# SIEMENS

**COMOS**

**Platform**
**COMOS LS**

Operating Manual

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## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

| ⚠ DANGER |
|---|
| indicates that death or severe personal injury **will** result if proper precautions are not taken. |

| ⚠ WARNING |
|---|
| indicates that death or severe personal injury **may** result if proper precautions are not taken. |

| ⚠ CAUTION |
|---|
| with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken. |

| CAUTION |
|---|
| without a safety alert symbol, indicates that property damage can result if proper precautions are not taken. |

| NOTICE |
|---|
| indicates that an unintended result or situation can occur if the relevant information is not taken into account. |

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

Note the following:

| ⚠ WARNING |
|---|
| Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed. |

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We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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# Trademarks

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**Trademarks**

Registered trademark: COMOS®

# Overview of COMOS LS

# 2

## 2.1    Version allocation COMOS <-> COMOS LS

- COMOS 8.2, SP424 and later
- From COMOS 9.0

### Background

In older COMOS versions, the FlexLM software from the third-party vendor, Macrovision, is used as a license server. Since April 1, 2008, a proprietary development of Siemens AG has been in use: COMOS LS ("COMOS License Service").

## 2.2    Versions of the COMOS LS tools

| Tool | Version |
|------|---------|
| COMOS LS Server | 1.5.8 |
| COMOS LS Server Monitor | 1.5.7 |
| COMOS LS User Manager | 1.3.5 |
| COMOS LS Remote License Service | 3.6 |
| COMOS LS ICA-Client | 3.5 |

## 2.3    Component overview

### General information about "config" files

All "config" files mentioned in the remainder of this manual are XML files.

Do not change the order of entries in the XML config files. This especially applies to "ComosLSCommon.config".

### Crossover config files

- "ComosLSCommon.config"

  This file is configured during the installation process and read by "ComosLS.exe" and "ComosLicenseServerMonitor.exe".

  See also chapter ComosLSCommon.config (Page 28).

## COMOS LS Server Monitor

Application purpose: COMOS LS user interface.

- "ComosLicenseServerMonitor.exe"

  When you launch the file, the "Server Monitor" dialog box opens. The "Server Monitor" is used by administrators to start and end the license server and to administrate the licenses in the company network. Various views of the available licenses and the licenses currently in use are provided. The "Server Monitor" can be closed without affecting the license server.

  See also chapter Server Monitor (Page 55).

- "ComosLicenseServerMonitor.exe.config"

  See also chapter File: "ComosLicenseServerMonitor.exe.config" (Page 70).

## COMOS LS ServerService

Application purpose: Starts the license server.

- "ComosLSService.exe"

  The assigned Windows service launches and terminates the "ComosLS.exe" file. The file does not launch itself. Double-clicking or use of the return key is not allowed. Instead the file is activated from the Windows service or the "Server Monitor".

- "ComosLSService.exe.config"

  Contains the path to the "ComosLS.exe" file. This "config" file is created automatically during the setup. It must not be edited manually.

## COMOS LS Server

Application purpose: Assigns and monitors the licenses.

- "ComosLS.exe"

  This file does not launch itself; hence double-clicking or use of the return key is not allowed. Instead, the file is controlled from the "COMOS License Server Service".

  See also chapter Using a license server (Page 19).

- "ComosLS.exe.config"

  Contains various types of administrative information. This config file is created automatically during the setup. It must not be edited manually.

  See also chapter ComosLS.exe.config (Page 24).

## LicenseLib license administration

Application purpose: Controls access to the local license file and communication with COMOS LS.

- "LicenseLib"

  "LicenseLib" controls access to a local license file and takes over communication with COMOS LS.

  See also chapter LicenseLib (Page 51).

- "Comos.LicenseLib.config"

  Configuration of the client license components

  - COMOS: See also chapter File: "Comos.LicenseLib.config" (Page 53).

  - RemoteLicenseService: See also chapter File: "Comos.LicenseLib.config" (Page 82).

  - ICA Client: See also chapter "Comos.LicenseLib.config" file (Page 104).

## COMOS LS User Manager

Application purpose: Assigns and monitors licenses for users and user groups.

- "ComosLicenseUserManager.exe"

  This file can be launched in the normal way.

  See also chapter User Manager (Page 83).

- "ComosLicenseUserManager.exe.config"

  Configuration, see also chapter ComosLicenseUserManager.exe.config (Page 98).

## COMOS LS Remote License Service

Application purpose: Assigns and controls remote access.

- "RemoteLicenseService.exe"

  Supporting service for COMOS. However, this service is not included in the list of Windows services. This file can be launched in the normal way.

  See also chapter Remote License Service (Page 77).

## Software from third-party developers

The following software is installed during the setup if it does not already exist on the computer:

- .NET Framework 2.0
- WebServices Enhancement 3.0 for .NET

## Administration files

In addition to the files described above, a number of DLLs and predefined log files are installed.

## 2.4          Communication

Both on the client and on the server, the following must be enabled:

- HTTP protocol

- Port

  - Client configuration of the port / configuration of the RemoteLicenseService port

    File: "Comos.LicenseLib.config"

    Key: `<setting key="ComosLicenseServerPort" value="27011" />`

    Default value: `27011`

    This value is also used in the case of a missing key, empty value, or a missing "Comos.LicenseLib.config" file.

  - Server and monitor configuration of the port:

    File: "ComosLSCommon.config"

    Node: `<appSettings>`

    Key: `<add key="ComosLicenseServerPort" value="27011" />`

    Default value: `27011`

    This value is also used in the case of a missing key or an empty value.

  - User Manager configuration of the port:

    File: "ComosLicenseUserManager.exe.config"

    Node: `<appSettings>`

    Key: `<add key="ComosLicenseServerPort" value="27011" />`

    Default value: `27011`

    This value is also used in the case of a missing key or an empty value.

### Heartbeat / runtime check

When a COMOS client receives a license from the COMOS LS Server, a reply ("heartbeat") is sent from the client to the COMOS LS Server periodically in intervals of two minutes. The COMOS LS Server responds to the heartbeat.

If there is a problem with the response, the client continues trying to send this heartbeat.

- The request was not answered by the COMOS LS Server three times in a row: Entry in log file: "`The last heartbeat is older than 6 minutes - the licenses mapped to the corresponding cookie will be released soon`".

- The request was not answered by the COMOS LS Server five times in a row: A COMOS-internal flag is set. This flag is evaluated by the COMOS client during the next runtime check and COMOS is closed after confirming the corresponding message.

Saving is not possible after confirming the message!

See also chapter Runtime check (Page 30).

## 2.5      Name of the license file

The license file is called "ComosLicense.xml" throughout this document.

### File name in the license server

If a license server is used, another name can also be selected. Depending on the customer, the support department also sends license files with other names. The license file can also be renamed later. The only requirements are that the content of the license file must not be changed and the license file must remain an xml file.

### File name at a local license file

Local license files must have a "ComosLicense" prefix. Allowed, for example are:

"ComosLicense.xml"

"ComosLicense_Test1.xml"

"ComosLicense Test2.xml"

"ComosLicenseTest3.xml"

## 2.6      Different screenshots / displays

The user interface of the COMOS LS tools differs according to the desktop display selected.

Right-click on the desktop and select "Properties". Click the "Appearance" tab.

The operator controls are the same in terms of content, but the appearance differs for the "Windows Classic" and "Windows XP" styles.

Even within this documentation, there may be screenshots in the "Windows Classic" style or in "Windows XP" style.

# Using a local license

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## 3.1 Required components

- COMOS setup including dongle driver
- Service pack 8.2 SP424 or later
- Microsoft .NET Framework 2.0
- License file, starting April 1, 2008

## 3.2 Setup procedure

1. COMOS setup

   Including the hardlock dongle driver.

2. Install the service pack.

3. Install Microsoft .NET Framework 3.5 SP1, if not yet installed.

   The installation of .NET Framework 3.5 SP1 requires a restart of the PC. The corresponding setup can be found on the Siemens AG FTP server or on the Microsoft website.

4. For COMOS versions prior to COMOS 9.0, run the following cmd file:

   "<Comos>\bin\" directory: "ComosLicenseLib_Register.cmd"

   See also chapter LicenseLib (Page 51).

5. Place the local license or licenses in the "<Comos>\config" directory.

   The license files must be named "ComosLicense<x>.xml".

6. Start COMOS.

   The first login might take some time.

### Changes on the computer

- Installation of COMOS
- Installation of the dongle driver
- Installation of Microsoft .NET Framework 3.5 SP1 (if not yet available)
- For COMOS versions prior to COMOS 9.0: Registration of "Comos.LicenseLib.dll"

## 3.3 Using local licenses with FlexLM

If FlexLM is used and a local license expires or is not available for any other reason, COMOS automatically tries to obtain a license using COMOS LS.

After that, it is no longer possible to automatically switch to FlexLM. If you want to work with FlexLM again, you have the following options:

1. config entry

   "<Comos>\config\" file: `Comos.LicenseLib.config`

   `UseLicenseServer` key (Create manually if not already present.)

   Set value: `FLEXlm`

   The complete entry then looks like this:

   `<setting key="UseLicenseServer" value="FLEXlm" />`

   The config entry is evaluated first.

2. Registry key

   If no config entry is found, then a corresponding registry key is evaluated:

   `HKEY_CURRENT_USER\Software\INNOTEC\COMOS\LastUsedLicenseServer`

   If no config entry exists (and one should not be created either), then this registry key must be deleted or set to the value `FLEXlm` (case-sensitive).

# Using a license server

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## 4.1 Version

See also section Versions of the COMOS LS tools (Page 11).

## 4.2 Required components

- COMOS setup including dongle driver
- Service pack 8.2 SP424 or later
- COMOS LS Server setup (`CLS Serverxx.zip`)
- Also includes: Microsoft .NET Framework 2.0; Windows Services Enhancement 3.0 for .NET
- License file, starting April 1, 2008

### Releases

COMOS LS Server is released for the following operating systems:

**32-bit**

- Windows XP Pro SP3
- Windows Server 2003 SP1
- Windows Server 2008 SP1

**64-bit**

- Windows Server 2003 SP1
- Windows Server 2008 SP1
- Windows Server 2008 R2 SP1

# 4.3 Setup procedure

The PC that runs the Windows service for the license server is called the "Server PC". All the following setup activities (including the start of the License Server) must be carried out with "Administrator" status.

1. Server PC: Unpack "CLS Serverxx.zip" and run "Setup.exe".

   – Follow the setup instructions for COMOS LS. The Monitor automatically determines the name of the PC on which the software is installed.

   – If necessary, setup installs: the dongle driver.

   – If necessary, setup installs: Microsoft .NET Framework 2.0. The installation of .NET Framework 2.0 requires a restart of the Server.

   – If necessary, setup installs: Windows Services Enhancement 3.0 for .NET.

   – Setup asks for a license file. The license selection dialog can be closed with the "Cancel" button. In this case, it is necessary to copy the license file into the license directory that was specified during the setup process at a later time.

2. Client PC

   – COMOS setup

   – If the default value for port (`27011`) is not used, this value must be adjusted in the following file: "Comos.LicenseLib.config". Recommendation: First update the file in the service pack, then distribute the service pack. See also chapter Communication (Page 14).

   – Install the service pack.

   – Install Microsoft .NET Framework 2.0, if not yet installed. The corresponding setup can be found on the Siemens AG FTP server or on the Microsoft website. The installation of .NET Framework 2.0 requires a restart of the PC.

   – COMOS 9.0 and later: For COMOS 9.0, `SetLicPath` does not need to be called, since the license server is specified in the "Comos.LicenseLib.config" file by means of the `ComosLicenseServer` key.

3.  Server PC: Starting the license server

    –   If not selected in step 1.5: Copy "ComosLicensexxx.xml"  to the directory specified during setup.
        If the default value 27011 is not used for the port, this value must be adjusted in the following file: "ComosLSCommon.config".
        See also chapter Communication (Page 14).
        In the initial state, the ComosLS Service Windows service is not started. The are two equivalent ways to start this Windows service:

    –   Start the service in the "Services" dialog window.

    –   Click the "Start COMOS LS" button in the COMOS LS Server Monitor.

        The COMOS clients are closed if the license service is shut down permanently. Any work that is open is lost. Background: If the license server is inactive, the clients are closed after five heartbeats, that is, after eight to ten minutes.

        If the license server is restarted within this time, the COMOS clients reconnect and continue to operate.

    –   Windows menu: "Start > Programs > COMOS License Server", start: "COMOS License Server Monitor"("ComosLicenseServerMonitor.exe").

    –   "License server" tab: Check whether the license file was detected and is valid.

    –   Click the "Start COMOS LS" button.

4.  Client PC: Start the COMOS clients. The first login might take some time.

### Changes on the computer

*   Clients

    –   Installation of Framework 2.0 (if not yet available)

    –   Installation of COMOS

    –   For COMOS versions prior to COMOS 9.0:

    –   Registration of "Comos.LicenseLib.dll"

*   Server

    –   Installation of .NET Framework 2.0 (if not yet available)

    –   Installation of WSE 3.0 (if not yet available)

    –   Installation of the new license server (including dongle driver)

        The setup also installs the service "Administrative Tools > Services > ComosLSService":

### See also

LicenseLib (Page 51)

## 4.4        Settings for the web service (proxy server)

### 4.4.1        Ignoring the proxy server options

Because the new COMOS LS license technique is implemented as a web service, the proxy server settings from the Internet configuration are applied as default settings. This means that if the "Proxy server" option is activated on a PC, Windows forwards all license requests from COMOS to the address that is set as the proxy server.

However, a typical proxy server cannot handle license requests from COMOS. Therefore, these requests are not forwarded to the license server, and COMOS does not receive a license.

With the current "Comos.LicenseLib.dll", there is a way to fully ignore the proxy settings of the Internet Explorer on the PC.

File: "Comos.LicenseLib.config"

Key: `IgnoreProxySettings`

Value: `0|1` , Default: `1`

0: Regard the proxy settings

1: Ignore proxy settings

The complete row looks like this:
```
<setting key="IgnoreProxySettings" value="1" />
```

### 4.4.2        Entering an exception on the proxy server

The alternative way to the above-mentioned method is to enter an exception on the proxy server.

#### Case 1: All affected computers are located in the same domain

Prerequisite: The workstations on which COMOS is installed and the license server are located in the same domain.

Internet options, "Connections" tab, "Local Area Network (LAN) Settings" group: "Settings" button

- Option: "Use a proxy server for your LAN"

   Background info: This option is the reason for the problem described above.

- Option: "Bypass proxy server for local addresses"

   Effect: The license server is reached via the name.

## Case 2: Access via IP / cross-domain access

Prerequisite (alternative 1): The license server is addressed via an IP address.

Prerequisite (alternative 2): The license server is located in another domain.

Internet options, "Connections" tab, "Local Area Network (LAN) Settings" group: "Settings" button

- Option: "Use a proxy server for your LAN"

  Background info: This option is the reason for the problem described above.

  Button: "Advanced", "Exceptions" field"

  Forms that cover the license server names entered in the registry can also be used.

  Examples:

  ```
  LicensePath Value valid entries exception list

  192.168.1.25 192.168.1.25 ; 192.168.1.*

  LicenseServer LicenseServer ; License*

  LicenseServer.comos.de LicenseServer* ; *comos.de
  ```

## 4.4.3    FQDN (Fully Qualified Domain Name)

COMOS LS can handle screen forms as well as FQDN, for example, `ComosLizenzServer.Comos.De`. This possibility was not available under the older FlexLM-based system.

If the FQDN entry is used for a server located in the same domain, then it is not necessary to add the server to the exception list in addition. In that case, it is sufficient to activate the "Bypass proxy server for local addresses" option.

## 4.5          ComosLS.exe.config

<`MoveTraceLogsTo`> renamed to <`PathLogFilesBackup`> and moved to "ComosLSCommon.config" file.

- <`appSettings`>

    – <`WarningBeforeExpirationAdmin`>

    States the number of days from when a user with COMOS administrator rights receives a warning when a license expires. Default: seven days.

    – <`WarningBeforeExpirationUser`>

    States the number of days from when a user without COMOS administrator rights receives a warning that a license expires. Default: one day.

    – <`NamedUserAutoAdd`>

    0: No automatic adding of the user who checks out a Named User License. In this case, the user has to exist in the current Named User file, otherwise, he does not receive any license.

    1: Automatic adding of the user unless he does not already exist in the current Named User file and creation of a new Named User file if there is still a license available.

    – <`NamedUserAutoDeleteOverwritable`>

    0: In case of a successful switch to an older Named User file, the files that now have a higher sequence ID are not deleted. These files are overwritten, if necessary.

    1: In case of a successful switch to an older Named User file, all files that now have a higher sequence-ID are automatically deleted.

    – <`StatisticSnapshotGenerate`>

    0: Evaluation turned off.

    1: Two files are generated: "ComosLSLicenseSnapshot.log" and "ComosLSLicenseSnapshotUsers.log".

    "ComosLSLicenseSnapshot.log":

    In the "<Comos LS>\Data\Logfiles\Statistic" directory, the "ComosLSLicenseSnapshot.log" file with the current license utilization is created each time a license is checked in or out.

    This file contains information for each product on the total number of licenses, the number of currently checked out licenses and the utilization percentage. The file is structured as follows:

    `<Product>;<Date>;<#Count>;<#Usage>;<% Usage>`

    "ComosLSLicenseSnapshotUsers.log":

    In the "<Comos LS>\Data\Logfiles\Statistic" directory, the "ComosLSLicenseSnapshotUsers.log" file with the current license utilization, broken down by user, is created each time a license is checked in or out.

This file contains information for each product on the number of checked-out licenses per user. The file is structured as follows:

`<Product>;<User>;<Date>;<#Usage>`

– `<StatisticWorkloadGenerate>`

0: Evaluation turned off.

1: In the "<Comos LS>\Data\Logfiles\Statistic\Users\<Year>\<Month>" directory, the "ComosLSLicenseWorkload_<year>_<month>.log" file with information on the corresponding operation is updated each time a license is checked in or out. The subdirectories `<Year>` and `<Month>` are created automatically.

The files contain the following information for every check-in/check-out of a license:

- User login

- License group (if used)

- IP address of the user PC

- IP address of Citrix session, if applicable

- Cookie

- Date of the action

- Action (CHECKOUT, CHECKIN)

- Product

- Total number of licenses

- Number of licenses currently checked out

The file is structured as follows:

`<User>;<License group>;<IP>;<IP session>;<Cookie>;<Date>;`

`<Action>;<Product>;<Return code>;<#Count>;<#Usage>`

– `<LogfilesMaxSize>`

States the maximum size of the log files. The size is displayed in MB.

0: No size restriction of the files (Default set in installation).

Dependency: `ComosLSCommon.config`: `<PathLogFilesBackup>`

`<PathLogFilesBackup>` must exist.

`<PathLogFilesBackup>` is empty: The log file is emptied when the maximum size is reached.

`<PathLogFilesBackup>` includes a path designation: The log file is moved according to the absolute path when the maximum size is reached. Logging is continued in a new file.

Dependency on server start: see under `<PathLogFilesBackup>`.

Dependency: `<<LogfilesSavePerMonth>`.

`<<LogfilesMaxSize>` has priority over `<LogfilesSavePerMonth>`.

- – <<`LogfilesSavePerMonth`>

  0: Turned off (Default setting after installation)

  1: <`PathLogFilesBackup`> is empty: The log file is deleted when the month changes.

  <`PathLogFilesBackup`> includes a path designation: The log file is moved according to the absolute path. Logging is continued in a new file.

  Dependency: `ComosLSCommon.config`: <`PathLogFilesBackup`>

  <`PathLogFilesBackup`> must exist.

- • <`system.diagnostics`>

  - – <`Switches`>

    The `name` of the entered key must not be changed.

    With this value you can configure which kind of messages should be logged. Possible values:

    - `Critical`

    - `Error`

    - `Warning`

    - `Information`

    - `Prohibitions`

    All entries: Value is set to `Information` after the installation.

    A value always includes the hierarchically subordinate values. The `Warning` value, for example, also logs all messages classified as `Error` or `Critical`. Changes are put into effect after restarting ComosLS.

    Dependency: Server start

    When COMOS LS is started, certain information is always logged independently of the set level. This includes the version and the port, the read key-value-pairs of the configuration files, information on the license files and, if needed, Named User files and the HTTP listener.

  - – <<`sources`>

    Only one setting is allowed to be edited here:

    ```
    initializeData = <path + name logfile>
    ```

    Path and name of the log file are given. This entry occurs twice and is also input during the installation.

    The path must match the following entry:

    <<`appSettings`> <`PathLogFiles`>

  - – <`trace`>

## Example

```xml
<?xml version="1.0" encoding="utf-8" ?>
<configuration>

  <appSettings>
    <add key="WarningBeforeExpirationAdmin" value="7" />
    <add key="WarningBeforeExpirationUser" value="1" />
    <add key="NamedUserAutoAdd" value="1" />
    <add key="NamedUserAutoDeleteOverwritable" value="0" />
      <add key="StatisticSnapshotGenerate" value="0" />
      <add key="StatisticWorkloadGenerate" value="1" />
       <add key="LogfilesMaxSize" value="0" />
      <add key="LogfilesSavePerMonth" value="0" />
  </appSettings>

  <system.diagnostics>
    <switches>
      <add name="ComosLicenseServer" value="Information" />
      <add name="ComosLicenseWebService" value="Information" />
    </switches>

    <sources>
<source name="ComosLicenseServer" switchName="ComosLicenseServer"
switchType="System.Diagnostics.SourceSwitch">
        <listeners>
          <add name="ComosLicenseServer"
               type="System.Diagnostics.DelimitedListTraceListener"
delimiter=" "
initializeData="C:/Comos/ComosLS/Server/Data/Logfiles
/ComosLicenseServer.log"
               traceOutputOptions="DateTime" />
          <remove name="Default"/>
        </listeners>
      </source>
      <source name="ComosLicenseWebService"
switchName="ComosLicenseWebService"
switchType="System.Diagnostics.SourceSwitch">
        <listeners>
          <add name="ComosLicenseWebService"
               type="System.Diagnostics.DelimitedListTraceListener"
               delimiter=" "

initializeData="C:/Comos/ComosLS/Server/Data/Logfiles/ComosLicenseWe
bService.log"
               traceOutputOptions="DateTime" />
          <remove name="Default"/>
        </listeners>
      </source>
    </sources>

    <trace autoflush="true" indentsize="2" />
  </system.diagnostics>

</configuration>
```

## 4.6 ComosLSCommon.config

This file is read by "ComosLS.exe" and "ComosLicenseServerMonitor.exe" and configured during the installation process.

See also chapter Server Monitor (Page 55) for more details on the Server Monitor.

- <<`appSettings`>

  – <`PathBasicData`>

    Directory in which XML files for user and license group administration and for the mapping to products is stored.

    See also chapter Users and license groups (Page 30).

  – <`PathNamedUserFiles`>

    Directory where the Named User files are saved. It is set during the installation and must only be edited by authorized users afterwards. If you change this path without copying the latest Named User file to the new directory at the same time, this has the following consequence: the license server cannot be started and Named User licenses can no longer be checked out.

  – <`PathLicenseFiles`>

    Directory where the license files are saved. It is set during the installation and must only be edited by authorized users afterwards. If you change this path without copying the license files to the new directory at the same time, this has the following consequence: the license server shuts down during operation and cannot be restarted.

  – <`PathLogFiles`>

    Directory where the log files are saved. It is set during the installation.

  – <`PathLogFilesBackup`>

    States how log files are dealt with in the case of a new start of the license server:

    Does not exist: Log files continue to be used.

    Exists, but without a path designation: Log files are deleted.

    Exists and has a path designation: Log files are moved to the specified directory and renamed according to the following scheme:

    `YYYY-MM-DD_HHMMSS.<name>`

    Dependency: Server start / <`LogfilesMaxSize`>

    <<`PathLogFilesBackup`> empty: The log is cleared when Comos LS is started.

    <`PathLogFilesBackup`> includes a path designation: When Comos LS is started, the log is moved based on the path designation.

    <<`PathLogFilesBackup`> does not exist: evaluation of the value of <`LogfilesMaxSize`>.

  – <ComosLicenseServerPort>

    States the port for `ComosLicenseServer`.

    Default value: `27011`

    This value is also used in the case of a missing key or an empty value.

**Example**

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <appSettings>
    <add key="ComosLicenseServerPort" value="27011" />
    <add key="PathNamedUserFiles"
value="C:/Comos/ComosLS/Server/Data/NamedUser/" />
    <add key="PathLicenseFiles"
value="C:/Comos/ComosLS/Server/Data/License/" />
    <add key="PathLicenseFilesBackup"
value="C:/Comos/ComosLS/Server/Data/License/Backup/" />
    <add key="PathLogFiles"
value="C:/Comos/ComosLS/Server/Data/Logfiles/" />
    <add key="PathLogFilesBackup"
value="C:/Comos/ComosLS/Server/Data/Logfiles/Backups/" />
    <add key="PathBasicData"
value="C:/Comos/ComosLS/Server/Data/Basic/" />
  </appSettings>
</configuration>
```

## 4.7 Other feedback from the server

**Running Level**

"STOPPED": Server is stopped; no available licenses.

"RESTRICTED": Started with restrictions: the currently required Named User file is missing. The Named User sequence can be reset, and the password to start the User Manager can be assigned or changed.

"FULL": Server active.

### Responses to heartbeats

When a COMOS client receives a license from the COMOS LS Server, a reply (`"Heartbeat"`) is sent from the client to the COMOS LS Server periodically in two minute intervals. The COMOS LS Server responds to the heartbeat.

For details on how the COMOS client reacts to a missing heartbeat response, see also chapter Communication (Page 14).

# 4.8 Runtime check

### Aim of the runtime check

The COMOS LS Server runtime check handles the following tasks:

- Release of licenses that are temporarily unavailable (licenses that were not released, for example, due to an unexpected shutdown of a COMOS client).

- Checking for illegal manipulations of the license system

The runtime check is called by the periodic COMOS LS Server Monitor check as well as the COMOS client heartbeats.

If more than 5 minutes have passed since the last runtime check, another runtime check is conducted. Due to the two-minute cycle of the client heartbeat, the time range between two runtime checks is between 5 and 6 minutes. Depending on the number of active clients in the network, there is a possibility of the server conducting a runtime check every 5 minutes.

If no clients and also the Server Monitor are not active, the license server does not receive any requests and no runtime check is conducted.

The interval between two Runtime checks amounts to five minutes. This means, among other things, that licenses that are temporarily unavailable are released again after 15 minutes at the latest.

In order for a license to be released, it has to be not available for at least 10 minutes. Licenses are checked every five minutes. It is therefore possible that the license is not available in the first five minutes. In the next five-minute interval, it has not yet been unavailable for 10 minutes and can therefore only be removed during the subsequent five-minute interval. That is the reason for a 15-minute maximum.

# 4.9 Product-specific rights administration

## 4.9.1 Users and license groups

The rights management for COMOS LS users covers the following options:

- User management

  See also chapter "Users" (Page 89).

  "LicenseUsers.xml": Contains the users detected via the COMOS LS User Manager.

  This file is located in the directory defined by means of the `<PathBasicData>` key.

  See also chapter ComosLSCommon.config (Page 28).

- Assignment of the user to a product of type `NAMED_USER`

  See also chapter Named User (Page 86).

- Assignment of a user to a license group

  See also chapter "License Groups" tab (Page 88).

  "LicenseGroups.xml": Contains the license groups created via the COMOS LS User Manager. This file is located in the directory defined by means of the `<PathBasicData>` key.

  See also chapter ComosLSCommon.config (Page 28).

  Dependency: The actual assignment of the user to a group is specified in the "LicenseUsers.xml" file.

- Assignment of the user to two-way usage of products

  See also chapter "License Assignments" tab (Page 93).

## 4.9.2 Assignments to a product

Users and license groups can be assigned to products so that the use of the corresponding product can be classified more precisely. See also section "License Assignments" tab (Page 93).

It is possible to assign following types:

- "RESERVE"

  The number of licenses specified for the type "RESERVE" is reserved so that this number is always available for the assigned users and/or license groups.

  Here the number of licenses to be reserved must be clearly stated.

- "EXCLUDE"

  The use of the product is not allowed for users who are directly or indirectly assigned via a license group.

- "INCLUDE"

  The use of the product is allowed for users who are directly or indirectly assigned via a license group.

For users, license groups and the classification via a type, the following hierarchical rules have been defined (these always apply to one product):

- If there are no assignments to a product the license is provided as usual.

- The assignment of a user to a product has priority over the assignment of a group in which the user is included to this product.

- An assignment of the type "EXCLUDE" has priority over an assignment of the type "RESERVE".

- An assignment of the type "RESERVE" has priority over an assignment of the type "INCLUDE".

- If assignments of the type "EXCLUDE" exist, but none of the type "INCLUDE": Users without assignments receive a license.

- If assignments of the type "INCLUDE" exist: Users without assignments do not receive a license.

## 4.10 Technical background: Dongle access

### 4.10.1 Access to the dongle at server start

When starting COMOS LS, a login takes place in the associated dongle.

If the server on which COMOS LS is installed is started and the start parameter of the "ComosLSService" is set to "Automatic", it may occur in individual cases that the "Hardlock" service, which is responsible for the access to the dongle, is not yet started. This leads to an error message in COMOS LS that prevents it from accepting requests.

If an error occurs during the dongle login when starting COMOS LS, there is a one-time 20-second waiting period. If a login is still not possible after the waiting period, COMOS LS is not started.

This problem can be solved by a manual extension in the registry database of Windows.

Open the registry branch of the Window services:

"HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services"

Entry: `ComosLSService`

Generate new values called: `DependOnService`

Type: `REG_MULTI_SZ`

Value: `Hardlock`.

If you now open the properties of "ComosLSService" in the Windows services management, the name "Hardlock" is displayed on the "Dependencies" tab underneath "This service depends on these system components".

After a restart of the server, "ComosLSService" is now only started if the "Hardlock" service has already been started.

### 4.10.2 USB port via IP network

SafeNet, Inc. (www.safenet-inc.com (http://www.safenet-inc.com)) makes the driver (Hardlock) and the modules for accessing the USB dongle available in addition to the dongle itself.

The technical specifications require that the USB port is recognized as physically present and is displayed in the "USB Controllers" list of the Windows Device Manager.

Therefore, no hardware/software solutions are approved for COMOS LS that emulate a USB port and make it available through the network.

# Fail Over system (optional)  5

## 5.1 Introduction

### What is a Fail Over system?

The Fail Over system is a server failure backup mechanism. If the license server fails, it provides the licenses in order to be able to continue working on the client.

The administrator can use the Fail Over system in test mode and activate it only in the case of a license server failure, or can configure the Fail Over system to intervene automatically from the standby mode side.

### Constituents

- Fail Over dongle with number of the license server dongle with a prefixed "F".
- Customized components of the COMOS LS software
- License files
- Data files

### Usage and runtime

The Fail Over system can be activated once for the default runtime of up to 10 days. After use the dongle is deactivated. To reactivate the Fail Over system a new dongle must be used.

### Licenses

Licenses of the NAMED_USER type are handled by the Fail Over system like licenses of the FLOATING type. This is necessary since the number of the current NAMED_USER file is stored in the original dongle and cannot be transferred to the Fail Over dongle.

### Master system

To uniquely differentiate the COMOS LS system and the Fail Over system, the COMOS LS system is also referred to as the master system in this chapter.

## 5.2 Installation

To install the Fail Over system, run the shipped setup and make the changes to the configuration and data files that are described in this section.

### 5.2.1 Setup

#### Setup procedure

To install the Fail Over system, use the COMOS LS setup. See also chapter Setup procedure (Page 20). On the "License server configuration" tab there is a new checkbox, "Install as Fail Over system", which has to be activated.

The new edit fields "Computer name" and "Port" also need to be filled out for the installation of the Fail Over system. The values from the two edit fields are stored in the "ComosLS.exe.config" file to the `ComosLicenseServerMaster` and `ComosLicenseServerMasterPort` keys.

### 5.2.2 Customizing the configuration

#### File customization options (server)

The configuration files of the Fail Over system must be adapted to the configuration of the master system. These changes can be made in three different ways:

1. Manual adjustment of the existing files

   See also chapter ComosLSCommon.config (Page 28), ComosLS.exe.config (Page 24), Setup procedure (Page 20)

2. Adjustments from within the Server Monitor

   See also chapter Server Monitor (Page 55).

3. Overwriting the shipped Fail Over files with the existing master system files.

When adjusting, always be sure to update the path information.

#### Adjusting the "Comos.LicenseLib.config" file (client)

As of COMOS 9.0, the license server is entered in the "Comos.LicenseLib.config" configuration file. Add the following values to "Comos.LicenseLib.config" in the [...]/config folder of your COMOS installation:

- (As of COMOS Vega) `<setting key="ComosLicenseServerBackup" value=`"Name of the Fail Over server"`/>`
- (For all COMOS versions) `<setting key="ComosLicenseServerPortBackup" value=`"Port of the Fail Over server" `/>`

## 5.2.3    Copying files

### Using files from the master system

The Fail Over system should be able to replace your COMOS master system. For this, you need a kind of map of the directory and file structure of the master system.

Copy the following files used in the master system to the corresponding folder of the Fail Over system:

1. License files ("ComosLicense#001.xml")

2. Assignment files ("LicenseUsers.xml", "LicenseGroups.xml", "ProductAssignments.xml")

3. Password files ("Password.xml")

## 5.3    Configuring the Fail Over system

### Requirement

See also chapter Installation (Page 34).

### Procedure

The configuration may only be carried out by administrators. To test your settings, it is recommended to connect the Fail Over system to a client which is not being used by an employee.

1. Connect the Fail Over dongle to the server on which you want to set up the Fail Over system.

   See also chapter VMWare with dongle (Page 111), Access to the dongle at server start (Page 32).

2. Start the Server Monitor.

3. Start the license server service by left-clicking on "Start COMOS LS".

4. Confirm your input with "Yes".

5. The license service is started and the "Fail Over" tab opens.

6. Call the "Fail Over-Settings" tab.

7. Fill out the fields.

   See also chapter COMOS LS Server Monitor (Page 38), keyword "Fail Over Settings".

8. Call the "Fail Over" tab again.

   You are in test mode.

9. Simulate a failure of the license server (such as by entering non-existent values for ComosLicenseServer / Port in the "Comos.LicenseLib.config" file). The Fail Over server is addressed, but issues no licenses because it is in test mode.

10. Check whether the Fail Over server responded. There must be a corresponding message in the log file of the client.

11. Send a test e-mail (no mail is sent to the support team in standby mode).

12. Restore the correct entries in "ComosLicense.Lib.config".

13. Click on "Switch to level Stand By".

14. The status changes and the Fail Over System is ready to run.

# 5.4 Status of the Fail Over system

## Four different Fail Over system states

1. Test

2. Stand By

3. Enabled

4. Deactivated

## Test

The first time the system starts you are in test mode. This is where you make the desired settings and test the functionality of the system. In the test state, license requests are submitted to the Fail Over server but no licenses are issued. If an error code appears, check the configuration settings, the specified path and the server.

## Stand By

From within the test state you can switch the system to Stand By mode. This activates the automatic fail-protection. If your master system now fails, the Fail Over system automatically switches to the Active state after the first license request.

## Enabled

After failure of the master system.

If the Fail Over system is unable to communicate with the master system, it automatically activates itself from standby and issues licenses to the clients.



An e-mail is sent to the mailing list upon activation, which you can edit in the Server Monitor. The e-mails are sent asynchronously, so you receive no direct feedback in the Server Monitor. Check the sent mails in the Outbox of the configured SMTP server.

## Deactivated

The system is deactivated when one of the two following events occurs:

- The maximum runtime in days was reached.

- After a failure, the master system is restored and is accessible from the Fail Over system.
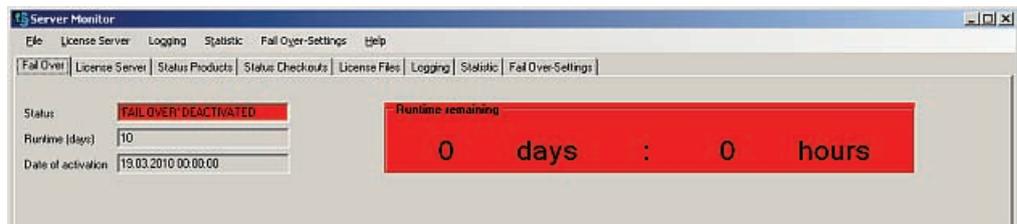


An e-mail is also sent to the mailing list upon deactivating the system.

The dongle is deactivated and the Fail Over system can no longer be used until a new dongle is available.

If no Server Monitor is open when at the time of the deactivation, the next time you start the Server Monitor you see a default error message, and not the "FAIL OVER DEACTIVATED" status, as shown in the screenshot above. Check the log files to verify the deactivation.

## 5.5 Changes by the Fail Over system

### 5.5.1 COMOS LS Server Monitor

**Changes on the Server Monitor**

See also chapter Server Monitor (Page 55).

**New "Fail Over" tab**

- "Status" field: Status of the Fail Over system:
    - "FAIL OVER TEST"
    - "FAIL OVER STAND BY"
    - "FAIL OVER ACTIVATED"
    - "FAIL OVER DEACTIVATED"
- "Runtime (days)" field: Maximum runtime in days
- "Date of activation" field: Date of first license request
- "Runtime remaining" field: Remaining runtime in days and hours
- "Switch to level Stand By" / "Switch to level Test" button: Switches the Fail Over System to the Stand By / Test state.

**New "Fail Over Settings" tab**

You set up the mailing lists on this tab. These mailing lists are notified when the Fail Over system is activated and deactivated. Click the "Save Settings" button to save your inputs.

**"Template for e-mail" control group**

- "Mailing list to" field:

List of e-mail addresses to which the notification is to be sent. The Support address cannot be deleted. Insert new addresses as follows:

1. Select the "Select and click here to enter a new value" line with a mouse click. The line is highlighted in blue.

2. Select the marked line with another mouse click or F2 to create an entry.

3. Enter an e-mail address and press Enter or left-click anywhere outside of the input field to confirm your input. New entries are highlighted in yellow.

4. Entries can be changed or deleted. Deleted entries are highlighted in red.

"From": Enter the desired sender address (Administrator / Support).

"Subject": Subject line

"Message": Compose a message that is to be sent upon the status change from Stand By to Activated ("When activated") or during the status change from Activated to Deactivated ("When deactivated").

"Signature": Insert a signature.

## "SMTP" control group

- "Server name" field: Name of the SMTP server
- "Server port" field
- "User" field: User name. If no user is entered, the e-mail is sent with "Anonymous Account" as the sender.
- "Password" field: Password
- "Confirm Password" field: Reenter and confirm the password
- "Use SSL" option: Use the SSL protocol, or alternatively only the HTTP protocol

## "Save settings" button

Saves your inputs to the "FailOver.xml" file in the <...>\Data\Basic directory. Yellow or red highlighted entries have not yet been saved. Click "Save settings" to save your changes, or close the Server Monitor to discard the changes.

## New "Fail Over Settings" tab

"Save": Saves the contents of the "Fail Over Settings" tab to the "FailOver.xml" file in the <...>\Data\Basic directory.

"Send test E-Mail": Sends a test e-mail to the e-mail addresses entered in the "Mailing list to" field, except the Support address.

## Changes to the "Status Products" tab

The NAMED_USER license type is still displayed in the "Type" column of the respective license file as NAMED_USER, but is additionally highlighted in yellow. This shows the changed handling as FLOATING.

## Changes to the "License Server" tab

The "Read dongle infos" menu item is renamed to "Test dongle". When the item is selected, there is a read access directly to the dongle (without a request to COMOS LS). The menu item is also active when COMOS LS is stopped. If the Server Monitor is a remote installation of the Server Monitor, the menu item is disabled. When the dongle is successfully accessed, the readout dongle ID is put out in the "Status messages" area; if access failed, the error message and ID.

## NAMED_USER tab

In parallel, the "Named User" tab and "NAMED_USER" menu are hidden, as there are no NAMED_USER licenses in the Fail Over system.

## 5.5.2 File: "Comos.LicenseLib.config"

### Changes to Comos.LicenseLib.config

As of COMOS 9.0, the license server is entered in the "Comos.LicenseLib.config" configuration file. Add the following values to "Comos.LicenseLib.config" in the <...>/config folder of your COMOS installation:

- As of COMOS 9.0

  `<setting key="ComosLicenseServerBackup" value=`"Name of the Fail Over server"`/>`

- For all COMOS versions

  `<setting key="ComosLicenseServerPortBackup" value`="Port of the Fail Over server" `/>`

## 5.5.3 Remote License Service / COMOS ICA Client

### Changes to the Remote License Service and the ICA Client

An entry in the log file is generated and the value FAILOVER_TEST_OK is returned.

For testing on the client PC a check of the log file is sufficient.

## 5.5.4 ComosLS.exe.config

### New entries

- `<add key="ComosLicenseServerMaster" value="`*Name of master server*" `/>` (license server of the master system)
- `<add key="ComosLicenseServerMasterPort" value="`*Master port*" (port for access to the license server of the master system)

The values and keys are taken from the Setup. The "Computer name" and "Port" inputs from the "License server configuration" tab are saved.

## 5.6 Failure of the master system

### Communication between Fail Over system and master system

The Fail Over system checks at regular intervals whether the master system is accessible. The check is performed at the following points:

1. Start of license service

2. Runtime check

3. First request from a client, creation of a cookie

4. Switch to Stand By state

### Failure of the master system

If communication with the master system fails, the Fail Over system is activated. The clients receive floating licenses and COMOS can continue to be used. COMOS is not closed during this switchover. Open projects and data are maintained.

An e-mail is automatically sent to the mailing list to notify the recipients of the failure of the master system.

The time counter starts. You can see the remaining runtime of the Fail Over system in the server monitor.

### Re-activating the dongle

To reactivate the Fail Over system, proceed as follows:

1. Create a code and convey it to SIEMENS with the dongle ID of the Fail Over system.

2. SIEMENS creates a response code and conveys it to you.

3. If the two codes are compatible, the Fail Over dongle is reset to its delivery state.

# Named Licenses

<div style="text-align: right; font-size: 2em;">6</div>

## 6.1 Purpose

Named Licenses require a license server. The "Named User" list restricts which user may obtain a license from the license server. In practice, this is used to restrict the use of floating licenses.

From the administrator point of view one can, in this manner, directly assign the limited resources of the licenses to the more important accounts.

A similar technique is the reservation of licenses. If both techniques are used, then it is necessary to reasonably balance Named Licenses and reserved licenses. Otherwise it may occur that the two techniques block each other and some licenses cannot be obtained at all.

## 6.2 Definitions

### Definition of "Named Licenses"

Named Licenses are sometimes also called "Named User Licenses". Named Licenses consist of the following components:

- Named User List
- Tickets
- Restrictable license

### Definition: "Named User" list

The "Named User" list restricts which user may obtain a license from the license server.

### Definition: Tickets

Tickets are what entitle you to delete a login from the "Named User" list. Thereafter a new login can be registered and entered in the "Named User" list.

**Restrictable licenses**

The following licenses can be restricted by using the "Named User" list:

"COMOS Basic" (entered in the "`CVS Monitor`" as "`B`" or "`Main module`")

If the "Named User" list is used, it is compulsory to switch over the entire license block of the relevant module to "Named User" list. It is not possible to limit some of the floating licenses by using the "Named User" list and to use the remaining floating licenses without restrictions.

If Named Licenses are ordered from Siemens AG, then a new license file must be created. How existing unlimited floating licenses will be allocated to the above mentioned products/modules must be discussed with the Marketing department.

The Named Licenses technology is not supported for the modules (P&ID, FD, I&C, etc.).

## 6.3 Technical workflow

### 6.3.1 Overview

Two steps are performed during the login:

1. "Named User" list

   The "Named User" list is checked to see whether a login entry already exists or if another entry is free.

2. License

   If this is the case, it is checked in the second step if a relevant license is free.

### 6.3.2 "Named User" list

A user registers as usual with his login. Consequence: A place is reserved in the "Named User" list and linked to the login.

The first and second user login is handled in the same manner. It is not important whether the first registration (i.e. the registration that occupied a place initially in the "Named User" list) took place with the first or second login. Correspondingly, the first or the second login can be used in all subsequent sessions; the same entry is always searched in the "Named User" list.

If all places in the "Named User" list have been taken, then no other login can register on COMOS with any of the licenses affected. This still applies even if an employee logs off, as the link to the login in the "Named User" list is permanent and is not affected by whether or not the corresponding employee is actually logged in. If another employee tries to log in with a new login, he will get the message "No free licenses".

If you want to remove the link between a place and a login in the "Named User" list, you need a Ticket.

### 6.3.3 Involved license

Named Licenses require a license server. In such cases, each COMOS startup with registration requires a license. This also applies when working with Named Licenses. Reminder: The entry in the "Named User" list only states whether the user may use an involved license at all. The entry in the "Named User" list does not state whether another involved license might be free.

It is possible that one user occupies several licenses; in this case no free licenses would remain for other logins registered in the "Named User" list. However, there are certain restrictions when using Named Licenses, as described in the following:

#### Multiple COMOS starts on a PC

COMOS may be started as many times as you want on a computer. A license is obtained for each registration.

#### Multiple login for COMOS start

If different PCs are used, then one login can log on to three PCs at one time. Following applies:

- As long as only two different PCs are used, you can log on to the two as often as you like.

- If a login takes place on a third PC, then an additional product is needed (current state: Administrator). If no free administrator license is available, you cannot log on.

- Another COMOS start on one of the first two PCs now also requires an administrator license. Each COMOS startup with registration uses one license.

If a user is logged in on different PCs and one of the PCs incorrectly loses its contact to the license server, the following applies: After two minutes, the counter of the number of PCs at which the user is logged in from the point of view of the license server is reduced by 1.

If all licenses were used up at the time of the improper exit of the PC, also see section Runtime check (Page 30).

#### Citrix

Terminal server (Citrix): three registrations per login are allowed. With one login, you can log in to COMOS, which is installed on a terminal server, a maximum of three times. The third login requires an additional product (current state: Administrator).

If a user is logged several times into the Citrix server and one of the sessions incorrectly loses the contact to the license server (meaning that correct returning of the licenses to the license serve is no longer possible), the following applies: After two minutes, the counter of the number of sessions logged in at the Citrix server from the point of view of the license server is reduced by 1.

If all licenses were used up at the time of the improper exit of the PC, also see section Runtime check (Page 30).

**Login-based license request**

> Licenses are assigned based on the login sequence until all involved licenses are occupied. After this, COMOS must be closed first before another user who is registered in the "Named User" list can log in.

## 6.4 Changing the workflow

**Login from the user's point of view**

> From the user's point of view, a normal COMOS login takes place, just as before. Neither the interface nor the handling has changed.

**Effect on the workflow**

> The login sequence is very important, especially in the introductory phase, because the places in the Named User List are occupied based on the login sequence.

> The login sequence is also important later on, when participants use several involved licenses. In this case, you can release a license again by simply logging off.

> In particular, you should not create a "Test login" and work with it in COMOS, as even this "Test login" obtains and ties up a Named User License.

## 6.5 Administration of Named Licenses

**Controlling Named Licenses in the Server Monitor**

> See also chapter "Named User" tab and menu (Page 65).

**Administrating Named Licenses in the User Manager**

> See also chapter Named User (Page 86).

**config entries**

> `<NamedUserAutoAdd>`

> See also chapter ComosLS.exe.config (Page 24).

> `<NamedUserAutoDeleteOverwritable>`

> See also chapter ComosLS.exe.config (Page 24).

> `<PathNamedUserFiles>`

> See also chapter ComosLSCommon.config (Page 28).

## More Named Users than licenses

Reducing the number of valid licenses may result in the existing Named User file containing more Named Users for a product than the total available licenses for the product.

See also chapter "Named User" tab (Page 86).

In this case, COMOS still allows the license server to start. However, the number of Named Users who can simultaneously check out a license for a product must correspond to the number of available licenses.

Upon starting the license server, the following warning is also recorded in the log file to indicate that the number of permissible Named Users has been exceeded:

"The number of stored users in the actual Named User file exceeds the maximum number of available licenses for the product".

It is not possible to replace an existing Named User file with another file in which the number of Named Users is larger than that of the valid licenses for the product.

A new Named User can only be added to the Named User file if the total number of Named Users is covered by the valid licenses. If this is not the case, you will first have to delete a certain number of existing Named Users. The COMOS LS User Manager can be used to do this.

See also chapter User Manager (Page 83).

## 6.6 Old licenses

Existing old licenses of the "COMOS Basic" module can no longer be used if the corresponding Named Licenses are used. Contact the Marketing department in this case.

# Packages

<div style="text-align: right; font-size: 3em;">7</div>

## 7.1 Aim

Packages are available so that you can combine licenses to suit your requirements.

## 7.2 Definitions

### Properties

A package is defined by means of the following properties:

- A defined name that is unique within all packages
- Assigned licenses from the pool of all existing licenses

  These may only be of the FLOATING type.
- A package can only be defined in a server license file.

### License file

Packages are stored in a license file (XML format). As the license files are signed, the packages cannot be modified manually at a later date.

A package can be included in several license files, in which case the associated licenses complement one another.

### Requirements

A package is requested via your login on the license server. The licenses contained within the package can only be activated for you if you have been assigned to the package requested. Assuming the results of the check are positive, all the assigned licenses will be at your disposal.

The licenses will not be made available to you under the following conditions:

- If one of the assigned licenses is not present
- If the maximum number of available licenses (for at least one of the license types included) are already in use
- If the login is not assigned or is not clearly assigned to a package

If any of these conditions apply, you will be notified accordingly.

## 7.3 Conditions and restrictions

The following conditions and/or restrictions apply when using packages:

- No package can be requested when using ReportToExcel or ReportToWord.
- No package can be requested when using the special login for PQM. As the PQM login is restricted to particular licenses, the licenses concerned must be requested individually.
- No package can be requested when using MOTIONX.
- No package can be requested unless COMOS was started with the /MD:PA start mode.
- Where licenses are interdependent, this is not recognized within the context of packages.

  1. Example:

  The FDA license is assigned to the BASIC license, where the type is OPTIONAL.

  The BASIC license is requested individually.

  The BASIC and FDA licenses are both activated.

  2. Example:

  The BASIC license is included in a CONSTRUCT package.

  The CONSTRUCT package is requested.

  Only the BASIC license is activated.

## 7.4 Calls via the command line

If you want to initiate a package call via the command line, enter the following parameter: "comos.exe /MD:PA".

# LicenseLib

<div style="text-align: right; font-size: large;">8</div>

## 8.1 General

"LicenseLib" controls access to the local license files (if available) and handles the communication with the COMOS LS Server. "LicenseLib" is included in current service packs and in the setup of the COMOS LS Remote License Service.

The "LicenseLib" file of the service pack and the "LicenseLib" file of the COMOS LS Remote License Service are completely separate and therefore do not interfere with each other:

● COMOS 9.0 and later:

  The "LicenseLib" of the Service Pack is found automatically and is therefore not registered. Exception: When use is made of third-party applications that use the workset and are not located in the COMOS "bin" directory. Then the registration is conducted as described.

● The "LicenseLib" of the COMOS LS Remote License Service: is found automatically.

This chapter explains how to handle the "LicenseLib" in connection with a COMOS installation. For details of how to use "LicenseLib" in connection with the COMOS LS Remote License Service, see also chapter LicenseLib (Page 103).

### See also

Registration of the "Comos.LicenseLib.dll" file (Page 51)

## 8.2 Registration of the "Comos.LicenseLib.dll" file

● COMOS 9.0 and later:

  The "LicenseLib" of the Service Pack is found automatically and is therefore not registered. Exception: When use is made of third-party applications that use the workset and are not located in the COMOS "bin" directory. Then the registration is conducted as described.

  The "Comos.LicenseLib.dll" library has been developed for COMOS LS. This library uses .NET technology and cannot be registered using older registration tools. .Net technology requires that such components are registered using the "RegAsm.exe" tool. This file is an integral part of the Microsoft .NET Framework 2.0 setup.

Thus, it is possible to search for the "RegAsm.exe" file and to register the "Comos.LicenseLib.dll" in a DOS box using this file. However, such an approach might be too complex for a normal user. Therefore, the following alternative was selected:

– The "RegAsm.exe" file was also copied as "RegAsm_V2.0.50727.exe" into the "<Comos>\bin" folder.

– A command file was added to the "<Comos>\bin" folder: "ComosLicenseLib_Register.cmd". This file calls the "RegAsm_V2.0.50727.exe" file in the "bin" directory, thereby registering the "Comos.LicenseLib.dll" file.

– The counterpart to this is the "ComosLicenseLib_Unregister.cmd" file, which is used to unregister "Comos.LicenseLib.dll" if necessary.

## 8.3 Problems during the registration

The following problem exists for COMOS versions prior to COMOS 9.0:

In single cases, an error occurred when calling `ComosLicenseLib_Register.cmd`, because the file `RegAsm_v2.0.50727.exe` could not be found.

As a matter of fact the `RegAsm_v2.0.50727.exe` file was located in the right place, that is to say in the same directory.

The same error occurred when calling `ComosLicenseLib_Register.cmd` using the "Start as administrator" option.

### Solution

Open the DOS console in the administrator mode.

Copy the command from `ComosLicenseLib_Register.cmd` and send it to the DOS box.

## 8.4 Storage location of the licenses

It is permissible to copy several local license files to a shared folder. However, only one of these can match the current dongle. If there are several local licenses files available, they are checked one after another until a file matching the dongle is found.

The following scenario is possible: All the local licenses are stored at all the workplaces. Employees take their dongle with them if required and use it on other workstations and can also work there.

The inflexible mapping of a dongle to a PC does therefore not apply.

The license file is searched as follows:

1. Starting from the current directory of `LicenseLib`: Change to the higher-level directory. There a "\config" directory is located, and in this directory, a `ComosLicense*.xml` license file is found.

2. In the current directory, `LicenseLib` is searched for a `ComosLicense*.xml` license file.

3. The network is searched for a license server.

## Multiple dongles

If multiple dongles are activated on a PC, then the first physical dongle in a signal chain is always found first.

## 8.5 File: "Comos.LicenseLib.config"

## Comments in the config file

`<configuration>` section: Single-row XML comments (which start with `<!--`) are permitted. All other comments or additions are prohibited.

## Location of the config file

The following method is used to search for the "Comos.LicenseLib.config" file:

1. Starting from the current directory: Change to the higher-level directory. A search is performed there to find the "\config" directory, and this directory is in turn searched for the "Comos.LicenseLib.config" file.

2. After this, the current directory of "LicenseLib" is searched for the "Comos.LicenseLib.config" file.

3. Then, the default port `27011` is tested.

## Syntax

`<configuration>`

- `<<ComosLicenseServer>`

  Name of the server on which COMOS LS is installed. Evaluation, COMOS 9.0 or higher.

- `<<ComosLicenseServerPort>`

  Port through which communication with COMOS LS takes place. If the value is empty, `27011` is used as a default.

- `<IgnoreProxySettings>`

  0: The Internet Explorer proxy settings are used.

  1: (Default): The proxy server is ignored.

- `<CryptUseMachineContainer>`

  0: The temporary files created for the encoding through Windows are stored in the user profile. This is the default value.

  1: The temporary files created for the encoding through Windows are stored in the profile of the PC.

- &lt;UseLicenseServer&gt;

    If this key is available, the registry key `LastUsedLicenseServer` is ignored.

    FLEXlm: Communication takes place via the FLEXlm license server.

    CLM: Communication takes place via COMOS LS.

    The &lt;`UseLicenseServer`&gt; key is evaluated by the "Comos.dll" file - not by the "Comos.LicenseLib.dll" file as in the case of the others.

**Example for `Comos LicenseLib.config`**

```
<configuration>
  <setting key="ComosLicenseServer" value="ComosLicenseServer" />
  <setting key="ComosLicenseServerPort" value="80" />
  <setting key="IgnoreProxySettings" value="1" />
  <setting key="CryptUseMachineContainer" value="1" />
  <setting key="UseLicenseServer" value="CLM" />
</configuration>
```

# 8.6 Copy exception for "Comos.LicenseLib.config"

## Standard behavior in the Update Center

The "Comos.LicenseLib.config" file from a service pack is not copied from the COMOS Update Center to "&lt;Comos&gt;\config".

If you want to take the "Comos.LicenseLib.config" file from the service pack, you must copy the file yourself to "&lt;Comos&gt;\config".

## Simplified copying via the "ComosLicenseLib_Register.cmd" file

The following files are created with a service pack:

- "&lt;Comos&gt;\bin\" directory: "Comos.LicenseLib.template"

- "ComosLicenseLib_Register.cmd"

Prerequisite: When executing the "ComosLicenseLib_Register.cmd" file, the following applies:

- The "&lt;Comos&gt;\config\" file: "Comos.LicenseLib.config" does not exist.

- The "&lt;Comos&gt;\bin\": "Comos.LicenseLib.template" file exists

Effect:

1. The "config" directory is created again if required.

2. "Comos.LicenseLib.template" is copied to the "&lt;Comos&gt;\config" directory as "Comos.LicenseLib.config".

3. The "Comos.LicenseLib.template" file is deleted from the "&lt;Comos&gt;\bin\" directory.

# Server Monitor

<div style="text-align: right; font-size: 2em;">9</div>

## 9.1 Version

See also section Versions of the COMOS LS tools (Page 11).

## 9.2 Installation

### 9.2.1 Overview

The COMOS LS Server Monitor can be installed in two different ways:

- As part of the COMOS LS Server setup, it is installed along with the license server.

- If the independent "CLS ServerMonitor" setup is used, it can be installed remotely on a different PC.

  This enables administrative access to COMOS LS from any PC. This installation variant only installs the COMOS LS Server Monitor and the necessary files.

### 9.2.2 Remote installation

#### 9.2.2.1 Configuring the Windows firewall for remote installation

If the Windows firewall is running on the computer where COMOS LS is installed, the configuration described below is required.

There is a difference depending on whether the remote connection user is a member of the Local administrators group.

**User is a local administrator**

Configuration takes place via the following call:
```
netsh firewall set service RemoteAdmin enable
```

As an alternative, the Group Policy Editor gpedit.msc can be used:

- "Start > Run": Enter "gpedit.msc" and start it.

- Left, under "Local Computer Policy": "Computer configuration > Administrative templates > Network > Network connections > Windows Firewall"

- If the COMOS LS computer is in the domain, select "Domain profile"; otherwise, select "Default profile".

- On the right: Open the context menu of: "Windows Firewall: Allow remote administration exception"

- Select: "Properties"

- Click the "Activated" option.

- Click the "Apply" button and exit the dialog by clicking the "OK" button.

- Exit the application.

## User is not a local administrator

Configuration takes place via the "DCOM Configuration" application ("dcomcnfg.exe" file):

- "Start > Run": Enter the file name "dcomcnfg.exe" and start it.

- Left, under "Console Root": "Component Services > Computers"

- Open the context menu of: "My Computer"

- Select: "Properties"

- Select the "COM Security" tab.

- "Launch and Activation Permissions" area, "Edit Limits..." button:

  - "Add..." button: Add the user.

  - "Group or User Names" list: select a new user.

  - "Permissions for User" list: Select "Remote Launch" and "Remote Activation" from the "Allow" column.

  - Click the "OK" button.

- "Access Permissions" area, "Edit Limits..." button:

  - "Add..." button: Add the user.

  - "Group or User Names" list: Select a new user (or select "ANONYMOUS LOGON").

  - "Permissions for User" list: Select the "Remote Access" entry from the "Allow" column.

  - Click the "OK" button.

- Click the "OK" button.

- Exit the application.

## 9.2.2.2 Performing the remote installation

## Prerequisites/System environment

Framework Net 2.0

Setup of the Server Monitor

If a remote installation is conducted is determined by means of a comparison of IP addresses.

## Releases

The COMOS LS Server Monitor is released for the following operating systems:

**32-bit**

- Windows XP Pro SP3

- Windows Server 2003 SP1

- Windows Server 2008 SP1

**64-bit**

- Windows Server 2003 SP1

- Windows Server 2008 SP1

- Windows Server 2008 R2 SP1

The COMOS LS Server Monitor is released for the following COMOS software:

- COMOS LS Server 1.4.2 or higher

## Installation

Unpack the ZIP file with the COMOS LS Server Monitor setup.

The ZIP file is moved to a dedicated, empty folder and is unpacked. After unpacking, the following file is started: "Setup.exe".

The InstallShield Wizard will now guide you through the installation. A log file is created at the following location during the installation:

"<install path>\Data\Logfiles\" directory, "ComosLSMonitor_<PC name>.log" file.

## Operation

"Login to Server Monitor" dialog window:

Since there is an access on the services and processes of another computer the administrator has to first register via a login.

- "User login" / "Password" / "Domain or Computer name"

  Enter the correct information to access the remote computer.

- "Remember last login and domain/computer name"

  Entries in the "User login" and "Domain or Computer name" fields are stored in the "ComosLicenseServerMonitor.exe.config" file and prepopulated at the time of the next call.

- "Use Windows login"

  Entries in the "User login" and "Domain or Computer name" fields from the current Windows login are used.

- "Full login" button

  The login dialog is closed, and the COMOS LS Server Monitor is displayed.

  If access to the services and processes of the remote computer with the selected login is prohibited, the administrator receives a message and the Server Monitor is started in `RESTRICTED` mode.

- "Restricted login" button

  The login dialog is closed, and the COMOS LS Server Monitor is displayed.

  Only the "Status products" and "Status checkouts" tabs are visible.

- "Close" button

  The login is canceled and the "COMOS LS Server Monitor" is closed.

If the directories for the licenses, the Named User files and/or log files are not specified in the "ComosLSCommon.config" file or there is no access to these directories, a message is displayed in the login dialog.

If the information of the license files, the named user files and log data should be displayed, these then have to be released on the remote computer.

## Entries in the "ComosLicenseServerMonitor.exe.config"

In the case of a remote installation, the following entries in the "ComosLicenseServerMonitor.exe.config" are of relevance:

See also chapter File: "ComosLicenseServerMonitor.exe.config" (Page 70).

- `<RemoteRememberLogin>`
- `<RemoteUseWindowsLogin>`
- `<RemoteUserLogin>`
- `<RemoteDomain>`

## 9.3 "File" menu

- "Running mode"

  The possible modes in which the server monitor can be started are displayed. The current mode is marked. You can switch to the other modes.

- "Clear status messages"

  A portion of the messages from the license server are output at the very bottom in the "Status messages" field. The entries in this field can be deleted via "Clear status messages". A complete list of messages is given in the log file.

  See also section "Logging" tab and menu (Page 66).

## 9.4 "License Server" tab and menu

### 9.4.1 "License Server" tab

Controls the license server.

**"COMOS LS" control group**

- "Stop COMOS LS" button

Terminates the ComosLSService, i.e. the license server.

The COMOS clients are closed if the license server is terminated. Any work that is open is lost.

- Traffic light: Running Level

  - Red (STOPPED): Server is stopped; no available licenses.

  - Yellow (RESTRICTED): Started with restrictions: the currently required Named User file is missing. The Named User sequence may be reset.

  - Green (FULL): Server active.

  - Question mark (UNKNOWN): An error occurred after starting the COMOS LS Server Monitor. The status of the COMOS LS Server cannot be detected. The "Start COMOS LS" or the "Stop COMOS LS" button is not available. However, it is possible to send status requests to the COMOS LS Server. Even if such a query delivers a positive result, the status UNKNOWN is retained.

- "Connection string to ComosLS" field

  The network server on which the ComosLSService runs. This field can also contain an alias. If this network server is shut down or fails, then the license server fails as well.

- "Connection port from ComosLS" field

  The port number under which the COMOS LS Server can be reached.

- "Last start time" field

  Start time of the license server.

- "Version" field

  Version of the license server.

  (You will find the version number of the COMOS LS Server Monitor under "Help > About".)

- "Ignore system proxy settings" field

  Displays the value for IgnoreProxySettings that has been entered in the "Comos.LicenseLib.config" file. The setting can here not be changed in the interface.

## "Dongle values" control group

- "Serial number" field

  Dongle ID of the license server dongle.

## "Information from the first license file" control group

- "Vendor" field

  Siemens AG

- "Client" field

  The in the dongle specified owner of the license file.

- "Restricted to dongle ID" field

  The on the dongle burned in ID. Must be the same as the ID on the dongle sticker.

## License files table

The table displays all the available license files.

Background: Due to the change to the new license server, it is possible to use more than one license file. The available licenses are the sum of all licenses (which have not expired) that are included in the license files.

## 9.4.2 "License Server" menu

This menu is part of the "License Server" tab. When the menu is opened, the corresponding tab is automatically displayed.

- "Start ComosLS"/ "Stop ComosLS"

  The same functionality as the according button. Caution: The COMOS clients are closed if the license server is terminated. Any work that is open is lost.

- "Refresh server info"

  Updates the tab.

- "Read dongle info"

  Reads out data in the public area of the dongle.

- "Reload existing license files"

  All license files located in the configured directory are reloaded and the current state on the COMOS LS Server is checked for consistency with the new information from the license files. The administrator gets a message concerning the process. If the license files cannot be loaded due to consistency errors, the current state is kept in the COMOS LS Server, and the administrator receives information regarding the errors.

- "Copy and reload new license files"

  First a dialog opens in which new license files can be selected. After confirming your selection the license files are copied to the configured directory.

  Afterward, "Reload existing license files" is executed automatically.

- "Disable selected license files"

  Invalid or expired license files initially remain in the overview. With this command such a file can be moved into a backup folder or be deleted. To do so, click the "Delete" button or the "Move" button. If you click the "Move" button, a security message is displayed if this license file has already been saved at an earlier time.

  If license files are to be deleted, the COMOS LS Server Monitor automatically checks to see if the sum of the remaining license files is consistent. If the remaining license files are not sufficient then there is a response to the user and the files are not deleted.

  As an alternative a license file can be deleted (or moved) on the file level. If you then refresh the COMOS LS Server Monitor, this has the same effect as the "Disable selected license files" command.

- "Passwords"

  – "Create password for applications"/ "Change password for applications": As of version 1.3.3, a password is required to start the COMOS LS User Manager. This password is stored in the following file:
  "<install path ComosLS>\Data\Basic\" directory, "Password.xml" file. This password can be created or changed via this menu item. If a password already exists, the name of the menu item changes to "Change password for applications". The password can also be set in the "Restricted" mode of the server.

  – "Create password for user access"
  A password is required to access the license server entered via the COMOS command line. This password is stored in the following file:
  "<install path ComosLS>\Data\Basic\", "PasswordUser.xml" file
  If a password already exists, the name of this menu item changes to "Change password for user access". The password can also be set when in "Restricted" server mode.
  See also chapter Procedure (Page 105).

# 9.5 "Status Products" tab

Module-related view of the licenses that are used and available.

**"Product" list**

Lists all products and modules that exist in the license files displayed on the tab. See also chapter "License Server" tab and menu (Page 59). Any desired number of entries can be selected from this list. The details of this selection are then displayed in the other lists.

**"Status enquiry" control group**

- "Start status enquiry" button

  Updates the tab.

- "Date of status enquiry" field

  The content of this tab is not updated continuously for reasons associated with performance. The status displayed on the tab can differ from the actual license usage due to users logging in and out. You can tell from the date how old the displayed status actually is. If necessary, you have to click the "Start status enquiry" button again.

**"Product details" table**

- "Product" column

  The relevant product (which means the relevant license).

- "Total count" column

  Total number of available licenses for this module in all available license files.

- "Checked out" column

  Number of licenses for this module that are currently in use ("checked out").

- "Type" column

  "Floating" or "Named User".

- "State" column

  "Not expired" or "Expired".

**"Sequences" table**

- "Product" column

  The relevant product (which means the relevant license).

- "Sequence ID" column

  Lists the assignment of the license to a license file.

  At the end, the license files have one unique counter per customer: the "Sequence ID". The associated license files can be found on the "License Server" tab by means of the Sequence ID.

- "Count" column

  Number of available licenses for this module in the license file specified with Sequence ID.

- "Expiration date" column

  Expiration date of the licenses. A license file does not necessarily need to have a general expiration date. It is also possible to order a license file from Siemens AG that assigns different expiration dates to the licenses or license blocks within the license file.

### "Status messages" field

Provides feedback message from the Server Monitor.

## 9.6 "Status Checkouts" tab

Mapping between licenses and users.

### "Status enquiry" control group

- "Start status enquiry" button

  Updates the tab in accordance with the selected option.

- "For all products" option

  The left-hand field receives the title "Product". All products that are at least available in one of the available license files appear in the list. All modules that are currently being used within the selected user group are marked in red.

- "For all users" option

  The left-hand field receives the title "User". All users who obtained at least one license are displayed in this list.

- "For user" option

  The left-hand field receives the title "User". The stated user is displayed in the list if this user obtained at least one license. Otherwise the list remains empty. The entry in the "For user" field must be identical to the login name in COMOS (not case-sensitive).

If you click on one or more entries in the list, specific information is displayed in the "Details" and "Count" lists.

- "Date of status enquiry" field

  Date on which the tab was last updated. The last update could have either taken place manually via the "Start status enquiry" button or automatically via "Update view after 1 minute".

- "Update view after 1 minute" option

  Automatically updates the tab after one minute. Without this option, the following applies: The displayed information could be outdated.

**"Details" table**

Columns 1 and 2 swap depending on whether products or users are entered in the list.

- "IP of client" column

  Network address of the computer that obtained the license.

- "Checkout time" column

  Time at which the license was checked out.

If a COMOS client is terminated unexpectedly, no direct release of the respective licenses is carried out.

If this unexpected termination took place further back than 6 minutes ago, the respective licenses are displayed with a yellow background.

After 10 minutes, the licenses are then marked at COMOS LS as temporarily unavailable and released again during the next Runtime check.

As long as this Runtime check has not yet been carried out, the licenses have a red background. This highlighting is only carried out if you have selected the "For all products" option.

**"Counts" table**

- "Licenses checked out" column

  For each selected entry in the list, the number of currently used licenses is displayed here.

- Column "Licenses: total count"

  For each selected entry in the variable list, the maximum number of available licenses is displayed here.

## 9.7 "License Files" tab

Content of the license files.

- "Path of license files" field

  Common storage location of all available license files.

- "Show status details" button

  Switches to the "Status Products" tab and selects all entries in the "Product" list.

**"License files" table**

Displays the content of the license files.

**"ComosLicense#001.xml" control group**

One or more subordinate tabs with the corresponding details.

- "Packages" list

  Structure of license packages:
  - First level: Package name
  - Second level: Licenses included

- "Dependencies" list

  In some cases, license dependencies are defined by Siemens AG. For example, one license can contain another license ("INCLUDE").

# 9.8 "Named User" tab and menu

## 9.8.1 "Named User" tab

Reads the contents of the selected Named User license file.

The Named User file can be purchased in addition to the license files. It is incremented and there can always be only one valid Named User file.

See also chapter Named Licenses (Page 43).

**"Actual 'Named User' files" control group**

**"File list" table**

You have to select a XML file here, which is then displayed in detail on the right.

**"Details of selected file" table**

This list points to the data of the XML files selected on the left.

- "Product"

  The functionality for which a license was checked out.

- "User"

  The assigned user.

- "User insertion time"

  Time at which the user was assigned to the product.

- "Tickets"

  Displays how many tickets were available in this XML file.

- "Ticket SID"

  Each addition of tickets increments the ticket sequence.

**"Colors" button**

Via this button explanations regarding the possible colors are provided in which a named user file can be displayed.

**"Named User file to compare" control group**

This area contains a list with all Named User files. If a file is selected there, the associated details are displayed in the "Details of selected file to compare" table and can be compared with the above displayed values.

## 9.8.2 "Named User" menu

- "Reload files"

  Reads the information from the license files again.

# 9.9 "Logging" tab and menu

## 9.9.1 "Logging" tab

Storage location of the log files:

The log files can be opened by double-clicking on them.

**"Load log files" control group**

- "Filter for reading the logfiles" fields

  Only log files whose file name corresponds to the specified filter are displayed in the "Log files" list.

- "Reload log files" button

  Updates the list of log files according to the selected filter settings.

## "Log files" control group

- "Path of active log files" field

  Shared storage location of the log files.

- "Path of moved log files" field

  Shared path of all backup log files.

- "Show moved log files" option

  Also displays the saved log files in the "Log files" list, provided that their file name corresponds to the specified filter.

## "Log files" table

List of all log files whose file name corresponds to the specified filter. The log files can be opened by double-clicking on them. Saved log files are displayed in blue.

The local log file of a Server Monitor remote installation is displayed in green.

## 9.9.2    "Logging" menu

This menu is part of the "Logging" tab and contains the following commands:

- "Reload files"

  Updates the list of log files according to the selected settings.

- "View file with registered application"

  Enabled: Displays the log file with the application registered for the .log extension.

  Disabled: Displays the log file with the selected application (notepad.exe by default).

- "Choose application to view file"

  Opens a dialog to select an application to be used to display the log files.

# 9.10 "Statistic" tab and menu

## 9.10.1 "Statistic" tab

Updates the "Workload" and "Denials" control groups according to the selected time range.

### "Status enquiry" control group

- "Start status enquiry" button

  Updates the lists for "Workload" and "Denials" according to the selected time range.

- "Per license groups" option

  The values per product are grouped according to license groups. If no license groups are defined or if there is no assignment of a product to a license group, a dash ("-") is displayed as the name.

- "Per users" option

  The values per product are grouped according to users.

- "For user" option

  The display is conducted per product for the stated user.

- "Evaluate from" and "Evaluate to" list

  Definition of a time range for which statistical data is supposed to be collected and displayed.

### "Workload" control group

Depending on the selected grouping, a "License group" or "User" header is assigned to the first column. The use of each product is indicated in the "Number of checkouts / Time used in hours" structure. If the product was not used, a dash ("-") is displayed.

The hour values are displayed in the `h,hh` format. A value of 1.5 thus corresponds to 1 hour and 30 minutes.

### "Denials" control group

- "Sum" table

  For each product the complete number of all declined license requests in a certain time range is displayed.

- "Denials" table

  Depending on the selected grouping, a "License group" or "User" header is assigned to the first column. For each product the complete number of declined license requests in a certain time range is displayed. If there are declined license requests the field is displayed with a yellow background.

## 9.10.2 "Statistic" menu

### Note

You are not permitted to store your own data or to edit the existing data inside the "<Comos LS>\Data\Logfiles\Statistic" directory or any of the subdirectories.

### Description

This menu is part of the "Statistic" tab and contains the following commands:

● "Generate data for workload"

Turns the generation/update of statistical data on the COMOS LS Server on and off.

● "Generate data for snapshot"

Turns the generation of data for the actual utilization on the COMOS LS Server on/off.

● "Start status enquiry"

Updates the "Workload" and "Denials" lists according to the selected time range.

● "Save data"

– "Actual workload"

Creates a CSV file with the values currently displayed in "Workload". The file name can be selected. The stored data is separated by semicolons.

– "Actual denials"

Creates a CSV file with the values currently displayed in "Denials". The file name can be selected. The stored data is separated by semicolons.

● "Create statistical file"

– "Usage"

Creates a CSV file with statistical information regarding the selected time range. The source files are:

"<Comos LS>\Data\Logfiles\Statistic\Users\<Year>\<Month>...": "ComosLSLicenseWorkload_<year>_<month>.log"

File structure:

1. First row with headers:

`Product;Timestamp;Usage;Count;Percentage Usage`

All other rows with the corresponding data.

– "Denials"

Creates a CSV file with information on denied requests with reference to the selected time range. The source files are:

"<Comos LS>\Data\Logfiles\Statistic\Users\<Year>\<Month>...":
"ComosLSLicenseWorkload_<year>_<month>.log"

File structure:

1. First row with headers:

`Product;Timestamp;Denial`

All other rows with the corresponding data.

# 9.11 File: "ComosLicenseServerMonitor.exe.config"

For additional configuration details of the "ComosLicenseServerMonitor.exe" file,

See also chapter ComosLSCommon.config (Page 28).

**<<ConfigSections>**

These settings are made automatically and must not be changed.

**<applicationSettings>**

These settings are made automatically and must not be changed.

**<<appSettings>**

These settings are partially made in the setup of the COMOS LS Server.

Authorized and experienced employees can also change these settings in the config file.

Some settings may only be changed together with settings in other config files.

- **<<RunningLevelMonitor>**

  Permitted values: `0 | 1`

  Current mode in which the Server Monitor is started. Is set automatically.

  – Value = 0 / `FULL`.

  – Value = 1 / `RESTRICTED`.

- **<IgnoreProxySettings>**

  Permitted values: 0 | 1

  – Value = 0

    Regard the proxy settings of the MS Internet Explorer.

  – Value = 1 (default and setting if entry missing)

    Ignore the MS Internet Explorer proxy settings.

- ● << `ComosLicenseServerKeepOnRunning` >

  Permitted values: 0 | 1

  - – Value = 0 (default and setting if entry missing)

    Quits the COMOS LS Server in the event of communication problems between the COMOS LS Server Monitor and COMOS LS Server (no answer or error message).

  - – Value = 1

    COMOS LS Server remains active.

- ● << `ComosLicenseServer` >

  Permitted values: String

  In normal cases, the COMOS LS Server Monitor automatically identifies the name of the machine on which the software is installed as the server name.

  If the machine name cannot be identified automatically, then the entry `add key="ComosLicenseServer"` is evaluated.

  In this case. the COMOS LS Server Monitor and the COMOS LS Server must still be installed on the same PC.

- ● < `LogfilesMaxSize` >

  States the maximum size of the log files.

  - – <X>: size in MB

  - – 0: no size restriction for the file (this is also the setting after installation)

  Dependency: < `PathLogFilesBackup` >

  This setting is only evaluated if the < `PathLogFilesBackup` > key exists. If the set size for the log file is reached, it is either deleted (the value for < `PathLogFilesBackup` > is empty) or copied to the directory specified in < `PathLogFilesBackup` >. Logging is then continued with a new file.

  Dependency: << `LogfilesSavePerMonth` >

  The < `LogfilesMaxSize` > key has priority over the < `LogfilesSavePerMonth` > key.

  If the < `PathLogFilesBackup` > key is present when the COMOS LS Server Monitor is started, the log file is either deleted or moved according to the associated value, independent of < `LogfilesMaxSize` >. If the < `PathLogFilesBackup` > key is not available (the log file is therefore still used), the value of < `LogfilesMaxSize` > is evaluated.

- **<<**LogfilesSavePerMonth**>**

  This setting is only evaluated if the **<**PathLogFilesBackup**>** key exists.

  – 0: Turned off (this is the value after installation)

  – 1: When the month changes, the log file is either deleted (the value for **<**PathLogFilesBackup**>** is empty) or copied to the directory specified in **<**PathLogFilesBackup**>**. Logging is then continued with a new file.

  Dependency: **<**PathLogFilesBackup**>**

  If the **<**PathLogFilesBackup**>** key is available when the Server Monitor is started, the log file is either deleted or moved according to the associated value, irrespective of **<**LogfilesSavePerMonth**>**. If the **<**PathLogFilesBackup**>** is not available (the log file is still being used), the value of **<**LogfilesSavePerMonth**>** is also evaluated.

- **<**RemoteRememberLogin**>**

  – 0: Login and domain/computer name are not stored

  – 1: Login and domain/computer name are stored

  This entry is only required in the case of remote installation; see also chapter Remote installation (Page 55).

- "**<**"RemoteUseWindowsLogin"**>**"

  – 0: Login data of the current Windows session are not used

  – 1: Login data of the current Windows session are used

  This entry is only required in the case of remote installation. See also chapter Remote installation (Page 55).

- "**<**"RemoteUserLogin"**>**"

  Login if **<**RemoteRememberLogin**>** is set to 1

  Dependency: **<<**RemoteRememberLogin**>**

  This entry is only required in the case of remote installation. See also chapter Remote installation (Page 55).

- **<**RemoteDomain**>**

  Domain or computer name if **<**RemoteRememberLogin**>** is set to 1

  Dependency: **<<**RemoteRememberLogin**>**

  This entry is only required in the case of remote installation. See also chapter Remote installation (Page 55).

## <system.diagnostics>

- **<**Switches**>**

  The name of the entered key must not be changed. The associated value is set to Information after the installation.

  This value determines which kind of messages should be logged. Following values are possible (hierarchically from top to bottom):

  – Critical

  – Error

  – Warning

  – Information

  – Verbose

  A value always includes the hierarchically subordinate values. The Warning value, for example, also logs all messages classified as Error or Critical.

  A change is first put into effect after restarting the COMOS LS Server Monitor.

  When the COMOS LS Server Monitor is started, certain information is always logged independently of the set level. This includes the version and the port as well as the key-value-pairs that are read from the configuration files.

- **<<**sources**>**

  Only one setting is allowed to be edited here:

  `<system.diagnostics> <sources> <source ...> <listeners> <add name ...>`

  `initializeData = <path + name logfile>`

  The path must match the following entry:

  `<appSettings> <PathLogFiles>`

  Generates the optional log file.

- **<trace>**

  For internal purposes. Must not be changed.

**Example**

```xml
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
    <configSections>
        <sectionGroup name="applicationSettings"
type="System.Configuration.ApplicationSettingsGroup, System,
Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" >
            <section
name="Comos.LicenseServerMonitor.Properties.Settings"
type="System.Configuration.ClientSettingsSection, System,
Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
requirePermission="false" />
        </sectionGroup>
    </configSections>
    <applicationSettings>
        <Comos.LicenseServerMonitor.Properties.Settings>
            <setting name="ComosLicenseWebService"
serializeAs="String">
                <value>http://cls/WebServices/</value>
            </setting>
        </Comos.LicenseServerMonitor.Properties.Settings>
    </applicationSettings>

  <appSettings>
    <add key="ComosLicenseServerKeepOnRunning" value="0" />
    <add key="FilterLogFiles" value="*.*" />
    <add key="ViewLogfileWith" value="C:\WINDOWS\notepad.exe" />
    <add key="ViewLogfileWithRegistered" value="1" />
    <add key="StatisticDummyBlock" value="0" />
    <add key="LogfilesMaxSize" value="0" />
    <add key="LogfilesSavePerMonth" value="0" />
  </appSettings>

  <system.diagnostics>
    <switches>
      <add name="ComosLSMonitor" value="Information" />
    </switches>

    <sources>
      <source name="ComosLSMonitor" switchName="ComosLSMonitor"
switchType="System.Diagnostics.SourceSwitch">
          <listeners>
            <add name="ComosLSMonitor"
                type="System.Diagnostics.DelimitedListTraceListener"
                delimiter=" "
```

```
           initializeData="C:/Comos/ComosLS/Server/Data/Logfiles/ComosLSMonitor
.log"
                   traceOutputOptions="DateTime" />
            <remove name="Default"/>
         </listeners>
         </source>
     </sources>

     <trace autoflush="true" indentsize="2" />
   </system.diagnostics>

</configuration>
```

# Remote License Service

<div style="text-align: right; font-size: large;">10</div>

## 10.1 Version

See also section Versions of the COMOS LS tools (Page 11).

## 10.2 Purpose

The COMOS LS Remote License Service serves to connect a COMOS client to a Citrix Server without having to use the COMOS ICA Client. Instead, the Microsoft or Citrix terminal client can be used. It is recommended to always work with the most recent client version.

As a part of this technique, the client transfers its license to the terminal server. The license may be a PC license or it may be obtained from a license server.

With the COMOS LS Remote License Service, the same result can be achieved as with a Citrix client, but without VPN access, and also via a web-based client (e.g. Citrix Web Interface).

You can find additional information on this topic in the "Installation" manual, keyword "COMOS on Citrix".

## 10.3 Prerequisites/System environment

Recommended: COMOS 8.2 SP424 or higher (installed on the server)

Setup for COMOS LS Remote License Service (CLS RemoteLicenseServicexx.zip)

### Releases

The COMOS LS Remote License Service is released for the following operation systems:

- Windows XP
- Windows XP Pro SP2
- Windows XP Pro SP3

# 10.4      Installation on the client

## Unpacking the zip file

CLS RemoteLicenseServicexx.zip

The zip file is moved to a dedicated, empty folder and is unpacked. After unpacking, the following file is started:

"Setup.exe"

The InstallShield Wizard will now guide you through the installation.

## Optional: Remove the previous Remote License Service

If a Remote License Service is already installed on the client, the "Setup.exe" file will first ask you to uninstall the previous version.

The uninstallation language is the same language that was used during the installation. The following steps are required for uninstallation:

1. Setup language

   "Choose a setup language"

2. Welcome window

3. Program administration

   Here, select: "Remove program"

4. Remove program

5. Finish

InstallShield Wizard is completed. Now, the "Setup.exe" file has to be restarted manually.

## Installation

Setup runs through the following steps:

1. Setup language

   "Choose a setup language"

2. Welcome window

3. Select destination folder

4. Path to the .dat file

   Select the folder in which the dat file is to be created. The folder selected or entered here is handled as follows:

   – The folder is created, if required.

   – The "client.dat" file is created in the folder.

   – "Control Panel > System": "Extended" tab, "Environment variables" button: The "RemoteLicense" system variable is created and populated with the above specified folder.

5. Optional: License server

   At this point, the InstallShield Wizard checks whether COMOS is already installed on the PC. If COMOS is not installed, the "License server" dialog also appears.

6. Install

7. Finish

InstallShield Wizard is completed.

### Central installation files

Alternatively: the installation files can also be stored in the network. In this case, the setup can be controlled by means of an ini file:

In parallel with the "setup.exe" file:

```
rls.ini
```

[DATFILE]

```
Path="C:\RemoteLicense"
```

The path information then appears as the default value in the "Enter Directory of the *.dat Communication File" dialog window. The default value can be overwritten manually.

Otherwise, the setup works exactly as described above.

## 10.5 Installation on the server

### Terminal server and Citrix server

COMOS switches to the Remote License technique when an environment variable named "RemoteLicense" is detected on program startup. If this setting is made on the server side in the environment variables of the operating system, it affects all the COMOS instances that are launched on the server.

If this is not desired, a session-based setup is possible. For this, the environment variable is only set once a user has started COMOS. Then the RLS can be used as required.

To allow session-based setting of the environment variable, this variable must be configured in a script in which COMOS is subsequently started. It then applies to one user and one COMOS; other users are not affected by this. This script is saved in a file and published on Citrix as an additional application. This script file can be run on a terminal server by double-clicking on it.

Alternatively, the script can also be embedded in the login scripts of specific users.

When the environment variable is detected, COMOS writes a file named "client.dat" to the path that is included in the "RemoteLicense" environment variable. For this mechanism to work, COMOS needs write access on the client.

## Configuring write access for Citrix client software

Open the Citrix connection. Select the "Full access" option from the dialog box.

If the window does not open, right-click the Citrix client icon in the "Connection Center" task bar.

A "Citrix Connection Center" dialog box appears.

Select your connected server and click the "File security" button. Assign the desired rights.

## Configuring write access for MS Terminal Server clients

For Terminal Server the Remote Desktop Client is required.

1. From the Windows "Start" menu select "Run" and enter "mstsc.exe". The Remote Desktop client starts:

2. Click "Options".

3. Open the "Local Resources" tab.

4. Select the "Drives" options.

5. Save your settings as a file or click directly on "Connect".

## Sequence

A script is prepared on the server.

- The "RemoteLicense" environment variable is set in the script.

- When using the Citrix client: `\\client\c$\<path>`

- When using the Terminal Server client: `\\TSClient\c\<path>`

- The Citrix client accesses the Citrix Server and starts the script file, which is published as an application. The particularity here: The environment variable set in the script only affects the user's own session; it has no effect on those of other users.

## Script examples

The script examples must be located parallel to "Comos.exe".

1. Citrix Server
```
set RemoteLicense=\\client\C$\RemoteLicense\Client.dat
start comos.exe
exit
```

2. Terminal Server
```
set RemoteLicense=\\TSClient\c\RemoteLicense\Client.dat
start comos.exe
exit
```

## 10.6 Operation

**Start parameter**

/AUTOMINIMIZE: The application is minimized automatically after the start without a confirmation.

**Start**

Click on "Start > Programs > COMOS Remote License Service".

The following prompt appears:

"Minimize to tray"

"OK": The Remote License Service interface is minimized and can only be opened via the icon in the system tray.

"Cancel": The Remote License Service user interface remains open.

Then connect the computer to the terminal server and start COMOS.

## 10.7 LicenseLib

### 10.7.1 General

LicenseLib controls access to the local license files (if available) and handles all communication with the COMOS LS Server. LicenseLib is included both in the current service packs and in the Remote License Service setup.

The LicenseLib of the service pack and the LicenseLib of the Remote License Service are not aware of each other and therefore do not interfere with each other:

- LicenseLib of the service pack: is registered so that COMOS always finds its own LicenseLib.

- LicenseLib of the Remote License Service: is found automatically by means of a manifest file.

### 10.7.2 Registering / Manifest

The LicenseLib for the Remote License Service is not registered, but is found automatically by means of a manifest file.

## 10.7.3 Storage location of the licenses

See also section Storage location of the licenses (Page 52).

If the Remote License Service is used with an individual local license, then the following procedure is the easiest: Copy the "ComosLicense.xml" file to the installation directory of the Remote License Service.

## 10.7.4 File: "Comos.LicenseLib.config"

### Comments

<Configuration> section: Single-row XML comments (which start with <!--) are permitted. All other comments or additions are prohibited.

### Location

After the installation, this file is located in the installation directory of the Remote License Service. If the Remote License Service accesses a license server, the port can be configured there.

The following method is used to search for the "Comos.LicenseLib.config" file:

- First:

  Starting from the current directory: Change to the higher-level directory. A search is performed there to find the "\config" directory, and this directory is in turn searched for the "Comos.LicenseLib.config" file.

- Then:

  After this, the current directory of LicenseLibis searched for the "Comos.LicenseLib.config"file.

- Then:

  The default port 27011 is tested.

### Syntax

```
<setting key="ComosLicenseServerPort" value="xxx" />
```

# User Manager

# 11

## 11.1 Version

See also chapter Versions of the COMOS LS tools (Page 11).

Dependency: COMOS LS User Manager 1.3.4 or later requires at least COMOS LS Server 1.5.6.

## 11.2 Purpose

The COMOS LS User Manager manages users and license groups and enables assignments of users to licenses of the "NAMED_USER" type. Further one can define assignments of users and license groups to products, where the corresponding assignment is classified by a type.

The administrator first works in the protected environment of the COMOS LS User Manager. Changes do not affect users' work until the administrator selects the "Save changes" button.

If there are any changes that still have not been taken into account when the COMOS LS User Manager is closed, the administrator is notified. The administrator then can discard the unaccounted changes or transfer them to the license server via "Save changes".

## 11.3 Prerequisites/System environment

Framework Net 2.0

Setup of the COMOS LS User Manager (`CLS UserManagerxx.zip`)

### Releases

COMOS LS User Manager is released for the following operating systems:

**32-bit**

- Windows XP Pro SP3
- Windows Server 2003 SP1
- Windows Server 2008 SP1

**64-bit**

- Windows Server 2003 SP1
- Windows Server 2008 SP1
- Windows Server 2008 R2 SP1

# 11.4     Installation

## Unpacking the zip file

CLS UserManagerxx.zip

The zip file is moved to a dedicated, empty folder and is unpacked. After unpacking, the following file is started:

"Setup.exe"

The InstallShield Wizard will now guide you through the installation.

## Optional: remove the previous Remote License Service

If a COMOS LS User Manager is already installed on the client, "Setup.exe" will first ask you to uninstall the old version.

The following steps are required for uninstallation:

1. Setup language

   "Choose a setup language"

   The uninstallation language is the same language that was used during the installation.

2. Welcome window

3. Program administration

   Here, select: "Remove program"

4. Remove program

5. Finish

InstallShield Wizard is completed. Now, "Setup.exe" has to be restarted manually.

## Installation

Setup runs through the following steps:

1. Setup language

   "Choose a setup language"

2. Welcome window

3. Select destination folder

4. License server

   The COMOS LS User Manager must work with a license server.

   "Name" Any.

   "Port": The port specification `27011` is only a suggestion and can be changed.

5. Install

6. Finish

InstallShield Wizard is completed.

## 11.5 Starting and saving

### Password

COMOS LS User Manager Version 1.3.3 and later can only be started with a password. This password is generated via the Server Monitor and is administrated and checked via the server.

If an incorrect password is entered or COMOS LS Server is not running, a message is displayed and the application is closed.

See also chapter "License Server" menu (Page 60).

### "Save changes" button

You must save all changes before changing to another tab. The information on the tabs is interdependent. If you switch to another tab without having saved previously you might see details that are out of date and which are, therefore, erroneous.

## 11.6 "File" menu

### Refresh Views

Sends a request to the COMOS LS Server and refreshes the lists.

### Exit

Closes the User Manager.

# 11.7    Named User

## 11.7.1    "Named User" tab

### "User list"

Display of all users that were detected as users and can be mapped to a product of the type `NAMED_USER`.

### "License list of type NAMED_USER" table

Displays all products of the type `NAMED_USER` :

Here only certain products can have licenses of the type `NAMED_USER` . COMOS LS Server tells COMOS LS User Manager which licenses of type `NAMED_USER` are available.

- Column "Licenses: total count"

  Maximum number of available licenses.

- Column "Licenses: available"

  Maximum number of available licenses. If more users are assigned than there are available licenses, then the difference is displayed in this column by a negative number which has a red background.

### "Assign" button

After the start, the button is displayed in red and cannot be selected.

If at least one entry is selected in the "User list" table and at least one in the "License list of type NAMED_USER", the color changes to green and the button can be used. Clicking the button assigns the selected users to the selected product and highlights them in yellow in the "Assigned to products" table.

When the details are sent to the COMOS LS Server via the "Save changes" button, the yellow highlighting disappears.

An already assigned user cannot be assigned again.

## "Assigned to products" table

Displays all users that are already assigned to a product of the type NAMED_USER.

- "Assigned to products" table, "Delete selected assignments" context menu

  Selecting this menu brings up a prompt asking whether you really want to delete the assignment. If the prompt is confirmed, all entries marked in green are deleted immediately.

  If there are enough tickets available, already existing entries are marked in red and are thus marked for deletion. For each entry marked in red the number of tickets on the status bar is incremented by one digit. The display in the "License list of type NAMED_USER" list is refreshed if needed.

  If there are not enough tickets available, a message appears and deleting is not possible.

- "Assigned to products" list, "Remove flag for deletion from selected assignments" context menu

  If a red mark exists for a selected element, it is removed again.

If the total of the entries is greater than the specification in the "Licenses: total count" column, then you have fewer licenses for a product than entered Named Users. See also chapter Administration of Named Licenses (Page 46).

## "Save changes" button

See also chapter Starting and saving (Page 85).

## 11.7.2 "Named User" menu

## Change Named User file

In the "Change Named User file" dialog box, the "Current sequence ID" and any incidentally generated "Request code" are initially displayed:

The "Request code" is disclosed to the support employee by telephone. This employee provides the "Answer code".

The user enters the "Answer code" and presses "Reset dongle".

## Automatically delete overwritable files

Sets a flag on the license server to determine if the remaining files with a higher "sequence ID" should be deleted automatically after a reversion to an older Named User file.

## Add tickets

Calls a dialog window in which a ticket file can be selected. After selecting a ticket file, tickets are entered at the license server and the view is refreshed.

## Automatically add user

Sets a flag at the license server to determine if users of Named User licenses should automatically be entered in the Named User file when checking out.

Each user must be individually activated in the License User Manager if this option turned off.

## "Save changes" button

See also chapter Starting and saving (Page 85).

# 11.8 License Groups

## 11.8.1 "License Groups" tab

## "New license group" control group

- "Group name" / "Confirm group name" field

  Entry and confirmation of a new license group. The input is converted to upper-case letters.

- "Add to group list"

  The new license group is added to the "Group list" and displayed with a green background.

  An already existing license group cannot be inserted a second time. The administrator then receives a message.

## "Group list"

Contains all already saved and newly collected (green highlighted) license groups.

- "Group list"
  - "Delete selected groups" context menu

    Entries marked in green are deleted immediately. Already existing entries are marked in red and are thus marked for deletion.

  - "Remove flag for deletion from selected assignments" context menu

    If a red mark exists for a selected element, it is removed again.

- "Group list"
  - "Change to license assignments" context menu

    Switches to the "License Assignments" tab, where the "Group list" and "Assigned groups" subtabs are displayed.

**"Save changes" button**

        See also chapter Starting and saving (Page 85).

## 11.8.2     "License Groups" menu

**"Save changes" button**

        See also section Starting and saving (Page 85).

# 11.9     "Users"

## 11.9.1     "Users" tab

**"New user" control group**

- "User name" / "Confirm user name"

  Used to enter and confirm a new user. The input is converted to upper-case letters.

- "Comment"

  When you enter a new user, you have the option of recording a comment directly.

  You can edit or add to a comment at any time. To do this, double-click the relevant entry in the "User list". The selected user appears in the "New user" control group. The user is prevented from accessing the "User list" and fields. The "Comment" field turns yellow and you can enter a comment inside it. The description of the "Add to user list" button changes to "Update user".

  Once you have entered your comment and confirmed it by pressing the "Update user" button, the software reverts to the original state. The entire row in the "User list" is now highlighted in yellow, which means that changes have been made in respect of the user. To complete the process, click the "Save changes" button.

  All data is encoded and sent to the license server in encrypted format. When entering your comment, avoid using any foreign and special characters (because of the ANSI encoding/ANSI decoding used to date). Any such characters will be lost during transfer.

- "Add to user list" button

  The new user is added to the "User list" and displayed with a green background.

  An already existing user cannot be added again. The administrator then receives a message.

**"User list"**

Contains all already stored and newly collected users (displayed in green).

- "User list"
    - "Delete selected users" context menu

        Entries marked in green are deleted immediately. Already existing entries are marked in red and are thus marked for deletion.

    - "Remove flag for deletion from selected assignments" context menu

        If a red mark exists for a selected element, it is removed again.

    - "Change to license assignments" context menu

        Switches to the "License Assignments" tab, where the "User list" and "Assigned users" subtabs are displayed.

    - "Change to license group assignments" context menu

        Switches to the "License Group Assignments" tab.

    - "Change to 'Named User' list" context menu

        Switches to the "Named User" tab.

    - "Change to package assignments" context menu

        Switches to the "Package Assignments" tab.

- "License group assignments" column

    Displays all license groups to which the user is assigned.

- "License assignments" column

    Display of all licenses assigned to the user.

- "Part of Named User list" column

    Indicates whether the user is included in a Named User list.

- "Package assignments" column

    The package name is displayed here, assuming an assignment has been set up for the relevant user.

**"Save changes" button**

See also section Starting and saving (Page 85).

## 11.9.2    "Users" menu

### Import Named User

All users who are already assigned to a product as Named Users, but do not yet exist as users are imported into the "User list". This menu is intended for customers who have already created Names Users using an earlier version and do not want to enter them again.

### Import from text file

Imports all entries of a previously selected file as user. Each row of the file is interpreted as a user, and spaces are deleted.

### Import from CSV file

Imports all entries of a previously selected file as user. The entries have to be separated by a semicolon; line breaks and spaces are deleted.

### "Save changes" button

See also section Starting and saving (Page 85).

## 11.10    License Group Assignments

## 11.10.1    "License Group Assignments" tab

### "User list"

List of all collected users that can be assigned to a license group. Multiple users can be selected.

### "Group list"

List of all collected license groups to which a user can be assigned. A selection of multiple license groups is possible.

## "Assign" button

After the start, the button is displayed in red and cannot be selected.

If at least one entry is selected in the "User list" and one in the "Group list", the color switches to green and the button can be used. Clicking this button assigns the selected users to the selected license groups and highlights them in yellow in the "Assigned users" list.

When the details are sent to the COMOS LS Server via the "Save changes" button, the yellow highlighting disappears.

An already existing assignment cannot be created again. The administrator receives a message to this effect.

## "Assigned users" list

List of all users already assigned to a user group.

An already existing user cannot be added again. The administrator then receives a message.

- "Delete selected assignments" context menu

  Entries marked in green are deleted immediately. Already existing entries are marked in red and are thus marked for deletion.

- "Remove flag for deletion from selected assignments" context menu

  If a red mark exists for a selected element, it is removed again.

## "Save changes" button

See Starting and saving (Page 85).

## 11.10.2 "License Group Assignments" menu

## "Save changes" button

See Starting and saving (Page 85).

# 11.11 License Assignments

## 11.11.1 "License Assignments" tab

**"User list"**

List of all collected users who can be assigned to a product. Multiple users can be selected.

**"Group list"**

List of all collected license groups that can be assigned to a product. A selection of multiple license groups is possible.

**"License list"**

List of all products to which users and/or license groups can be assigned. For each product, the number of the existing licenses and the number of already reserved licenses are displayed.

**"Assigned users" list**

List of all users already assigned to a product. An already existing assignment cannot be added again. The administrator then receives a message.

- "Delete selected assignments for users" context menu

  Entries marked in green are deleted immediately. If these are of the type "RESERVE", the "Reserved" column in the "License list" is refreshed accordingly. If there are no existing new assignments left, the corresponding value is displayed normally again.

  Already existing entries are marked in red and are thus marked for deletion.

- "Remove flag for deletion from selected user assignments" context menu

  If a red mark exists for a selected element, it is removed again.

**"Assigned groups" list**

List of all license groups that are already assigned to a product. An already existing assignment cannot be added again. The administrator then receives a message.

- "Delete selected assignments for groups" context menu

  Entries marked in green are deleted immediately. If these are of the type "RESERVE", the "Reserved" column in the "License list" is refreshed accordingly. If there are no existing new assignments left, the corresponding value is displayed normally again.

  Already existing entries are marked in red and are thus marked for deletion.

- "Remove flag for deletion from selected group assignments" context menu

  If a red mark exists for a selected element, it is removed again.

## "… as type" group

Every assignment to a product is classified by a type.

- "RESERVE"

  The number of licenses specified for the type "RESERVE" is reserved so that this number is always available for the assigned users and/or license groups.

  Here the number of licenses to be reserved must be clearly stated.

- "EXCLUDE"

  The use of the product is not allowed for users who are directly or indirectly assigned via a license group.

- "INCLUDE"

  The use of the product is allowed for users who are directly or indirectly assigned via a license group.

## "Assign" button

After the start, the button is displayed in red and cannot be selected.

If at least one entry is selected in the "User list" or the "Group list", and one entry is selected in the "License list", the color switches to green and the button can be used. If the button is used, the selected users or license groups are assigned to the selected product with the selected type and displayed in yellow in the "Assigned users" list or the "Assigned groups" list.

When the details are sent to the COMOS LS Server via the "Save changes" button, the yellow highlighting disappears.

- Special case: "RESERVE"

  If these are of the type "RESERVE", the "Reserved" column in the "License list" is refreshed accordingly and highlighted in yellow. This update now displays the current status within the "COMOS LS User Manager" and therefore differs from the values still stored on the license server.

  New assignments can only be made for the type "RESERVE" if the number of licenses already reserved plus the number of new licenses to be reserved does not exceed the total number of licenses for the respective product.

An already existing assignment cannot be created again. The administrator receives a message to this effect.

## "Save changes" button

See also chapter Starting and saving (Page 85).

## 11.11.2 "License Assignments" menu

### "Save changes" button

See also section Starting and saving (Page 85).

## 11.12 Package Assignments

### 11.12.1 "Package Assignments" tab

### "User list"

Contains all the users entered on the system who can be assigned to a package. Multiple users can be selected.

### "Package list"

Contains all the packages from the license files to which a user is assigned.

Only one package can be selected at a time, because a user may only be assigned to one of them.

### "Assign" button

After the start, the button is displayed in red and cannot be selected.

If at least one entry is selected in the "User list" and one entry (and only one entry) is selected in the "Package list", the color changes to green and the button can be used. Clicking this button assigns the selected users to the selected package and highlights them in yellow in the "Assigned users" list.

### "Save changes" button

When the details are sent to COMOS LS via "Save changes", the yellow highlighting disappears. An already existing assignment cannot be created again. If applicable, you will be notified accordingly.

See also chapter Starting and saving (Page 85).

**"Assigned users" list**

Contains all the assignments between a user and a package. An already existing user cannot be added again. If applicable, you will be notified accordingly.

The "Assigned users" list has an associated context menu containing the following menu items:

- "Delete selected assignments"
  - Entries marked in green are deleted immediately.
  - Already existing entries are marked in red and are thus marked for deletion.
- "Remove flag for deletion from selected assignments"
  - If a selected element is marked in red, the red marking is removed again.

## 11.12.2 "Package Assignments" menu

**"Save changes" submenu**

Corresponds to the "Save changes" button on the "Package Assignments" tab.

See also section "Package Assignments" tab (Page 95).

## 11.12.3 Status

Existing assignments are displayed in the "Assigned users" list on the "Package Assignments" tab.

See also section "Package Assignments" tab (Page 95).

## 11.12.4 Relationship between "Package Assignments" and "License Assignments"

Just because a user happens to be assigned to a package, this does not mean that the user concerned can only use the licenses contained in this one package.

If a license not included in this package is requested in COMOS and is available, this license is also placed at the user's disposal.

If, on the other hand, you only want the user to have access to the licenses included in the assigned package, proceed as follows: Go to the "License Assignments" tab and stop the user concerned from having access to all licenses.

These two options ensure a high degree of flexibility when using packages and license assignments.

## 11.13      "Help" menu

**About...**

Version information.

**COMOS LS.pdf**

Help documentation.

## 11.14      Status area

**License server status**

Indicates the network name of the server, the dongle ID and the proxy settings.

**Named User status**

Indicates the ID, the available tickets, and the current sequence identifier ("Ticket SID").

## 11.15 ComosLicenseUserManager.exe.config

**<<ConfigSections>**

These settings are made automatically and must not be changed.

**<applicationSettings>**

These settings are made automatically and must not be changed.

**<appSettings>**

These settings are made in the setup.

Authorized and experienced employees can also change these settings in the config file.

Please note: Some settings may only be changed together with settings in other config files.

- **<IgnoreProxySettings>**

  Permitted values: 0|1

  – Value = 0:

    Regard the proxy settings of the MS Internet Explorer.

  – Value = 1: (default and setting if an entry is missing)

    Ignore proxy settings of the MS Internet Explorer.

- `<add key="ComosLicenseServer" value=""/>`

- `<add key="ComosLicenseServerPort" value="27011" />`

  Default value: `27011`

  This value is also used in the case of a missing key or an empty value.

# ICA Client

# 12

## 12.1 Version

See also section Versions of the COMOS LS tools (Page 11).

## 12.2 Aim

The technical functions of the COMOS LS ICA Client and the commercially available Citrix clients are largely identical. However, the client workstation must have an installation-capable work environment. So-called "dummy clients", on which no independent software can be installed, are unsuitable for the COMOS LS ICA Client.

## 12.3 Prerequisites/System environment

Setup for Framework Net 2.0

Setup for COMOS LS ICA Client (`CLS ICA-Client xx.zip`)

### Releases

COMOS LS ICA Client is released for the following operating systems:

- Windows XP Pro SP2

COMOS LS ICA Client is released for the following software:

- Citrix Client Neighborhood 9.0 (or earlier)

  The CLS ICA Client setup does not include an optional setup for the Citrix client. Citrix Client Neighborhood 9.0 must therefore be installed.

- COMOS LS Server 1.3 (or higher)

## 12.4 Installation

**Unpacking the zip file**

CLS ICA-Client xx.zip

The ZIP file is moved to a dedicated, empty folder and is unpacked. After unpacking, the following file is started:

"Setup.exe"

The InstallShield Wizard will now guide you through the installation.

1. Language selection

2. Welcome screen

3. License agreement

4. Target folder

5. License server / License manager server (optional)

   This dialog appears only if a valid configured version of COMOS is not yet available on the PC. If COMOS is installed, the available licenses can continue to be used as usual.

6. Installation startup

## 12.5 Operation

### 12.5.1 Starting the COMOS ICA Client

The COMOS LS ICA Client requires the PC to be already connected to the target network.

If the PC is in the same domain as the Citrix Server, then a connection is automatically available. If the PC and the Citrix Server are in different domains, then you must first access the external network (via modem access, drive connection, etc.). The COMOS LS ICA Client can only be started when the external domain is visible in the Explorer in the network environment.

Then click "Start > Programs > Comos ICA Client".

When the COMOS LS ICA Client starts, the following two windows can be seen:

- "Options" window
- "COMOS ICA Client" window with two subsections

## 12.5.2    COMOS LS ICA Client main window

### Published applications

Applications (programs) that were released on the Citrix Server by the administrator are displayed in the "Published Applications" area on the left. Each of the ICA symbols represents a preconfigured access to an application.

The applications can also be located on different servers. Where the application is actually located and how it is configured is of little importance to you as a user. You only need to know which of the displayed icons you need to click on. You get this information from you Citrix administrator.

The window may be empty or incomplete during startup. This can have the following reasons:

● The Citrix ICA Client is not configured correctly.

● The Citrix Server administrator has not released any applications.

● There are different Citrix Servers with different versions. For reasons attributable to Citrix, only applications that have been published on the latest Citrix Server are displayed initially in a network. See also chapter Options (Page 102).

### User-defined connections

Your own "user-defined connections" can be displayed in the COMOS LS ICA Client. This type of connection provides a completely preconfigured option to access the appropriate connection. (Technically speaking: The `appserv.ini` file of Citrix is read.)

Use:

Alternative 1: "Options", "Login" tab: Enter the password for a user-defined connection here. Then double-click the corresponding icon.

Alternative 2: Double-click the corresponding icon. A small login window opens in which you must enter the appropriate password.

### Menu of the "Comos ICA Client" main window

There are three icons above the two areas in the "Comos ICA Client" window.



Close



Open ICA file

Enables access for workstations that do not have a direct access to the network. This can be done by opening a predefined file from the Citrix administrator containing all necessary data for access. The file can be sent as usual, via e-mail or by means of a disk. The ICA file is then opened here and the connection is established.

Help (Opens this text)

## Direct start

You can drag the displayed ICA applications as well as the user-defined connections as a link from the COMOS LS ICA Client onto the desktop.

## 12.5.3    Options

### "Login" tab

- "User name", "Password" and "Domain" fields

Connection data for the Citrix connection. Input is not absolutely necessary: Missing information will be requested subsequently when starting the application or establishing the user-defined connection.

You will be logged onto both the external domain and COMOS using this information. More precisely: Only COMOS is opened initially, but when you open a database, the "User name" of the domain login is used as the user name within Comos (in the "User name" field).

The user name must be identical for both logins (COMOS; Domain). Make sure that the user name in COMOS has the required permissions.

- "Server" field / "Direct start" button

Allows you to directly access the Citrix Server itself (not just a separate program on the Citrix Server).

Security risk: Do not allow general access via quick launch!

Application: Enter the server name in the "Server" field and click the "Direct start" button. The "Server" field can remain blank for all other cases.

### "Graphic" tab

- "Window size" list

    - "User-defined" Enter the height and width in pixels

    - "Percentage": Enter the percentage value for the screen size.

    - "Full screen": Full screen display.

The window size also specifies the maximum size in which COMOS is visible. COMOS cannot project past the COMOS LS ICA Client.

- "Window colors" list: Color settings for the Citrix connection.

**"General" tab**

- "Server selection" field

  The "Released applications" subsection may be incomplete at the start. This may be caused by the fact that different Citrix Servers with different versions exist in the network. For reasons attributable to Citrix, only applications that have been published on the latest Citrix Server are displayed initially in a network.

  In this case special servers can be added to search for applications. As soon as a server is added, all released (published) applications will be displayed.

- "Encoding" field

  The entry for this field depends on the type of encryption required by the released application. Contact your Citrix administrator for more information.

## 12.6 Closing the COMOS session

When the COMOS session is closed, it is recommended to close the ICA Client. This step ensures that all components are released on Windows systems.

## 12.7 LicenseLib

### 12.7.1 General

`LicenseLib` controls access to the local license files and handles all communication with the COMOS LS Server. `LicenseLib` is contained both in the current service packs and in the COMOS LS ICA Client setup.

The `LicenseLib` of the service pack and the `LicenseLib` of the COMOS LS ICA Client are not aware of each other and therefore do not interfere with each other:

- `LicenseLib` of the service pack: is registered so that COMOS always finds its own `LicenseLib`.

- `LicenseLib` of the COMOS LS ICA Client: is found automatically by means of a manifest file.

### 12.7.2 Registering / Manifest

The `LicenseLib` for the COMOS LS ICA Client is not registered, but is found automatically by means of a manifest file.

## 12.7.3 Storage location of the licenses

See also chapter Storage location of the licenses (Page 52).

If the COMOS LS ICA Client is used with a local license, the following procedure is the easiest:

Copy the "ComosLicense.xml" file to the installation directory of the COMOS LS ICA Client.

## 12.7.4 "Comos.LicenseLib.config" file

### Comments

The <`configuration`> section must not contain any xml comments.

### Location

After the installation, this file is located in the installation directory of the COMOS LS ICA Client. If the COMOS LS ICA Client accesses a license server, the port can be configured there.

The following method is used to search for the "Comos.LicenseLib.config" file:

- First:

  Starting from the current directory of LicenseLib: Change to the higher-level directory. A search is performed there to find the "\config" directory, and this directory is in turn searched for the "Comos.LicenseLib.config" file.

- Then:

  After this, the current directory of "LicenseLib" is searched for the "Comos.LicenseLib.config" file.

- Then:

  The default port `27011` is tested.

### Syntax

```
<setting key="ComosLicenseServerPort" value="xxx" />
```

# Entering the license server using the COMOS start parameter

# 13

## 13.1 General

If you are unable to access the COMOS LS, there are alternative ways to obtain a license. However, these methods require software to be installed on the local PC:

- COMOS with local license file
- Remote License Service (RLS)
- COMOS ICA Client

Even if you do not have locally installed software, there is still another way you can access a COMOS LS: by using a command line to enter the COMOS LS.

## 13.2 Procedure

### Parameter transfer

To start COMOS, enter a COMOS LS by means of parameter transfer with the `/LS` key.

Examples:

```
Comos.exe /LS: <xyz>

Comos.exe /LS: <xyz>:<port>

Comos.exe /LS : <xyz> :<backup>

Comos.exe /LS : <xyz>:<port>;<backup>:<port backup>
```

All license requests are then sent to this server. To enable you, in your capacity as an authorized user, to address the license server that has been entered, there is a password stored on the license server concerned. You need to know this password and enter it once prior to the initial connection to the license server. The password is then transmitted to the license server, where it is checked.

Make sure that you have set up your password in advance.

See also chapter "License Server" menu (Page 60), keyword "Create password for user access".

# Test system for the switch of the licensing technique 14

## 14.1 Preparation

### Document contents

Setting up a test system to change the licensing technique.

### Interaction between COMOSFlexLM and COMOS LS

COMOSFlexLM and COMOSLS can be used simultaneously in a network. However, they cannot be used simultaneously on the same server PC. For that reason two server PCs must be set up as license servers to set up a test system.

Each of the two server PCs requires its own dongle.

### Required components

For testing purposes, you need the following components from Siemens AG:

- COMOS update
- Setup: `CLS license server.zip`
- Microsoft .NET Framework (an independent setup for the clients)
- License file, starting April 1, 2008
- Temporary license file for testing
- Second dongle

### Communication

Prerequisite for the test clients and the new license server:

- HTTP protocol
- Exclusive free port

  The port must be available on the server exclusively for COMOS LS. For example, this excludes Microsoft Internet Information Services from being able to run on the same server PC.

**Naming conventions**

The following names are used in this document to increase the readability:

- `LS_old`: Machine name of the server PC on which the former COMOSFlexLM license server is running.

- `LS_new`: Machine name of the server PC on which the new COMOS LS license server is running.

- `Licdat_new`: New license file for production use (`ComosLicensexxx.xml`)

- `Licdat_temp`: Temporary license file for testing (`ComosLicensexxx.xml`)

- `Licdat_old`: Old license file for production use (`License.dat`)

## 14.2 Setting up the test system

The former license server is not changed.

1. An additional server PC is put into operation on the network and gets the machine name `LS_new`.

2. `LS_new` gets the second dongle.

3. `LS_new`: Unpack the "CLS license server.zip" file and run the "Setup.exe" file.

   1. Follow the instructions on the screen during the setup. The Monitor automatically determines the name of the PC on which the software is installed.

   2. If necessary, setup installs: Microsoft .NET Framework. The installation of .NET Framework requires a restart of the Server.

   3. If necessary, setup installs: Windows Services Enhancement 3.0 for .NET.

   4. Setup asks for a license file: Select `Licdat_temp`.

4. Since `Licdat_temp` contains its own test licenses, you can install a new and separate test client and hence do not need to "sacrifice" a regular workstation for this. However, a regular workstation can also be set up as a test client.

   1. Install / terminate COMOS

   2. Install the COMOS update on the test client.

   3. If required: Install .NET Framework on the test client.

   4. Test client: "<comos>\bin\" directory, start the "SetLicPatch.exe" file. Enter `LS_new` (the machine name of the test license server) in the `LicensePath` field.

5. `LS_new`: Start the test server.

   1. Windows menu: "Start > Programs > ComosLicenseServer": Start the COMOS LS Server Monitor of the new COMOS License Server ("ComosLicenseServerMonitor.exe" file).

   2. "License server" tab: Check whether the•license file was detected and is valid.

   3. Click the "Start license service" button.

6.  Start the test client.

    The production system continues to run normally during these preparations. Subsequently in the tests additional test clients can be installed or additional regular workstations can be brought in as test clients:

7.  Including workstations in the test: Each regular workstation can be included in the test at any time by running through steps 4.1 to 4.4.

# 14.3 Switching the productive system

## Updating the COMOS clients

Before the productive system can be changed over, all COMOS clients must be updated. See also chapter Setting up the test system (Page 108).

## Updating the license server of the productive system

Fundamentally speaking, you need to make the decision as to whether the former server PC `LS_old` is to continue to be used or whether to use the server PC `LS_new` instead.

Whatever you decide, the following always applies: For technical reasons, there will come a point when no licenses are available, with the result that all COMOS clients need to be logged off. The various changeover strategies are introduced here to explain this point.

## Retaining the former server PC (recommended)

If the former server PC `LS_old` is to be used, the new COMOS LS license server must be installed on the machine. The new license file `Licdat_new` is copied over. Afterwards, the old COMOSFlexLM license server is switched off. No licenses are supplied within that time, so all COMOS clients must be logged off. The new license server must be enabled. After that, the COMOS clients can log on again. The exact procedure is described in the "Maintenance" commissioning document.

Advantage: The regular workstations automatically find the new license server after the restart since the entries in the registry are still valid.

## Turning the test server into the new production server

The second dongle is available on the test server after the end of the test. However, this dongle is useless for productive operation because for security reasons it only functions with test license `Licdat_temp` , which is only valid for a limited period.

If the test server is to be changed into the productive server, then the productive dongle must be taken from the former server and plugged into the new server. No licenses are supplied within that time, so all COMOS clients must be logged off. Now, the new license file `Licdat_new` is copied over.

In addition, the new machine name for the license server must be entered for all COMOS clients by means of the "SetLicPath.exe" file.

After that, the COMOS clients can log on again.

# 14.4 Installing the license technique without a service pack

In justified cases (for example, if you want to set up a test system) it is possible to activate the license technique on the clients without installing a service pack.

The basis for this is the commissioning document "Maintenance" section "Changing the licensing technique". In this section you find the topic "Comos update through service pack". Instead of installing the service pack, carry out the following steps:

● The "ComosLS_Clientcomponents.rar" file will have been sent by our support team on request.

It is not allowed to use this archive or the content of this archive with the UpdateCenter. Instead, proceed as follows:

● Close COMOS client.

Unpack the rar file and distribute the individual files by following the instructions provided under "Component reference" (see below).

Hereafter, follow the instructions in the section "Changing the licensing technique". The next step is the same as described in "Changing the licensing technique":

● Run the "ComosLicenseLib_Register.cmd" file.

Hereafter follow the regular instructions in the section "Changing the licensing technique".

## Component reference

The following files must be installed on the client for COMOS LS if no SP is used:

### `<comos install path>\BIN` directory

```
Comos.CryptoLib.dll
Comos.CryptoLib.pdb
COMOS.LICENSECOMMON.DLL
COMOS.LICENSECOMMON.PDB
COMOS.LICENSEDONGLE.DLL
COMOS.LICENSEDONGLE.PDB
COMOS.LICENSELIB.DLL
COMOS.LICENSELIB.PDB
COMOS.LICENSEXML.DLL
COMOS.LICENSEXML.PDB
ComosLicenseLib_Register.cmd
ComosLicenseLib_Unregister.cmd
RegAsm_v2.0.50727.exe
RegAsm_v2.0.50727.exe.config
```

### <comos install path>\OCX folder

`comos.dll` from SP414 on

# VMWare with dongle

<div style="text-align: right; font-size: 3em;">15</div>

## 15.1 Aim

These instructions provide users of the "VMWare Workstation" software with the support they need to use a USB license dongle within a VMWare session.

COMOS can also be used in VMWare ESX Server; however, no USB dongles are supported by the server system. A network-based USB dongle server needs to be used for this. Following installation of the USB driver in the VM and configuration of the dongle port, the dongle can be used in an ESX server VM.

## 15.2 Procedure

### 15.2.1 Basic principle of the solution

#### Description

In a VMWare session (a virtual machine within a VMWare workstation), you actually have the same options as on a "real" PC. Part of that is the use of a USB dongle.

However, if you want to use the special USB dongle with the license in VMware, you need additional driver software from SafeNet, Inc.. This driver software cannot be started in VMWare.

#### Analysis

This problem occurs for every software which due to its architecture should only be started once. In this case the software is already being used by the machine operating system and therefore is not available for use by the virtual machine in the VMWare.

The solution to this problem therefore is to prohibit the dongle software from being used by the machine operation system, and therefore from being blocked.

## 15.2.2          Solution

1. Initially, the USB dongle should not be connected to an USB port.

2. The VMWare workstation is started.

3. The desired VMWare session is started in the VMWare workstation.

   Since at this time the USB license dongle is not connected to the PC, the needed driver software is not in use anywhere either.

4. Now the focus needs to be set to the VMWare workstation.

   If you have started a VMWare session, the focus is first set there. A possibility to clearly change the focus works as follows:

   – Click on the free are of the "normal" desktop. The focus is now set to the machine operating system.

   – Click on the outmost frame of the VMWare workstation:

5. Now insert the USB license dongle.

   After a few seconds, the USB symbol 🌐 should be displayed in the VMWare workstation on the far bottom right side:

   Check: The required SafeNet, Inc. software is now entered in the system settings of the session operating system:

   ● Activate the VMWare session in the VMWare workstation.

   ● From there, call the system properties in the Control Panel, "Hardware" tab, "Device Manager" button.

   ● The following entries must be available under the "USB Controller" node:

     – "SafeNet Inc. Hardlock Key"

     – "SafeNet Inc. USB Key"

## 15.2.3          Optional: Deactivating the SafeNet software selectively

If the USB license dongle is still not available in the VMWare session after the routine described above, you must specifically deactivate the SafeNet, Inc. software on the machine operating system.

You must not uninstall the software, however, as the drivers are still needed.

To deactivate the software on the machine operating system, proceed as follows:

1. Set the focus on the machine operating system (for example, by clicking in the empty "normal" area of the desktop).

2. Call the system properties in the Control Panel, "Hardware" tab, "Device Manager" button.

3. The following entries are available under the "USB Controller" node:

   – "SafeNet Inc. Hardlock Key"

   – "SafeNet Inc. USB Key"

   First, right-click "SafeNet Inc. Hardlock Key" and select "`Deactivate`" from the context menu.

   Then, right-click "SafeNet Inc. USB Key" and select "Deactivate" from the context menu.

   Now the solution steps described above can be followed again.

## 15.2.4 Definitions

- Machine operating system

  The operating system that starts initially when the PC is started. The machine operating system is the owner of the VMWare workstation.

- VMWare workstation

  The software that creates and administrates the VMWare sessions. The machine operating system only knows the VMWare workstation, not the VMWare sessions.

- VMWare session

  A virtual machine within the VMWare workstation. A VMWare session consists of a session operating system and session applications.

- Focus:

  The component on the PC that receives the current user entries.

# COMOS LS error codes

# 16

| ID | Message | Constant |
|---|---|---|
| 100 | The requested product will expire soon | WARNING_EXPIRATION |
| 110 | A license for the product was activated with the transferred cookie | INFO_PRODUCT_ALREADY_CHECKEDOUT_FOR_COOKIE |
| 111 | The user is assigned to the product (user->product->type) | INFO_PRODUCT_ASSIGNMENT_FOR_USER |
| 112 | The group is assigned to the product (group->product->type) | INFO_PRODUCT_ASSIGNMENT_FOR_GROUP |
| 113 | The user is neither directly nor indirectly assigned to the product by means of a group - Other assignments of the type INCLUDE exist for the product (user<->product) | INFO_PRODUCT_ASSIGNMENT |
| 114 | The user is assigned to the group (user->group) | INFO_GROUP_ASSIGNMENT_FOR_USER |
| 115 | Switched to license | INFO_PRODUCT_SWITCHED_TO_LICENSE |
| 130 | The user is assigned to the package (user->package) | INFO_PACKAGE_ASSIGNED_TO_USER |
| 300 | Found file | INFO_FILE_FOUND |
| 301 | Found sequence ID | INFO_SEQUENCEID_FOUND |
| 302 | Named User are not defined | INFO_NAMEDUSER_NOT_USED |
| 303 | No file found | INFO_FILE_NOT_FOUND |
| 304 | The following file was deleted | INFO_FILE_DELETED |
| 410 | The last heartbeat is older than 6 minutes - the licenses mapped to the corresponding cookie will be released soon | INFO_COOKIE_HEARTBEAT_DEAD_SOON |
| 440 | Trying to start the Comos License Server... | INFO_COMOSLICENSESERVER_STARTING |
| 441 | Comos License Server successfully started | INFO_COMOSLICENSESERVER_STARTED |
| 442 | The Fail Over-System was activated successfully | INFO_COMOSLICENSESERVER_FAILOVER_ACTIVATE |
| 443 | The Fail Over-System was started but not activated | INFO_COMOSLICENSESERVER_FAILOVER_TEST_OK |
| 444 | The runtime level of the Fail Over-System is | INFO_COMOSLICENSESERVER_FAILOVER_RUNTIMELEVEL |
| 445 | Trying to send the e-mail | INFO_COMOSLICENSESERVER_FAILOVER_EMAIL_SENDING |
| 446 | The e-mail was sent successfully | INFO_COMOSLICENSESERVER_FAILOVER_EMAIL_SENT |
| 460 | The number of stored users in the actual Named User File exceeds the maximum number of available licenses for the product | INFO_NAMEDUSER_ALREADY_EXISTS |
| 470 | The setting could not be found in the application's configuration file | INFO_APPLICATIONSETTING_MISSING |
| 480 | Some products have more assignments of type RESERVED than licenses available | INFO_LICENSEFILE_COUNT_LESS_RESERVED |
| 481 | The product has more assignments of type RESERVED than licenses available (product: available - reserved) | INFO_LICENSEFILE_COUNT_LESS_RESERVED_PRODUCT |

| ID | Message | Constant |
|---|---|---|
| 502 | The dongle area for the sequence ID contains invalid characters - The Dongle will be reset to 0 | `INFO_DONGLE_SEQUENCEID_WRONG_FORMAT` |
| 600 | IP of the Terminal Server session where Comos was started | `INFO_IP_COMOSCLIENT` |
| 601 | IP of the PC where the Terminal Server session was started | `INFO_IP_SESSION` |
| 800 | | `FORCE_SECOND_CHECKOUT_NAMEDUSER` |
| 801 | | `INFO_NO_EXTENDED_CHECKOUT` |
| 9990 | Please update your Comos RemoteLicenseService - The version you are using is out-of-date! | `CLM_CITRIX_UNKNOWN_COMMAND` |
| 9996 | | `CLM_CITRIX_TRANSFORM_FAILED` |
| 9997 | 9997 - connection failed | `CLM_CITRIX_CONNECTION_FAILED` |
| 9998 | 9998 - invalid data returned | `CLM_CITRIX_INVALID_DATA` |
| 9999 | 9999 - crypt strings are different | `CLM_CITRIX_CRYPT_MISMATCH` |
| | | |
| -100 | The product does not exist | `ERROR_PRODUCT_NOT_FOUND` |
| -101 | The requested product has partially expired | `ERROR_PRODUCT_PARTIAL_EXPIRED` |
| -102 | The requested product has completely expired | `ERROR_PRODUCT_COMPLETE_EXPIRED` |
| -103 | No free license exists for the requested product | `ERROR_PRODUCT_NO_FREE_LICENSE_FOUND` |
| -110 | The user has already checked out the product | `ERROR_PRODUCT_NAMEDUSER_ALREADY_CHECKEDOUT_LICENSE` |
| -111 | The maximum number of Named Users has been reached – no more users can be stored | `ERROR_PRODUCT_NAMEDUSER_MAXIMUM_USER_STORED` |
| -112 | The maximum number of to be released Named User licenses has been reached | `ERROR_PRODUCT_NAMEDUSER_MAXIMUM_CHECKOUTS` |
| -113 | The additonal product for another check out of a 'NAMED_USER' license is not available or all associated licenses are checked out. | `ERROR_PRODUCT_NAMEDUSER_SPECIAL_LICENSE_NOT_FOUND` |
| -114 | The user does not exist as a Named User and the AutoAdd functionality is disabled | `ERROR_PRODUCT_NAMEDUSER_AUTOADD_DISABLED` |
| -115 | The user does not exist as Named User | `ERROR_PRODUCT_NAMEDUSER_NOT_ASSIGNED` |
| -120 | The cookie was not created | `ERROR_COOKIE_NOT_FOUND` |
| -130 | The requested package does not exist | `ERROR_PACKAGE_NOT_FOUND` |
| -131 | The user is assigned to more than one package | `ERROR_USER_MORE_PACKAGES` |
| -132 | The user is not assigned to any package | `ERROR_USER_NO_PACKAGE` |
| -133 | Packages cannot be defined within local license files | `ERROR_PACKAGE_LOCAL_LICENSE` |
| -200 | The requested product was not checked out | `ERROR_PRODUCT_NOT_CHECKEDOUT` |
| -201 | The requested product was not checked out using the passed cookie | `ERROR_PRODUCT_NOT_MAPPED_TO_COOKIE` |
| -202 | The passed cookie was not created | `ERROR_COOKIE_NOT_FOUND` |
| -203 | The product does not exist | `ERROR_PRODUCT_NOT_FOUND` |
| -300 | The path does not exist | `ERROR_PATH_NOT_EXIST` |
| -301 | File not found | `ERROR_FILE_NOT_FOUND` |
| -310 | The Named User file could not be found | `ERROR_NAMEDUSER_FILE_NOT_FOUND` |
| -311 | No user entries exist in the Named User file | `ERROR_NAMEDUSER_USERS_NOT_FOUND` |

| ID | Message | Constant |
|---|---|---|
| -312 | The sequence in the Named User file does not match the stored sequence in the dongle | `ERROR_NAMEDUSER_SEQUENCEID_MISMATCH` |
| -320 | No license files found in path | `ERROR_LICENSEFILE_NOT_FOUND` |
| -321 | No products were found in the license file | `ERROR_LICENSEFILE_PRODUCTS_NOT_FOUND` |
| -322 | Wrong format for version | `ERROR_LICENSEFILE_VERSION_WRONG_FORMAT` |
| -323 | Duplicate sequence ID found | `ERROR_LICENSEFILE_SEQUENCEID_DUPLICATE_FOUND` |
| -324 | Invalid products found for package | `ERROR_LICENSEFILE_PACKAGES_INVALID_PRODUCTS` |
| -325 | Module has dependencies, but is not declared as a product | `ERROR_LICENSEFILE_DEPENDENCIES_INVALID_PRODUCT` |
| -326 | Mismatches found concerning the dependencies of products | `ERROR_LICENSEFILE_DEPENDENCIES_MISMATCH` |
| -327 | Invalid hardware type found | `ERROR_LICENSEFILE_HARDWARETYPE_MISMATCH` |
| -328 | Different license types were found in the license files for the product | `ERROR_LICENSEFILE_LICENSETYPE_DIFFERENT` |
| -329 | Not allowed to use packages with licenses of type NAMED_USER | `ERROR_LICENSEFILE_PACKAGE_WITH_NAMEDUSER` |
| -340 | The file checkpoint.dat was not found | `ERROR_CHECKPOINT_FILE_NOT_FOUND` |
| -341 | It's not allowed to use local license files at a Terminal Server | `ERROR_LOCALLICENSE_TERMINALSERVER` |
| -350 | The subnets file does not contain any valid subnets | `ERROR_SUBNETS_FILE_EMPTY` |
| -360 | No package found | `ERROR_PACKAGE_NOT_FOUND` |
| -361 | The assignments for the packages could not be saved | `ERROR_PACKAGE_SAVE_ASSIGNMENTS` |
| -362 | The assignments for the packages could not be read | `ERROR_PACKAGE_READ_ASSIGNMENTS` |
| -400 | The product does not exist | `ERROR_PRODUCT_NOT_FOUND` |
| -401 | Invalid type for product found | `ERROR_PRODUCT_INVALID_TYPE` |
| -402 | The requested package does not exist | `ERROR_PACKAGE_NOT_FOUND` |
| -410 | The passed cookie was not created | `ERROR_COOKIE_NOT_FOUND` |
| -411 | The IP address of the request does not match the IP address stored on the cookie | `ERROR_COOKIES_MISMATCH` |
| -420 | The passed version is too old | `ERROR_VERSION_TO_OLD` |
| -421 | The passed key is invalid | `ERROR_KEY_UNDEFINED` |
| -422 | Wrong license token set for the license requested | `ERROR_LICENSETOKEN_MISMATCH` |
| -430 | Product was set as dependent on itself | `ERROR_DEPENDENCY_ITSELF` |
| -431 | Invalid dependent type found | `ERROR_DEPENDENCY_INVALID_TYPE` |
| -432 | A dependency for the module is already stored | `ERROR_DEPENDENCY_ALREADY_STORED` |
| -433 | The required dependency does not exist as a product | `ERROR_DEPENDENCY_REQUIRED_NO_PRODUCT` |
| -437 | The 'Fail Over'-System is not deactivated | `ERROR_COMOSLICENSESERVER_FAILOVER_NOT_DEACTIVATED` |
| -438 | The reset of the 'Fail Over'-System was not initialized | `ERROR_COMOSLICENSESERVER_FAILOVER_NOT_INIT` |
| -440 | The last Checkpoint is newer than the actual Date&Time | `ERROR_COMOSLICENSESERVER_CHECKPOINT` |
| -441 | The Comos License Server was shut down due to an inconsistency | `ERROR_COMOSLICENSESERVER_SHUTDOWN` |

| ID | Message | Constant |
|---|---|---|
| -442 | The Fail Over-System is deactivated | `ERROR_COMOSLICENSESERVER_FAILOVER_DEACTIVATED` |
| -443 | The maximum runtime of the Fail Over-System is reached | `ERROR_COMOSLICENSESERVER_FAILOVER_ELAPSED` |
| -444 | The time saved at the dongle is greater than the actual time spent | `ERROR_COMOSLICENSESERVER_FAILOVER_ILLEGAL` |
| -445 | The Fail Over-System could not be activated | `ERROR_COMOSLICENSESERVER_FAILOVER_ACTIVATE` |
| -446 | The Comos LS master system is running | `ERROR_COMOSLICENSESERVER_FAILOVER_MASTER_RUNNING` |
| -447 | The runtime level of the Fail Over-System could not be changed | `ERROR_COMOSLICENSESERVER_FAILOVER_STANDBY` |
| -448 | Mismatch between the dongle IDs of Fail Over-System and the master system | `ERROR_COMOSLICENSESERVER_FAILOVER_MISMATCH_DONGLE` |
| -449 | The e-mail could not be sent | `ERROR_COMOSLICENSESERVER_FAILOVER_EMAIL` |
| -450 | The transmitted handshake deviates from the returned handshake | `ERROR_HANDSHAKE_MISMATCH` |
| -451 | The login to the license server was canceled | `ERROR_LOGINCLS_CANCELED` |
| -460 | The number of stored users in the actual Named User File exceeds the maximum number of available licenses for the product | `ERROR_NAMEDUSER_NOT_ENOUGH_LICENSES` |
| -461 | The change to a previous Named User file was not initialized | `ERROR_NAMEDUSER_FILECHANGE_NOT_INIT` |
| -462 | The change to a Named User file with a higher sequence ID than the actual ID is not allowed | `ERROR_NAMEDUSER_SEQUENCEID_TO_HIGH` |
| -463 | Please check the answer code because the sequence ID could not be extracted | `ERROR_NAMEDUSER_SEQUENCEID_WRONG_FORMAT` |
| -464 | The sequence within the ticket file differs from the actual sequence | `ERROR_NAMEDUSER_WRONG_SEQUENCEID` |
| -470 | The setting could not be found in the application's configuration file | `ERROR_APPLICATIONSETTING_MISSING` |
| -480 | actual number of check outs > maximum number in the reloaded license files | `ERROR_LICENSEFILE_RELOAD_MISMATCH_USAGECOUNT` |
| -481 | has check outs but is missing as product in the reloaded license files | `ERROR_LICENSEFILE_RELOAD_MISSING_PRODUCT` |
| -482 | has check outs as Named User, but is not Named User in the reloaded license files | `ERROR_LICENSEFILE_RELOAD_MISMATCH_NAMEDUSER` |
| -483 | actual number of Named Users > maximum license count in the reloaded license files | `ERROR_LICENSEFILE_RELOAD_MISMATCH_NAMEDUSERCOUNT` |
| -490 | A wrong password was entered | `ERROR_PASSWORD_MISMATCH` |
| -491 | No password has yet been defined | `ERROR_PASSWORD_FILENOTFOUND` |
| -492 | The signature of the password file is invalid | `ERROR_PASSWORD_FILECHANGED` |
| -500 | Login to dongle failed | `ERROR_DONGLE_LOGIN` |
| -501 | Reading dongle buffer failed | `ERROR_DONGLE_BUFFER_READ` |
| -502 | Stored sequence ID has the wrong format | `ERROR_DONGLE_SEQUENCEID_WRONG_FORMAT` |
| -503 | Saving to dongle buffer failed | `ERROR_DONGLE_BUFFER_SAVE` |
| -504 | Mismatch serial number | `ERROR_DONGLE_SERIALNO_MISMATCH` |
| -505 | Mismatch sequence ID | `ERROR_DONGLE_SEQUENCEID_MISMATCH` |
| -506 | Mismatch random number | `ERROR_DONGLE_RANDOM_MISMATCH` |

| ID | Message | Constant |
|---|---|---|
| -507 | Illegal dongle found | `ERROR_DONGLE_MISMATCH` |
| -508 | Dongle check failed after maximum retries | `ERROR_DONGLE_MAX_TRIES` |
| -550 | Could not retrieve volume serial number from drive c | `ERROR_HARDDISK_NO_DRIVE_C_FOUND` |
| -551 | Mismatch volume serial number | `ERROR_HARDDISK_MISMATCH` |
| -600 | No unique cookie could be created | `ERROR_COOKIE` |
| -700 | No valid signature was found | `ERROR_SIGNATURE_NODE` |
| -701 | The signature is invalid – the file was changed | `ERROR_SIGNATURE_MASMATCH` |
| -800 | Invalid handling found in the license file | `INVALID_FOUND` |
| -801 | The special license handling is not defined in the license file | `NOT_FOUND_IN_LICENSEFILE` |
| -802 | The passed conditions do not match those required for the extended activation | `EXTENDED_CHECKOUT_MISMATCH_CONDITIONS` |
| -1001 | | `SERVER_ISCHECKEDOUT` |
| -1002 | | `SERVER_CHECKOUT` |
| -1003 | | `SERVER_CHECKIN` |
| -1004 | | `SERVER_HEARTBEAT` |
| -1005 | | `SERVER_CREATECOOKIE` |
| -1006 | | `SERVER_NAMEDUSER_READ` |
| -1007 | | `SERVER_NAMEDUSER_WRITE` |
| -1009 | | `SERVER_GETPRODUCTSTATUS` |
| -1010 | | `SERVER_GETCHECKOUTSTATUS` |
| -1011 | | `SERVER_GETSERVERINFOS` |
| -1012 | | `SERVER_GETSERVERDONGLEID` |
| -1013 | | `SERVER_RELOADLICENSEFILE` |
| -1014 | | `SERVER_READCHECKPOINT` |
| -1015 | | `SERVER_PREPARERESULTXML` |
| -1016 | | `SERVER_GETNAMEDUSERSTATUS` |
| -1017 | | `SERVER_ADDTICKET` |
| -1018 | | `SERVER_DELETEOVERWRITABLE` |
| -1019 | | `SERVER_AUTOADD` |
| -1020 | | `SERVER_CHANGENAMEDUSERFILE` |
| -1021 | | `SERVER_CHANGENAMEDUSERFILEINIT` |
| -1022 | | `SERVER_ADDNAMEDUSER` |
| -1023 | | `SERVER_REMOVENAMEDUSERS` |
| -1024 | | `SERVER_ISAVAILABLE` |
| -1025 | | `SERVER_RUNTIMECHECK` |
| -1026 | | `SERVER_SAVELICENSEGROUPS` |
| -1027 | | `SERVER_GETUSERSTATUS` |
| -1028 | | `SERVER_SAVELICENSEUSERS` |
| -1029 | | `SERVER_SAVEPRODUCTASSIGNMENTS` |
| -1030 | | `SERVER_CREATEWORKLOAD` |
| -1031 | | `SERVER_CREATESNAPSHOT` |

| ID | Message | Constant |
|---|---|---|
| -1032 | | `SERVER_SAVENAMEDUSERS` |
| -1033 | | `SERVER_PASSWORDFORAPPLICATIONS` |
| -1034 | | `SERVER_FAILOVER_STANDBY` |
| -1035 | | `SERVER_FAILOVER_SAVESETTINGS` |
| -1036 | | `SERVER_SAVEPACKAGEASSIGNMENTS` |
| -1037 | | `SERVER_CHECKOUTPACKAGE` |
| -1038 | | `SERVER_GETVALUEFORKEY` |
| -1039 | | `SERVER_FAILOVER_TESTMODE` |
| -1100 | | `LIB_INIT` |
| -1101 | | `LIB_CREATECOOKIE` |
| -1102 | | `LIB_CHECKOUTMODULE` |
| -1103 | | `LIB_CHECKOUTPACKAGE` |
| -1104 | | `LIB_CHECKIN` |
| -1105 | | `LIB_ISCHECKEDOUT` |
| -1106 | | `LIB_USELOCALDONGLE` |
| -1107 | | `LIB_CHECKLOCALDONGLE` |
| -1108 | | `LIB_GETLICENSESERVER` |
| -1109 | | `LIB_ISIPINTERNAL` |
| -1110 | | `LIB_CHECKUSERPASSWORD` |
| -1200 | | `DONGLE_MONITOR_CHECK` |
| -1201 | | `DONGLE_NEXTSEQUENCEID` |
| -1202 | | `DONGLE_CHECK` |
| -1203 | | `DONGLE_INIT` |
| -1204 | | `DONGLE_RESET` |
| -1205 | | `DONGLE_READ` |
| -1206 | | `DONGLE_CHANGESEQUENCEID` |
| -1207 | | `DONGLE_WRITEVALUE` |
| -1300 | The COMOS License Server does not reply or returned an unexpected error | `LICSERVER_NOT_AVAILABLE` |
| -1400 | <exception message> (hearbeat at the comos.dll) | `CLM_HEARTBEAT_EXCEPTION` |
| -2000 | The internal license job could not be started | `CLM_ERROR_STARTUP` |
| -2001 | The return code contains invalid characters | `CLM_ERROR_CONVERSION_FAILURE` |
| -2002 | The user login could not be retrieved | `CLM_ERROR_EMPTY_USERNAME` |
| -2003 | Named User Licenses will not be supported in connection with 'runas'. Please start COMOS without 'runas' | `CLM_ERROR_STARTED_WITH_RUNAS` |
| -2004 | The query returned a BAD SYSTEM DATE, because the latest login in the database is newer than the expiration date of the license | `CLM_ERROR_BADSYSDATE` |
| -2005 | Please ensure that 'Microsoft .NET Framework 2.0' is installed on the user PC! | `CLM_ERROR_NO_DOTNET_FEATURES` |
| -2006 | The COMOS client license component could not be registered! | `CLM_ERROR_REGISTER_LICENSELIB` |
| -2007 | Heartbeat - error initializing XML | `CLM_ERROR_XML_INIT` |

| ID | Message | Constant |
|---|---|---|
| -2008 | Heartbeat : error starting the thread | `CLM_ERROR_HEARTBEAT_START` |
| -3102 | The license could not be obtained. Use a local license file. Please check the local settings<br><br>Do you want to connect to a license server. Please check the following values in the registry<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\LastUsedLicenseServer<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\ForceLicenseServer | `LM_BADHANDSHAKE_CHECKOUT` |
| -3103 | The client was forced to connect to FLEXlm, but the request failed.<br><br>Please check the following values in the registry<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\ForceLicenseServer | `LM_BADHANDSHAKE_FORCE_FLEXLM` |
| -3104 | The client was connected by default to the COMOS license server, but the request failed.<br><br>Please check the following values in the registry<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\ForceLicenseServer | `LM_BADHANDSHAKE_FORCE_CLM` |
| -3105 | The client tried to connect to FLEXlm and COMOS LS, but both requests failed. Use a local license file. Please check the local settings<br><br>Do you want to connect to a license server. Please check the following values in the registry<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\LastUsedLicenseServer<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\ForceLicenseServer | `LM_BADHANDSHAKE_BOTH_TESTED` |
| -3201 | A wrong version of the license server was detected. Please check the following values in the registry<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\LastUsedLicenseServer<br><br>HKEY_CURRENT_USER\\SOFTWARE\\INNOTEC\\ Comos\\ForceLicenseServer | `LM_ERROR_WRONG_VERSION` |
| -3302 | An unexpected error occurred. Please try again or check the 'Debug Monitor' for more details | `LM_EXCEPTION` |
| -5000 | Please make sure that you use a license server or a local license! | `CLM_ERROR_UNKNOWN` |