

Application Master Password Management

For Thermo Scientific Open Inventor Software Toolkit Independent Software Vendors (ISV)

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Introduction

Thermo Scientific™ Software products are password-protected. To run Thermo Scientific Software products, a valid license string must be available at program run-time.

- For node-locked/floating development licenses, the license string allows Thermo Scientific Software products to run on a uniquely identified platform.
- Independent Software Vendors (ISVs) with an Application Developer Agreement (ADA) in place cannot rely on Thermo Scientific Software password delivery to install and run their applications when they need to distribute or deploy Open Inventor applications on many computers or on the cloud. They need to manage the licensing of their application programs using their own tools. To allow this, Thermo Fisher Scientific can provide an application Master Password to ISVs who have signed an active ADA.

Notice

Please contact your Thermo Fisher Scientific sales representative to get a copy of the ADA. The ISV is responsible for ensuring that all terms and conditions of that agreement are met. For security reasons, the application Master Password must be shown only to those people within your company with a “need to know”; it must not be readily available for reading in such places as script files or in unprotected source files. It must not be distributed in source form. The application Master Password may be used with Open Inventor runtime libraries only. ISV developers are not authorized to use it for application development. All extensions (MeshVizXLM, VolumeViz, RemoteViz, etc.) need an associated license string.

Application Master password example:

The master password that you've received in a mail from @flexnetoperations.com or @thermofisher.com is described by one or more pairs of text lines. The first line is a comment line that describes the license password, it starts with a # character. The second line is the license string that must be specified in your source code, it starts with the word PACKAGE or INCREMENT.

For instance, the following text describes 3 license strings (3 pairs of text lines):

```
#Open Inventor 2024.1 Master Password - Order Line Number: 20000001-IOIVR - Entitlement ID: CTR-200000_APP-TEST_MP
```

```
PACKAGE OpenInventorPackage mcslmd 2024.1 COMPONENTS="IvTuneViewer OpenInventor"  
SIGN=11EBE6589644 \n INCREMENT OpenInventorPackage mcslmd 2024.1 permanent uncounted  
VENDOR_STRING=INTERNALKEY HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000001-  
IOIVR START=12-oct-2020 TS_OK SIGN=33D41A1CBF9C
```

```
#MeshViz 2024.1 Master Password - Order Line Number: 20000002-IMESV - Entitlement ID: CTR-200000_APP-TEST_MP
```

```
INCREMENT MeshViz mcslmd 2024.1 permanent uncounted VENDOR_STRING=INTERNALKEY  
HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000002-IMESV START=12-oct-2020 TS_OK  
SIGN=2747A92E5AEE
```

```
#HardCopy 2024.1 Master Password - Order Line Number: 20000003-IHCPY - Entitlement ID: CTR-200000_APP-TEST_MP
```

```
INCREMENT HardCopy mcslmd 2024.1 permanent uncounted VENDOR_STRING=INTERNALKEY  
HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000003-IHCPY START=12-oct-2020 TS_OK  
SIGN=16495650EE88
```

Specifying the Application Master Password in your source code

The license password(s) must be specified in your source code using the method `SetUnlockString()` and eventually `AppendUnlockString()` from the `SoLockManager` class. The first license string (*the line that is not in italics in the example*) must be given as the argument to `SoLockManager::SetUnlockString`. The other license strings must be given as the argument to `AppendUnlockString` (one call to `AppendUnlockString` per additional license).

You must call `SetUnlockString` (and optionally `AppendUnlockString`) before the first use of any class of Open Inventor.

Using the previous example, your source code should contain a function like the following:

C++ example:

```
#include <Inventor/lock/SoLockMgr.h>
void unlockStringsFct()
{
    std::string licenseString1 = "PACKAGE OpenInventorPackage mcslmd 2024.1 COMPONENTS=\"IvTuneViewer OpenInventor\"
SIGN=11EBE6589644 \n INCREMENT OpenInventorPackage mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY
HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000001-IOIVR START=12-oct-2020 TS_OK SIGN=33D41A1CBF9C";
    SoLockManager::SetUnlockString((char*)licenseString1.c_str());

    std::string licenseString2 = "INCREMENT MeshViz mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY
HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000002-IMESV START=12-oct-2020 TS_OK SIGN=2747A92E5AEE";
    SoLockManager::AppendUnlockString((char*)licenseString2.c_str());

    std::string licenseString3 = "INCREMENT HardCopy mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY
HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000003-IHCPY START=12-oct-2020 TS_OK SIGN=16495650EE88";
    SoLockManager::AppendUnlockString((char*)licenseString3.c_str());
}
```

C# example:

```
private void UnlockStringsFct()
{
    var licenseString1 = "PACKAGE OpenInventorPackage mcslmd 2024.1 COMPONENTS=\"IvTuneViewer OpenInventor\"
SIGN=11EBE6589644 \n INCREMENT OpenInventorPackage mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY
HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000001-IOIVR START=12-oct-2020 TS_OK SIGN=33D41A1CBF9C";
    OIV.Inventor.Lock.SoLockManager.SetUnlockString(licenseString1);

    var licenseString2 = "INCREMENT MeshViz mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY HOSTID=DEMO
ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000002-IMESV START=12-oct-2020 TS_OK SIGN=2747A92E5AEE";
    OIV.Inventor.Lock.SoLockManager.AppendUnlockString(licenseString2);

    var licenseString3 = "INCREMENT HardCopy mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY HOSTID=DEMO
ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000003-IHCPY START=12-oct-2020 TS_OK SIGN=16495650EE88";
    OIV.Inventor.Lock.SoLockManager.AppendUnlockString(licenseString3);
}
```

Java example:

```
private void unlockStringsFct()
{
    String licenseString1 = "PACKAGE OpenInventorPackage mcslmd 2024.1 COMPONENTS=\"IvTuneViewer OpenInventor\"
SIGN=11EBE6589644 \n INCREMENT OpenInventorPackage mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY
HOSTID=DEMO ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000001-IOIVR START=12-oct-2020 TS_OK SIGN=33D41A1CBF9C";
    com.openinventor.inventor.lock.SoLockManager.setUnlockString(licenseString1);

    String licenseString2 = "INCREMENT MeshViz mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY HOSTID=DEMO
ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000002-IMESV START=12-oct-2020 TS_OK SIGN=2747A92E5AEE";
    com.openinventor.inventor.lock.SoLockManager.appendUnlockString(licenseString2);

    String licenseString3 = "INCREMENT HardCopy mcslmd 2024.1 permanent uncoun ted VENDOR_STRING=INTERNALKEY HOSTID=DEMO
ISSUED=14-mar-2024 NOTICE=APP-TEST SN=20000003-IHCPY START=12-oct-2020 TS_OK SIGN=16495650EE88";
    com.openinventor.inventor.lock.SoLockManager.appendUnlockString(licenseString3);
}
```

Several pitfalls can lead to a wrong setting of license strings:

- Some IDEs (such as Visual Studio) may format the license strings when doing a copy/paste. Be sure to prevent any formatting.
- The license string may contain several quote characters ": be sure to keep them in the string by adding escape \ character.
- The license string may contain several \n characters, be sure to keep them in the string.
- The first license string must be specified by calling SetUnlockString and not AppendUnlockString.
- The additional license strings must not be specified by calling SetUnlockString.
- The call to SetUnlockString/AppendUnlockString is done after any other method of Open Inventor API.

To validate the license string setting in the source code of your application, disable all development license strings installed on the system. Your application should start Open Inventor and can do a first rendering without any license message.

IMPORTANT: obfuscating the license strings in your source code

Once you have validated the license string setting in your source code, you must ensure that the license string cannot be easily retrieved from the binary distribution of your application.

We strongly recommend that you obfuscate the strings that are given to SetUnlockString and AppendUnlockString.

You can get more information at: <https://developer.openinventor.com/index.php/general-documentation/licensing-mechanism/>