdmcp are also required.
GNU Bash 4.1 or newer	Shell command line interpreter. Required.
Perl 5	Programming language. Required.
kermit	Used as terminal emulator for serial connection to target. Optional.
minicom	An alternative to kermit for serial connection to target. Optional.

Contrary to previous versions, PikeOS and CODEO require a 64-bit Java Runtime Environment. 32-bit is no longer supported!

For more details please see the support FAQ, entry “CODEO Installation Considerations” at

➔ <http://www.sysgo.com/support/> ⬅

Host System Requirements for Windows

PikeOS can be used on the following variants of the Windows operating system: Windows 7, Windows 8 and Windows 10.

Just like PikeOS for Linux, a 64-bit Java Runtime Environment version 8 or compatible has to be installed!

Installation

The PikeOS installation medium contains the PikeOS core components and the CODEO IDE. For easy installation an interactive installation program can be found in the root directory. Please note that you have to install PikeOS before installing CODEO.

PikeOS Installation

Windows:

It is recommended to install PikeOS from a full Administrator account. Navigate to the top level directory on the PikeOS installation medium, then double-click on the following application: `PikeOS-5.0-Windows-Setup.exe`

To display the command line options of the installer open a command prompt window and type:

```
PikeOS-5.0-Windows-Setup.exe --help
```

Linux:

You need root privileges during the installation. Please mount the PikeOS installation medium, then change into the mount directory and run the installation program. Assuming the medium has been mounted on `/media/dvdrom`, the following commands can be entered from a terminal window in order to start the installation:

```
cd /media/dvdrom
sudo ./PikeOS-5.0-Linux-Install.sh
```

(to display the command line options of the installer add: `--help`)

Note: Some Linux distributions mount with the `noexec` option which disables the execution of files on the installation medium. In this case you have to remount using `mount -o remount,exec /media/dvdrom`

The following screen (fig. 1) will appear:

Please click on the “Next>” button in order to proceed. At this point, you will be asked to accept the terms of the PikeOS license agreement in order

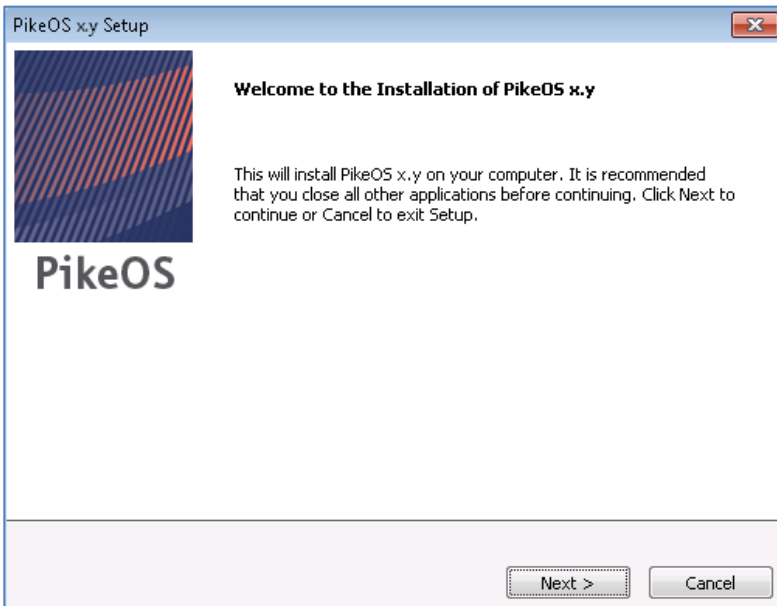


Figure 1: PikeOS Installation Start

to proceed with the installation. If you accept, you will be asked to enter the installation key for the media (fig. 2). In the next step you can select the PikeOS components you wish to install (fig. 3).

Then the PikeOS installation base directory will be shown (fig. 4).

Windows: Please note that the installation directory must not contain spaces or special characters.

Linux: Please note that the installation directory is fixed and cannot be modified.

After confirming the installation directory with "Next>", the installation details will be shown (see fig. 5). Upon accepting the installation settings, the installation process will begin and progress will be displayed (see fig. 6).

Windows: If not already present on your computer, the Cygwin environment will also be installed at that time.

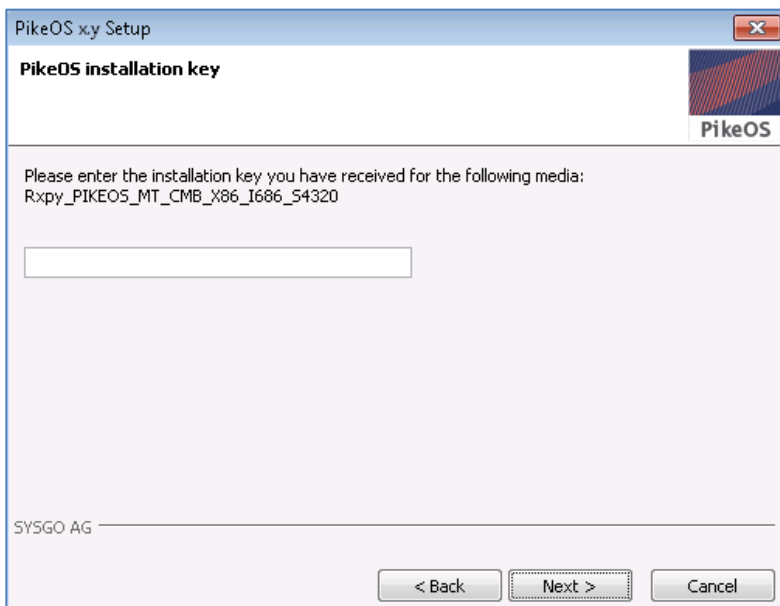


Figure 2: Entering the Installation Key

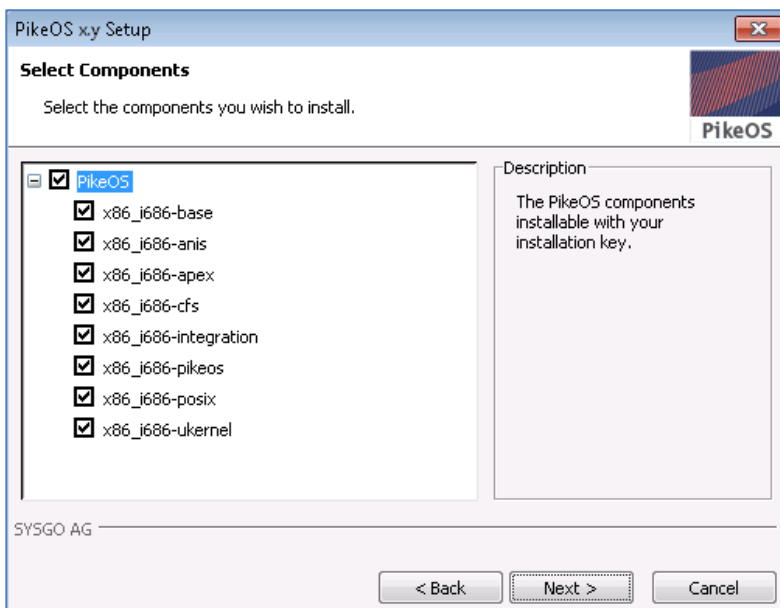


Figure 3: PikeOS Component Selection

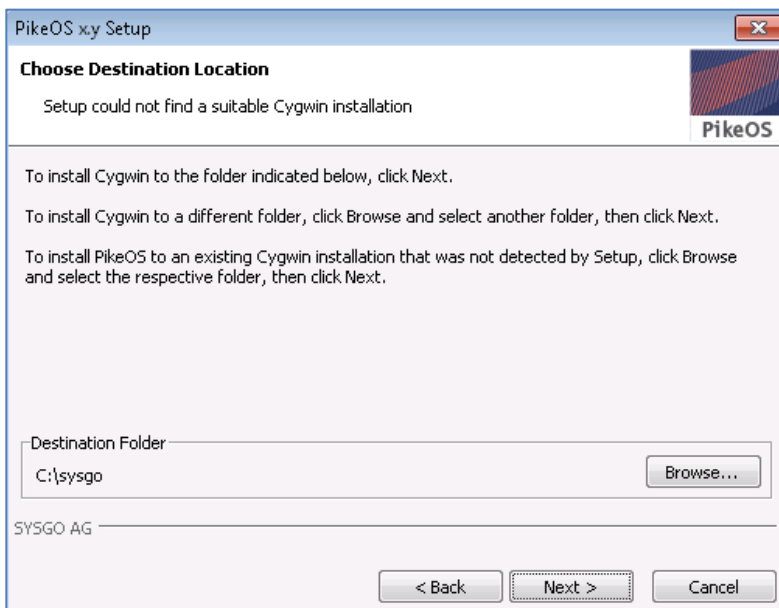


Figure 4: Select Installation Location

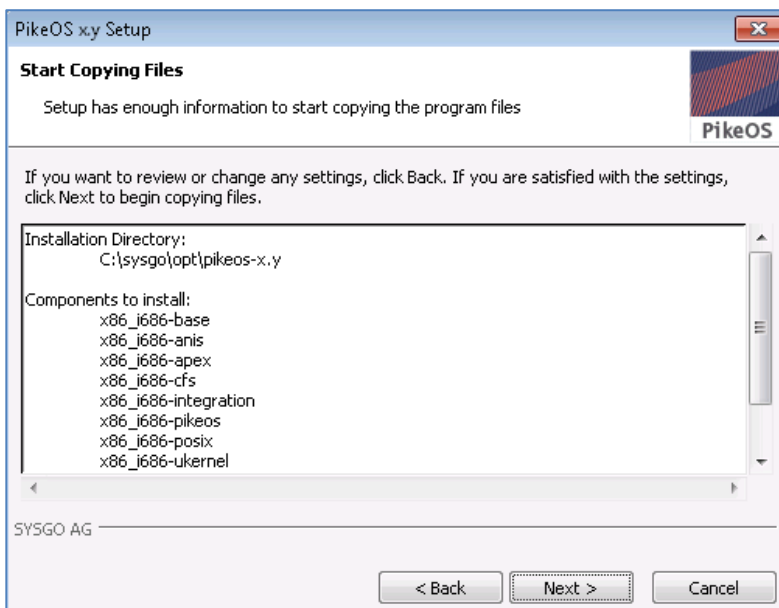


Figure 5: PikeOS Installation Details

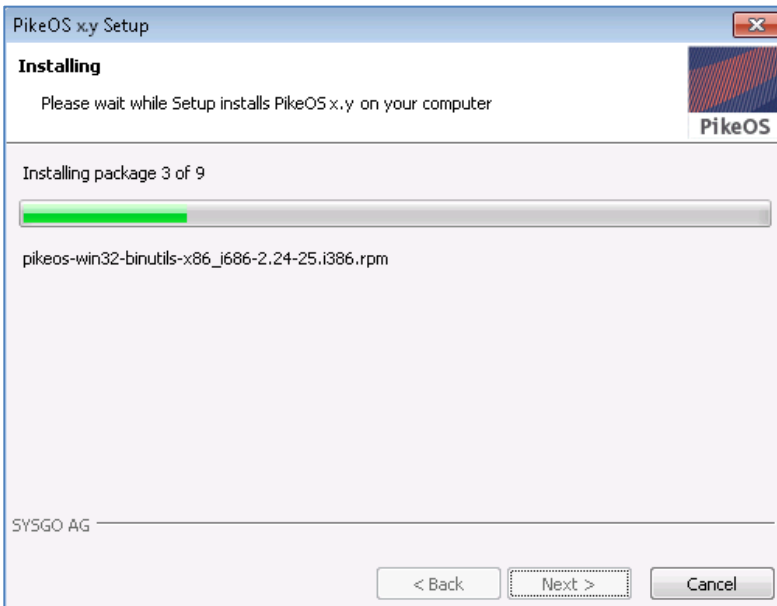


Figure 6: PikeOS Installation in Progress

Linux/Android Personalities

The Linux and Android personalities are not part of this PikeOS installation and are shipped on a separate medium.

Installing a Hotfix

When installing a hotfix, please note that the main product needs to be installed first, and after that the hotfix must be installed!

Installing Multiple Versions of PikeOS

PikeOS installations for different targets may coexist on your development system, so you don't need to take any special precautions when installing an additional target platform. The same applies for installing different versions of PikeOS for one target platform. Just repeat the standard installation procedure with the other installation media. Next time when configuring a PikeOS project, you will be able to select the newly installed platform or version.

Please note that the above only applies to unique different PikeOS versions. You cannot install e.g. version X.Y twice or more on one system! This also applies to Service Releases, please uninstall the previous (Service) Release before installing the new one!

Verifying the Installation

The managing of PikeOS components is based on the well-known package man-

agement tool RPM. PikeOS brings its own RPM binary called `pikeos-rpm`. This tool operates entirely on its own package database, so you neither have to install RPM on non-RPM based distributions, nor do you have to be afraid that your installation could be compromised in any way by using `pikeos-rpm`. This section lists a couple of useful RPM commands and queries.

By entering the following command after the installation has been completed, you will receive a list of all packages installed:

```
/opt/pikeos-5.0/bin/pikeos-rpm -qa
```

Package information can be displayed, too. To display all information about the installed package scripts, for instance, you enter:

```
/opt/pikeos-5.0/bin/pikeos-rpm -qi pikeos-scripts
```

To determine the package providing a certain file, enter:

```
/opt/pikeos-5.0/bin/pikeos-rpm -qf /opt/pikeos-5.0/bin/muxa
```

Verifying the Hardware Setup

In order to successfully develop with PikeOS, your hardware must be set up properly. For example, many embedded targets are configured and booted by some sort of boot loader which is accessed via a serial connection. Boot images are usually downloaded from the development host to the target across an Ethernet line. TFTP, BOOTP, and DHCP are service protocols which are typically used for this purpose.

To verify your hardware setup, read the corresponding sections in the *PikeOS Platform Manual* for your target hardware. There are precompiled binaries available to test the general infrastructure of your setup and the working order of your target.

To learn more about setting up required network servers, see the *PikeOS User Manual*. You should also read the documentation that came with your distribution.

Uninstalling PikeOS

Windows:

Uninstall PikeOS through the Windows Control Panel.

Linux:

An uninstall of PikeOS is done by simply deleting the PikeOS directory you want to be removed from `/opt`, e.g.:

```
rm -rf /opt/pikeos-5.0
```

In this manner all PikeOS components are deleted from your system. Only the data specific to the individual users' projects will be retained. Alternatively, you may run the script `uninstall-pikeos`.

CODEO Installation

Windows:

Navigate to the top-level directory of the CODEO installation medium, then double-click on the following application: `CODEO-7.0-Windows-Setup` (the

actual filename is CODEO-7.0-Windows-Setup.exe).

To display the command line options of the installer open a command prompt window and type:

```
CODEO-7.0-Windows-Setup.exe --help
```

Linux:

You need root privileges during the installation. Please mount the CODEO installation medium and change into the mount directory. Assuming the CODEO medium has been mounted on /media/dvdrom, the following commands can be entered from a terminal window in order to start the CODEO installation:

```
cd /media/dvdrom  
sudo ./CODEO-7.0-Linux-Install.sh
```

(to display the command line options of the installer add: --help)

The following screen will appear (fig. 7). Please click “Next>” to continue. At this point, you will be asked to accept the terms of the CODEO license agreement in order to proceed with the installation. If you do not accept, the installation process will be aborted.

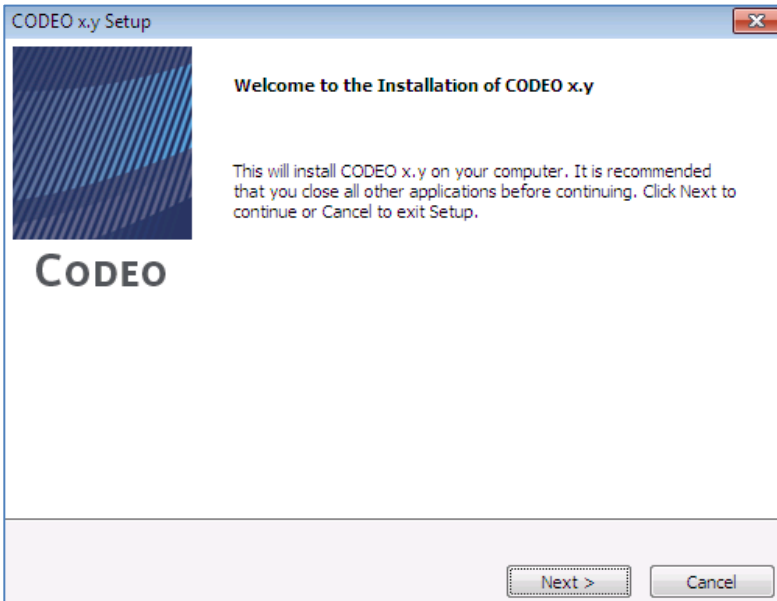


Figure 7: CODEO Installation Start

Windows: You might be asked to update your Cygwin installation. If you have installed the Cygwin version delivered with PikeOS this can be safely skipped.

The path to the Java VM can be either selected manually or detected by the installer.

The next screen (fig. 8) shows where CODEO will be installed (this path is fixed and cannot be changed). When you click “Next>”, the installation process begins and progress is displayed.

CODEO installation is now complete and ready for usage.

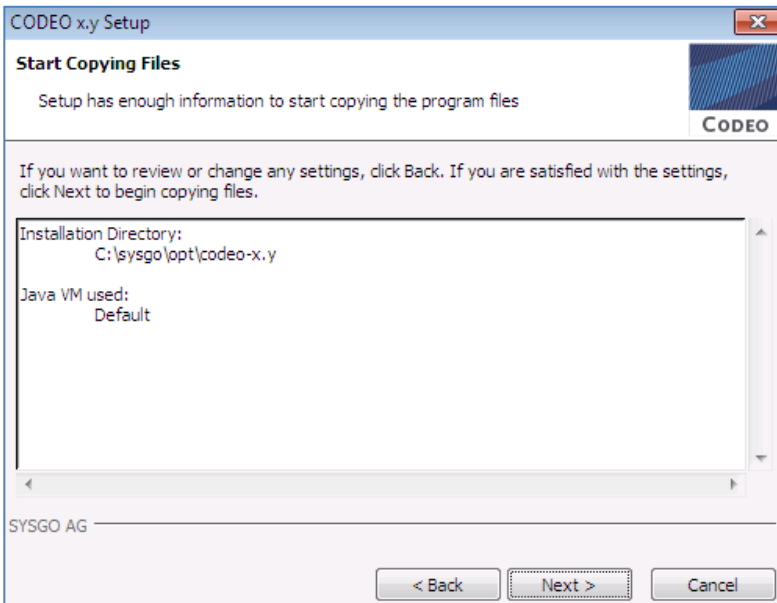


Figure 8: CODEO Installation Details

PikeOS Licensing System

To match different business needs, SYSGO offers several licensing schemes for PikeOS: “single-user”, “flexible” and “site”. Technically, all schemes have in common that one or more license servers run at your site that authorize the usage of the PikeOS development environment. Each license server operates on one or more license files defining the licensed features. These files are generated for you by SYSGO based on information that you have provided to SYSGO (the so-called “Host ID”). For “flexible” and “site” licenses, one license server can serve multiple PikeOS installations. If a “single-user” licensing model has been chosen, then a license manager must be running on each physical machine where PikeOS is used.

PikeOS is shipped with an installation license file. This license allows unrestricted usage of PikeOS for a maximum of 30 days. Within this time frame the product needs to be activated which is described below.

License management services under PikeOS are performed by the LM-X license management system. The installer for the license manager is contained on the installation medium for PikeOS and must be run separately to install LM-X. The license manager can be installed on any machine in the network.

1. Installing the License Manager

1.1 Windows

On your PikeOS installation medium look for the folder “licensing”. Run the installer `lmx-enduser-tools_win64_x64.msi`. When asked for the “vendor library” (see image below) use the “Browse...” button to navigate to the “licensing” folder on the installation medium. Here, you find the DLL `liblmxvendor.dll`. Select this file and continue.

If you select “Install LM-X license server as a service”, the license server is started automatically each time the Windows system reboots. Otherwise you have to start the server manually.

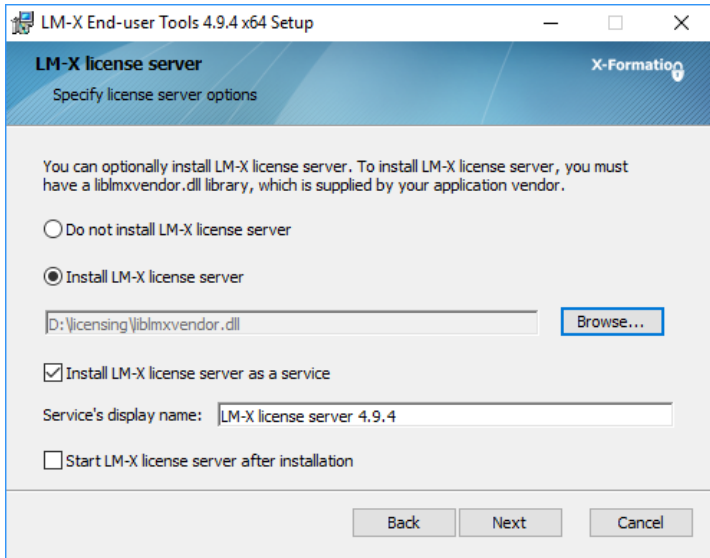


Figure 9: Gathering Installation Information on Windows

1.2 Linux

On your PikeOS installation medium look for the folder “licensing”. Run the installer `lmx-enduser-tools_linux_x64.sh`. When asked for the “vendor library” enter the path to the “licensing” folder on the installation medium, e.g. `/mnt/licensing` and press Enter. Select the file `liblmxvendor.so` at the next prompt and continue.

The installer will ask you whether you want to install a startup script. If you answer “Y”, a script is generated to start the license server automatically each time the Linux system reboots. Otherwise you have to start the server manually.

2. Collecting the “Host ID” for Licensing

2.1 License Manager Running on Windows

To obtain your license file, you must first get the necessary information (hereafter called “Host ID”) from the host machine which will act as your license server. To do this, start the LM-X Configuration Tool. From the “START” menu and select “X-Formation > LM-X Configuration Tool”. Remark: Executing the tool will trigger a registry change which requires administrator privileges.

In the LM-X Configuration Tool, select the “Hostid” tab, then save the information to a file using the “Save To File” button (fig. 10).

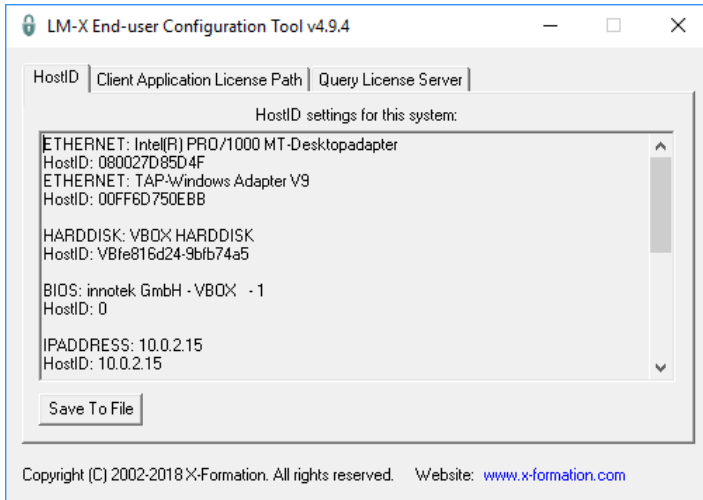


Figure 10: Gathering “Host ID” Information

2.2 License Manager Running on Linux

Issue the following command from a terminal window:

```
/<path to the lmx installation>/lmxendutil -hostid >
hostid.txt
```

2.3 Dealing with Virtual Machines

If you intend to use PikeOS with a “single-user” license in a virtual machine you have to generate two “Host ID” files (selecting steps 2.1 and/or 2.2 as applicable): One is generated from the license data collection tool within the VM and the other from the license data collection tool outside of the VM. Please indicate which of them was generated outside of the VM when sending them to SYSGO. For “flexible” or “site” licenses this is not required.

3. Communicating the “Host ID” information to SYSGO

Please e-mail the hostid.txt file(s) to licensing@sysgo.com together with either your order reference or the installation license file. On reception, SYSGO will create your license file based on your ordering information and “Host ID” information and send it to you.

4. Installing your License File

License files are in plain text format with Unix style line breaks. They are simply copied into the same folder where the LM-X license server is installed. Then you restart the license server and you are done.

5. Starting the License Server

5.1 Windows

If you opted to install the LM-X license server as a service during the LM-X enduser tools installation, you are done. The service will be started automatically each time the machine reboots.

Otherwise you must manually start the server. Open the “START” menu and select “X-Formation > Start LM-X license server”. The server can be stopped by selecting “X-Formation > Stop LM-X license server” from the “START” menu.

To make sure the server is running and your licenses are available, select the “Query License Server” tab of the configuration tool. Enter the name of the server and the port number (usually 6200), then press the “Perform” button. The available licenses will be displayed as follows (fig. 11):

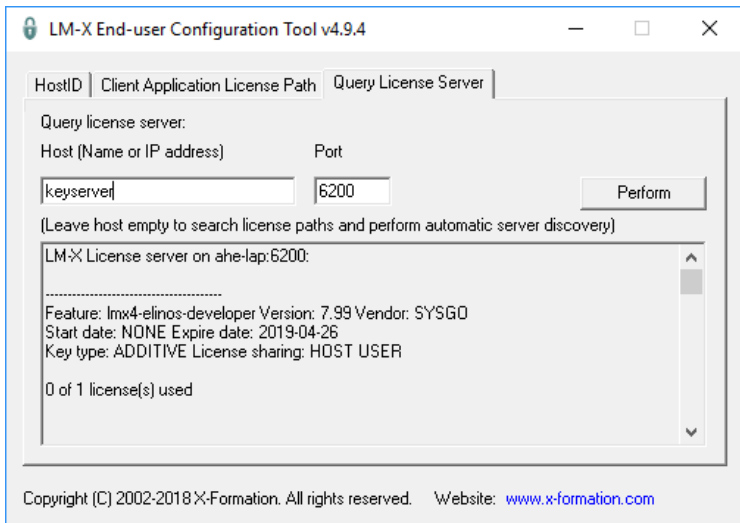


Figure 11: Querying the License Server

5.2 Linux

If you opted to install a startup script for the LM-X license server during the LM-X enduser tools installation, you are done. The service will be started automatically each time the machine reboots. The server can be started and stopped by issuing:

```
service lmxserv494 start/stop
```

on the command line.

Otherwise you must manually start the server like this:

```
/<path to the lmx installation>/lmx-serv
```

Depending on the permissions set on the installation folder you may need root privileges. The server will run in the background and log its activity in the file `/<path to the lmx installation>/lmx-serv.log`.

6. Using PikeOS

PikeOS tools must be told which license server to use.

For Windows start the license manager configuration tool and select the “Client Application License Path”, then press “Add Network Host” (fig. 12). Host is localhost or 127.0.0.1 (for a local license server, otherwise enter the remote server’s name) and Port is 6200 (unless you are using a remote license server configured with a different port number). Click on “Save Changes” after you have completed the configuration.

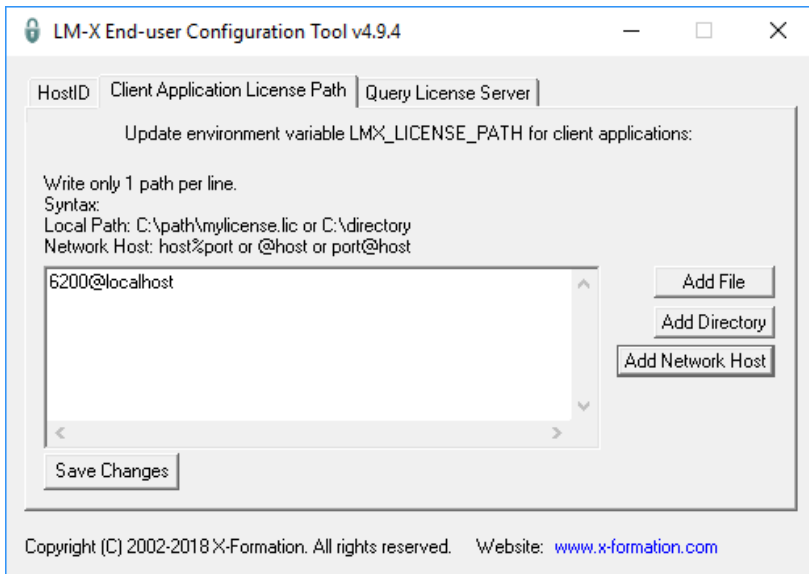


Figure 12: Configuring the Path to the License Server

For Linux enter the following command prior to using PikeOS:

```
export SYSGO_LICENSE_PATH=6200@host
```

“host” is the host name or IP address of the computer on which the license server is running. “6200” indicates the port number on which the license server should

be contacted. It may be handy to place the definition of SYSGO_LICENSE_PATH in your shell startup file, for instance in the “.profile”.

Congratulations, you are now ready to use PikeOS!

The complete end-user manual for LM-X can be found at <https://docs.x-formation.com/display/LMX/LM-X+End+Users+Guide>

License Manager Troubleshooting

If you encounter any problems installing or using your PikeOS license key please check the log file of the license manager.

Please revise your network configuration if the log file does not list any connection attempts at all. A firewall might have blocked the license requests.

If the problem cannot be resolved please contact SYSGO using the support website or licensing@sysgo.com and include the log file of the license manager.

Further Information

Please refer to the product documentation for additional information. The documents are located in the “documentation” folder of the installation medium and on your hard disk after installation.

Answers to frequently asked questions (FAQ) and resolutions to known issues are updated on a regular basis. These are available online at <http://www.sysgo.com/support/>

Product support is available online at <http://www.sysgo.com/support/>

Product updates will be provided for download on <https://www.sysgo.com/downloadserver/>

To access these websites please login using your account as stated on the delivery document.



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