

FlexNet License Administration Guide for TECHNIA Applications

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1 Introduction

FlexNet Publisher is a license management tool from Flexera Software. The following TECHNIA applications use FlexNet license management:

- CAVA for V5 Release 1.24.2 and later
- CAVA for V6 Release 1.3.1 and later
- Lite3D applications
- VDAFS Processor Release 1.11.1 and later
- xCompare V5/V5 1.8.1 and later
- xCompare V5/JT 1.7.x and later
- XFileV5 3.1.x and later

What's in this document

This document describes the basic functions for setup and administration of a FlexNet license server, and the configuration of applications using FlexNet-based licenses.

More information

Details about FlexNet Publisher can be found in the FlexNet Publisher Administration Guide, available on the TECHNIA website:

https://transcat-plm.com/pub/tcsoft/flexnet/fnp_LicAdmin_11_14.pdf

Nodelock license / Single workstation

A nodelock license is valid on a single workstation. No license server is required.

↗ Chapter 2, Using nodelock licenses

Concurrent licenses

Concurrent licenses are available to all client computers in a network. Only a limited number of client computers can use licenses at the same time. A license server is required.

↗ Chapter 3, Using concurrent licenses

2 Using nodelock licenses

A nodelock license is valid on a single computer and bound to the computer hardware.

2.1.1 Identify the host ID

You need to provide the host ID of the computer when requesting a license file. Use one of the following methods to identify the host ID.

Option 1: ipconfig (Windows)

(1) Open the command prompt (cmd.exe) and enter the command:

```
ipconfig /all
```

The output looks something like this:

```
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . :
    Description . . . . . : Linksys LNE100TX
    Physical Address. . . . . : 00-05-6E-1A-42-C3
    DHCP Enabled. . . . . : No
    IP Address. . . . . : 192.168.xxx.xxx
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1
    DNS Servers . . . . . : 128.xxx.xxx.xxx
                             128.xxx.xxx.xxx
```

The Physical Address of the main network adapter is the host ID of the computer. In the above example, the host ID is 00-05-6E-1A-42-C3.

(2) Copy the host ID and keep it until you have requested the license file.

TIP: To copy text from the command prompt, right-click the window and choose “Mark” from the context menu. Use the mouse to mark the required text, then press [ENTER] to copy the marked text to the clipboard.

Option 2: Imutil (all supported operating systems)

(1) Download the Imutil archive from the TECHNIA FTP server:

`ftp://ftp.transcat-plm.com/pub/tcsoft/flexnet/` (from here, navigate to the directory for the required operating system and software version)

(2) Extract the Imutil archive.

(3) Open the command prompt (cmd.exe) and enter the command:

```
Imutil lmhostid
```

The output looks something like this:

```
lmutil - Copyright (c) 1989-2013 Flexera Software LLC. All Rights Reserved.  
The FlexNet host ID of this machine is "00056E1A42C3"
```

In the above example, the host ID is 00056E1A42C3.

(4) Make a note of the host ID. You will need it to request the license file.

TIP: To copy text from the command prompt, right-click the window and choose *Mark* from the context menu. Use the mouse to mark the required text, then press [ENTER] to copy the text to the clipboard.

2.1.2 Request a license

Go to the license request form on the TECHNIA website:

<https://www.technia.com/support/license-request>

Fill in the details and submit your request. TECHNIA will send the license file to the given email address.

2.2 Configure the application

2.2.1 Set the license search path

The license search path can be defined in an environment variable or in the Windows registry. If the license search path is defined both in the registry and in the environment variable, the environment variable has precedence. The registry key is used only if the path in the environment variable does not point to a valid license.

Option 1: Set the environment variable

- (1) In Windows, choose *Start > Control panel > System > Advanced > Environment variables*.
- (2) Set the TRANSCAT_LICENSE_FILE environment variable:

```
TRANSCAT_LICENSE_FILE=<licpath>
```

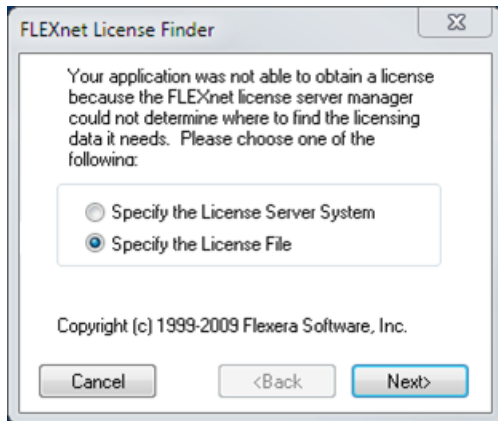
Where <licpath> is the directory path where one or more license files are located. Example:

```
TRANSCAT_LICENSE_FILE=C:\Licenses
```

Option 2: Set the license search path at application startup

When starting the application without a valid license search path, the *FLEXnet License Finder* dialog is shown, where you can specify the license search path. The license search path will be stored in the Windows registry.

Choose the *Specify the License File* option and click *Next*.



Enter the license search path. Note that if you click *Browse* to choose a license file, you can select only one license file. A directory path can only be entered manually.

The license search path is stored in the registry. Registry path with example value:

```
[HKEY_CURRENT_USER\Software\FLEXlm License Manager]
"TRANSCAT_LICENSE_FILE"="C:\Licenses"
```

2.2.2 Choose FlexNet instead of LUM

Some applications from TECHNIA support both FlexNet and LUM license management, specifically:

- CAVA for V5 1.24.x to 1.27.x
- CAVA for V6 1.3.1 to 1.5.x
- VDAFS Processor 1.11.x
- XFileV5 3.1.x to 3.2.x
- xCompare V5/JT 1.7.x
- xCompare V5/V5 1.8.x to 1.11.x

To use these applications with a FlexNet license, set the respective environment variables.

(1) In Windows, choose *Start > Control panel > System > Advanced > Environment variables*

(2) Set the environment variable:

Application name	Environment variable name	Value
CAVA	TCACAVA_LIC	FLEXNET
VDAFS Processor	TCAVDAFS_LIC	FLEXNET
XFileV5	XFILEV5_LIC	FLEXNET
xCompare	TCACMP_LIC	FLEXNET

3 Using concurrent licenses

3.1 Overview of server installations

Compatibility

FlexNet Publisher license server 11.14.1.2 or later is required to use current TECHNIA applications with FlexNet-based concurrent licenses.

If an earlier release of the `lmadmin` service is installed, you must install an update. The required license server components are available for download from the TECHNIA website.

↗ 3.2 Download license server components

The latest FlexNet Publisher license server is compatible with all previous releases of TECHNIA applications.

Server installation on a physical or virtual machine

The latest FlexNet Publisher license server can be installed on a physical or virtual machine. Note the special requirements for virtual machines:

↗ 3.3 License server on a virtual machine

Choose a license server manager

FlexNet Publisher license server consists of two components, license server manager and vendor daemon. Two license server managers are available, `lmadmin` and `lmgrd`. Choose either `lmadmin` or `lmgrd`. Do not use the same vendor daemon with `lmgrd` and `lmadmin` in parallel.

The following table can help you choose between `lmadmin` and `lmgrd`.

<code>lmgrd</code>	<code>lmadmin</code>
<ul style="list-style-type: none"> • Command-line interface. • On Windows, you can use <code>lmtools</code> as graphical frontend for <code>lmgrd</code>. • Requires interactive or remote logon to the server • Separate <code>lmgrd</code> instance for each vendor daemon • We recommend <code>lmgrd</code> when using multiple vendor daemons. 	<ul style="list-style-type: none"> • Web-based interface; access over HTTP in a web browser • Functions available in the web-based interface: display license details; stop license server; stop vendor daemon; reread updated license files; set report log file name • Other functions, including server start, are available through the <code>lmadmin</code> command-line interface. The <code>lmadmin</code> command-line interface requires interactive or remote logon to the server.

While a single `lmadmin` instance can manage multiple vendor daemons, we do not recommend this because of potential version conflicts between `lmadmin` and vendor daemons.

Three-server redundancy

You have the option to run three redundant license servers in a “triad” configuration. The three servers operate in conjunction with each other. If one license server goes down, licenses can still be granted if the other two servers are running.

↗ 3.9 Three-Server Redundancy

3.2 Download license server components

All required license server components are available for download on the TECHNIA website:

<https://www.technia.com/support/software-downloads> (choose *FlexNet Publisher* as product and the required platform)

You can also get the files via FTP:

<ftp://ftp.transcat-plm.com/pub/tcsoft/flexnet/> (from here, navigate to the directory for the required operating system and software version)

Server software components are platform-dependent. Make sure to use the correct files.

File name	Description
TRANSCAT or TRANSCAT.exe	Vendor daemon. If the vendor daemon is not yet available for a certain platform, please contact TECHNIA.
lmadmin-*-11_14_1_2.exe	Installer for the <code>lmadmin</code> license server manager. Not required when using <code>lmgrd</code> .
lmgrd	<code>lmgrd</code> license server manager with command-line interface. Not required when using <code>lmadmin</code> .
lmutil	Command-line utility for license management with <code>lmgrd</code> , and for borrowing licenses. See the FlexNet Publisher License Administration Guide for details.
lmtools	Graphical interface for the <code>lmgrd</code> license server manager. <code>lmtools</code> is available on Microsoft Windows only. Not required when using <code>lmadmin</code> .
tclicflex	License function test tool for TECHNIA licenses. Not required.

File name	Description
installanchorservice.exe	FlexNet anchor service installer.
FNP_Act_Installer.dll	Required when installing the FlexNet license server on a virtual machine.

3.3 License server on a virtual machine

A FlexNet server can be installed on a physical or virtual machine.

Supported host operating systems

The following host operating systems for virtual machines are supported:

- Microsoft Windows 8 or later
- Microsoft Windows Server 2012 or later
- Microsoft Hyper-V Server 2012 or later

For further information, see this document from Microsoft:

[https://msdn.microsoft.com/en-us/library/jj643357\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/jj643357(v=vs.85).aspx)

License binding in a virtual machine

Licenses are bound to the Generation ID (GenID) and universally unique ID (UUID) of the virtual machine.

The GenID does not persist after the following changes:

- Import, copy, or clone the virtual machine
- Execute a snapshot
- Recover from backup
- Failover (running a duplicate system) in a disaster recovery environment

In these cases, contact TECHNIA and ask for a license transfer.

3.4 Obtain concurrent licenses

Concurrent licenses are bound to the respective server.

When requesting a license file for a physical machine, you need to provide the host ID of the workstation. For a virtual machine, you need to provide the GenID and UUID of the virtual machine.

3.4.1 Identify the host ID of a physical machine

Use one of the following methods to identify the host ID.

Option 1: ipconfig (Windows)

(1) Open the command prompt (cmd.exe) and enter the command:

```
ipconfig /all
```

The output looks something like this:

```
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . :
    Description . . . . . : Linksys LNE100TX
    Physical Address. . . . . : 00-05-6E-1A-42-C3
    DHCP Enabled. . . . . : No
    IP Address. . . . . : 192.168.xxx.xxx
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1
    DNS Servers . . . . . : 128.xxx.xxx.xxx
                              128.xxx.xxx.xxx
```

The host ID is the Physical Address of the main network adapter. In the above example, the host ID is 00-05-6E-1A-42-C3.

(2) Make a note of the host ID. You will need it to request the license file.

TIP: To copy text from the command prompt, right-click the window and choose “Mark” from the context menu. Use the mouse to mark the required text, then press [ENTER] to copy the text to the clipboard.

Option 2: lmutil (all supported operating systems: AIX, HP-UX, Linux, Solaris, Windows)

(1) Download the lmutil archive from the TECHNIA FTP server:

<ftp://ftp.transcat-plm.com/pub/tcsoft/flexnet/> (from here, navigate to the directory for the required operating system and software version)

(2) Extract the lmutil archive.

(3) Open the command prompt (cmd.exe) and enter the command:

```
lmutil lmhostid
```

The output looks something like this:

```
lmutil - Copyright (c) 1989-2013 Flexera Software LLC. All Rights Reserved.
The FlexNet host ID of this machine is "00056E1A42C3"
```

In the above example, the host ID is 00056E1A42C3.

(4) Make a note of the host ID. You will need it to request the license file.

TIP: To copy text from the command prompt, right-click the window and choose “Mark” from the context menu. Use the mouse to mark the required text, then press [ENTER] to copy the text to the clipboard.

Next step:

3.4.3 Request a license

3.4.2 Identify the GenID and UUID of a virtual machine

(1) Copy these files to the virtual machine:

- `lmutil.exe`
- `installanchorservice.exe`
- `FNPAct_Installer.dll`

(2) Open the command prompt (`cmd.exe`) and enter the command to install the license anchor service:

```
installanchorservice.exe TECHNIA any
```

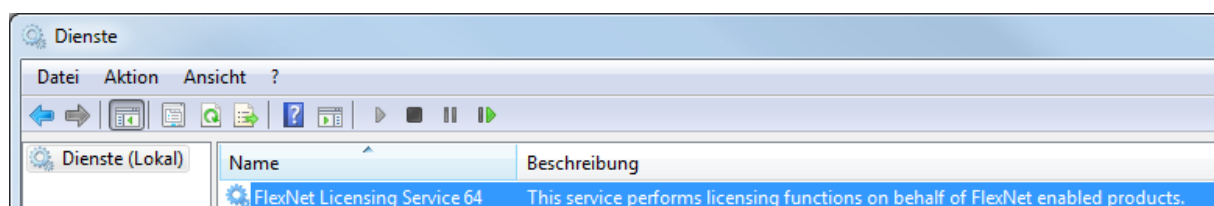
The output looks something like this:

```
Success code 2003: There was no service on the system so the new one was installed.
```

or

```
Success code 2001: The currently installed service is older than the new service so it has been upgraded.
```

The installed service also appears as “FlexNet Licensing Service” in the list of local services on the computer.



(3) At the command prompt, enter the command to read out the Generation ID (GenID) of the virtual machine:

```
lmutil.exe lmhostid -ptype VM -genid
```

The output should look something like this:

```
lmutil - Copyright (c) 1989-2017 Flexera Software LLC. All Rights Reserved.  
The FlexNet host ID of this machine is "VM_GENID=34d819f19cd864eb:552bb757c053b841"
```

In the example, the GenID of the virtual machine is
`VM_GENID=34d819f19cd864eb:552bb757c053b841`.

(4) Make a note of the GenID. You will need it to request the license file.

TIP: To copy text from the command prompt, right-click the window and choose “Mark” from the context menu. Use the mouse to mark the required text, then press [ENTER] to copy the text to the clipboard.

(5) At the command prompt, enter the command to read out the UUID of the virtual machine:

```
lmutil.exe lmhostid -ptype VM -uuid
```

The output should look something like this:

```
lmutil - Copyright (c) 1989-2017 Flexera Software LLC. All Rights Reserved.  
The FlexNet host ID of this machine is "VMW_UUID=ADCF4D56-1847-DB87-379B-B5BF4D2C53FC"
```

In the above example, the GenID of the virtual machine is VM_UUID=AF964D56-46E1-3D8C-EC52-DC1A9E6C4BA6.

(6) Copy the UUID and keep it until you have requested the license file.

Next step:

3.4.3 Request a license

3.4.3 Request a license

Go to the license request form on the TECHNIA website:

<https://www.technia.com/support/license-request>

Fill in the details and submit your request. TECHNIA will send the license file to the given email address.

Next step:

3.5 Edit the concurrent license file

3.5 Edit the concurrent license file

When you have received the license file from TECHNIA, you need to add some information to the file.

(1) Open the license file in a text editor.

The content of the license file looks something like this:

```
SERVER localhost 00056E1A42C3  
VENDOR TRANSCAT  
FEATURE TC-CAVA-V5-A11 TRANSCAT 1.0 1-jan-2015 10 BORROW=720 \  
  START=22-jan-2014 SIGN="0200 FBFF 52EC BA16 44B9 04CD 159E \  
    F2ED F9CE 4892 B1C6 C9E2 9626 4A7F E32C 9C03 408E 24ED 550E \  
  4123 C4ED"
```

Host name and port

(2) In the SERVER line, replace localhost with the actual hostname of the license server.

Format of the server line:

```
SERVER <hostname> <hostid> [<port>]
```

Example with host name my_server:

```
SERVER my_server 00056E1A42C3
```

You can read out the host name as follows:

- Windows: Open the command prompt (cmd.exe) and enter the command `ipconfig /all`.
- UNIX: In the terminal, run the command 'hostname' or 'uname -n'

Do not change or remove the host ID in the SERVER line, as the license file would become invalid.

(3) To define a TCP/IP port for the license server manager, insert a port number after the host ID. You can use any unused port number in the range 0 to 65535. On UNIX, choose a port above 1024, since those below 1024 are privileged port numbers. If no TCP/IP port number is specified, one of the default ports in the range 27000 to 27009 is used.

In an existing FlexNet installation, use the same port number for all licenses.

Example with port 1234:

```
SERVER my_server 00056E1A42C3 12345
```

Location of the vendor daemon

(4) The TRANSCAT vendor daemon should be placed in the same directory as lmadmin or lmgrd. If you need to place the vendor daemon in a different location, specify its full path in the VENDOR line of the license file. The file path must be set in quotation marks. Example:

```
VENDOR TRANSCAT "C:\ProgramData\TECHNIA\LicenseMgr\TRANSCAT.exe"
```

(5) Save and close the license file.

Next steps:

Use the license server manager to install the license.

3.6 Manage concurrent licenses with lmgrd

3.7 Manage concurrent licenses with lmadmin

3.6 Manage concurrent licenses with Imgrd

This chapter describes how to install and use Imgrd. For Imadmin, see chapter 3.7.

3.6.1 Preparations

Place TRANSCAT.exe and Imgrd.exe in a common directory.

The path must not exceed 255 characters. We recommend placing the files in a subdirectory of the program-data directory (C:\ProgramData). Otherwise you need to ensure that the Windows local system account has read/write permissions in the directory.

Example path:

```
C:\ProgramData\TECHNIA\LicenseMgr
```

If the TRANSCAT.exe vendor daemon and Imgrd.exe are in different directories, specify the full path to the vendor client in the license file. See 3.5, Edit the concurrent license file.

Next step:

3.6.2 Configure the Imgrd license server using Imtools (Windows only)

3.6.4 Configure and start Imgrd (any operating system)

3.6.2 Configure the Imgrd license server using Imtools (Windows only)

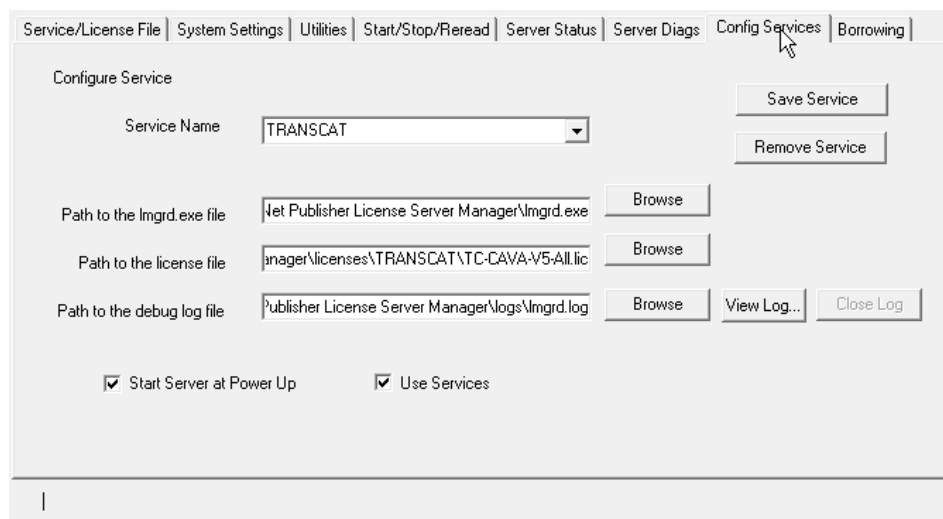
To configure the Imgrd license server manager on Microsoft Windows, follow these steps:

(1) Place the product license file in a directory of your choice. The path must not exceed 255 characters.

When using a virtual machine, place the GENID.lic file in the same directory.

(2) Run Imtools.exe.

(3) Click the *Config Services* tab.



(4) Fill in these fields:

- *Service Name*: Enter a service name of your choice. We recommend the name TRANSCAT to match the vendor daemon.
- *Path to the lmgrd.exe file*: Full path to lmgrd.exe. Example:

C:\ProgramData\TECHNIA\LicenseMgr\lmgrd.exe

- *Path to the license file*: Full path to the directory where the license files are located. The path must not exceed 255 characters. Example:

C:\Licenses

- *Path to the debug log file*: Full path and name of the log file. The path must not exceed 255 characters. The information in this file can help you resolve problems during server startup. We recommend setting a path inside the program-data directory. Example:

C:\ProgramData\TECHNIA\LicenseMgr\lmgrd.log

When setting a path outside the program-data directory, make sure the lmgrd service has sufficient read/write permissions.

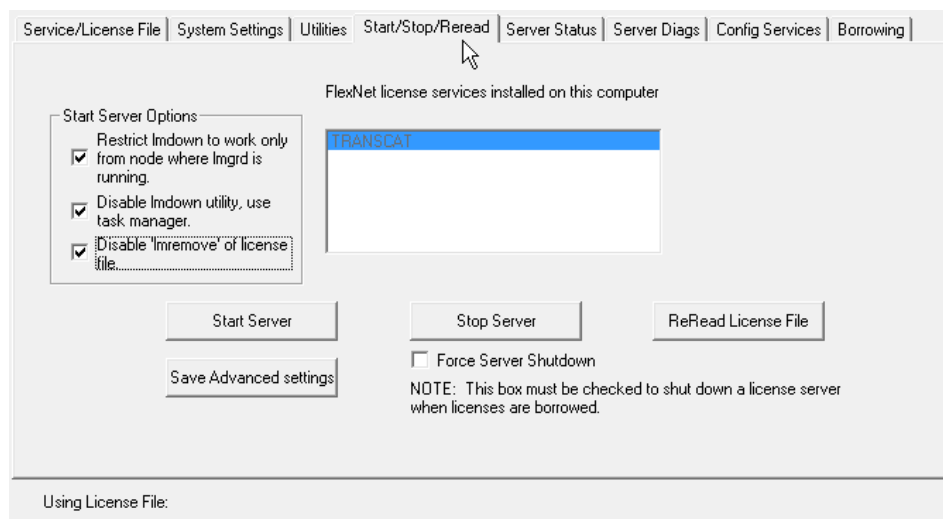
- (5)** Select the options *Use services* and *Start Server at Power Up* to start the license server automatically at computer startup.

- (6)** Click *Save Service*.

You can now quit lmtools.

3.6.3 Start lmgrd server using lmtools (Windows only)

- (1)** Run lmtools.exe.
- (2)** Click the *Start/Stop/Reread* tab.



(3) Verify that the list contains the license service (default name TRANSCAT).

If the license service is not on the list, click the *Config Services* tab, select the license service, then return to the *Start/Stop/Reread* tab.

(4) You can disable license manager control from other locations.

To do this, click *Edit Advanced Settings*. Then select these options:

- *Restrict lmdown to work only from node where lmgrd is running.*
- *Disable lmdown utility, use task manager.*
- *Disable lmremove of license file.*

(5) Click *Start Server*.

(6) Verify that the server is running. On the *Server Status* tab, click *Perform Status Enquiry*. The license server and vendor daemon should be marked as “UP”.

```
License server status: 27000@localhost
License file(s) on localhost: C:\Flexlm\lmgrd\TC-CAVA-V5-All.lic:

localhost: license server UP (MASTER) v11.14

Vendor daemon status (on localhost):

TRANSCAT: UP v11.14
Feature usage info:

Users of TC-CAVA-V5-All: (Total of 10 licenses issued; Total of 0 licenses in use)
```

3.6.4 Configure and start lmgrd (any operating system)

Complete documentation of the `lmgrd` command can be found in the FlexNet Publisher License Administration Guide, “`lmgrd` – License Server Manager”.

Below is a basic description of the `lmgrd` command with recommended options.

Start lmgrd (any supported operating system)

At the command prompt, enter the command:

```
lmgrd -c <license_file> -l <log_file>
```

<license_file> is the full path to the license file

<log_file> is the full path to the log file. lmgrd will write debugging information to this file. This information can help you to resolve problems with the license server.

Consider including these parameters in the command:

Parameter	Description
-2 -p	UNIX: Restrict usage of lmdown, lmreread and lmremove to the root user and members of the lmadm user group Windows: Disable lmdown for all users
-local	UNIX: Restrict usage of lmdown and lmreread to the machine where lmgrd is running.
-x lmremove	Disable lmremove for all users

UNIX example:

```
lmgrd /etc/tcllic/license.dat -l /var/transcat/tcllic.log -2 -p -local  
-x lmremove
```

Windows example:

```
lmgrd c:\license.txt -l C:\ProgramData\TECHNIA\LicenseMgr\tcllic.log -2 -p -local  
-x lmremove
```

3.6.5 Install licenses on the server

- (1) Place the license files in the licenses directory.
- (2) Run lmtools.exe.
- (3) On the *Start/Stop/Reread* tab, click *Reread License File*.
- (4) Verify that the license files have been read:

On the *Config Services* tab, click *View Log*. At the end of the log, you should find the message “Finished rereading”:

```
10:05:11 [TRANSCAT] Rereading options file...  
10:05:11 [TRANSCAT] ... Finished rereading
```

You can now quit lmtools.

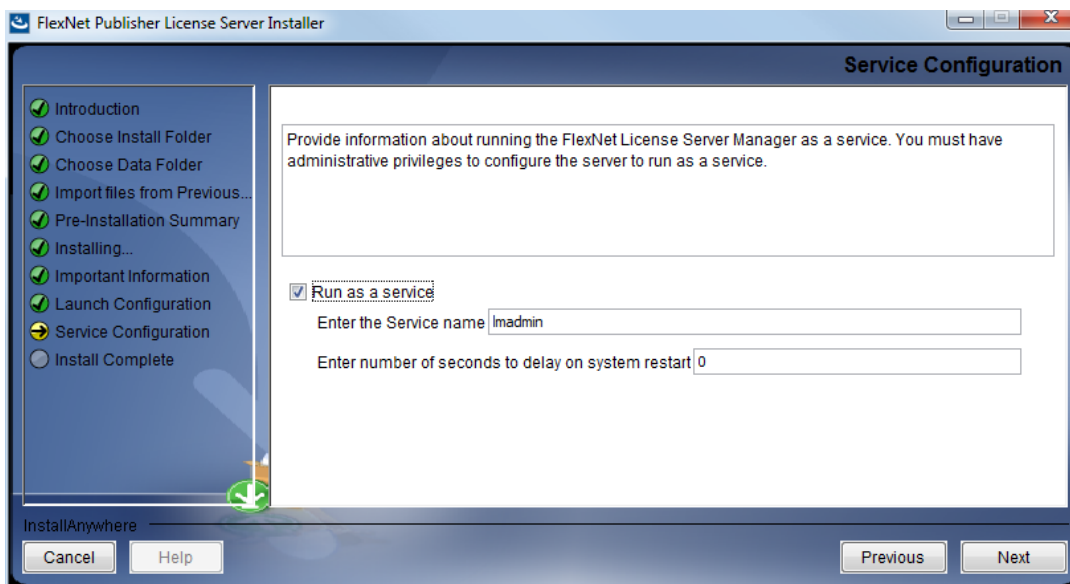
3.7 Manage concurrent licenses with lmadmin

This chapter describes how to install and use lmadmin. For lmgrd, see chapter 3.6.

3.7.1 Install lmadmin

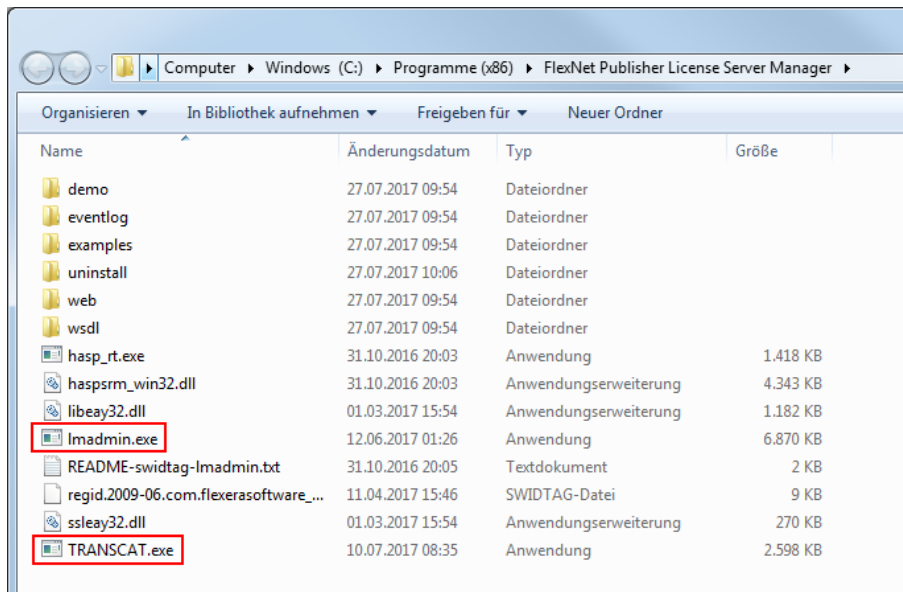
Installation

- (1) Run the lmadmin installer with administrator privileges. Administrator privileges are required to install lmadmin as a service.
- (2) Proceed through the installation process by clicking *Next*. Use default settings if not specified otherwise.
- (3) We recommend installing lmadmin as a service. Select the “Run as a service” option.



- (4) Proceed through the remaining steps of the installation process.

- (5) Place the TRANSCAT.exe vendor daemon in the lmadmin installation directory.
On a virtual machine, place the GENID.lic file in the same directory.



- (6) Start the lmadmin service manually:

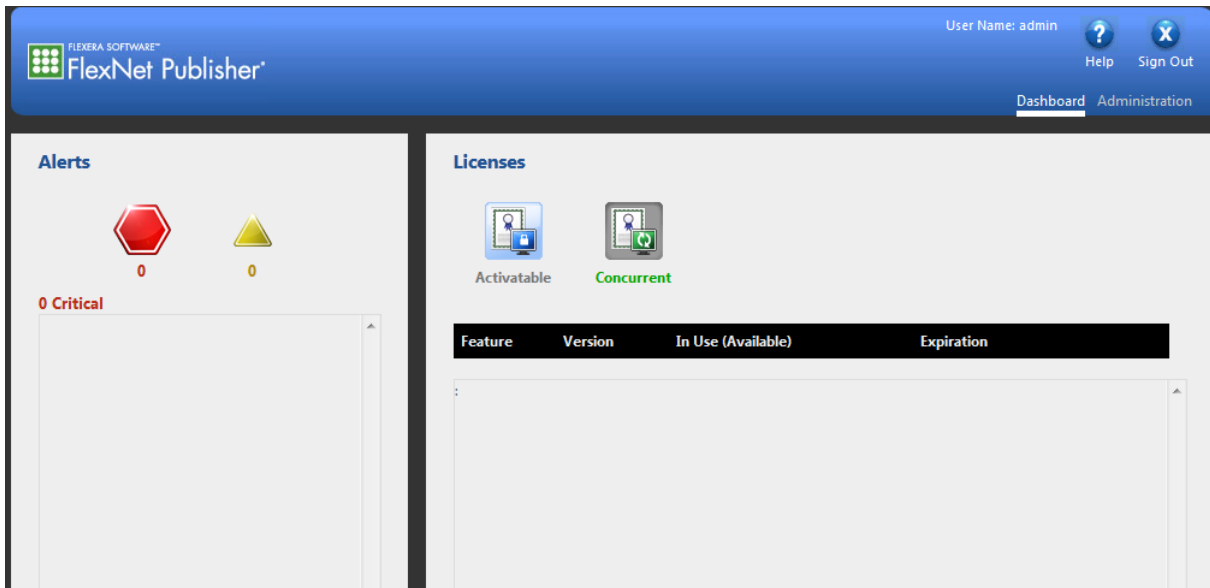
Press [Windows]+R, then enter the command `services.msc`. The Windows Services dialog opens. Look up the lmadmin service in the list, and start it manually.

3.7.2 Install licenses on the server

- (1) Open the web browser and enter the URL:

```
http://my_server:8090
```

Where `my_server` is the license server name and `8090` is the HTTP port number specified during installation.



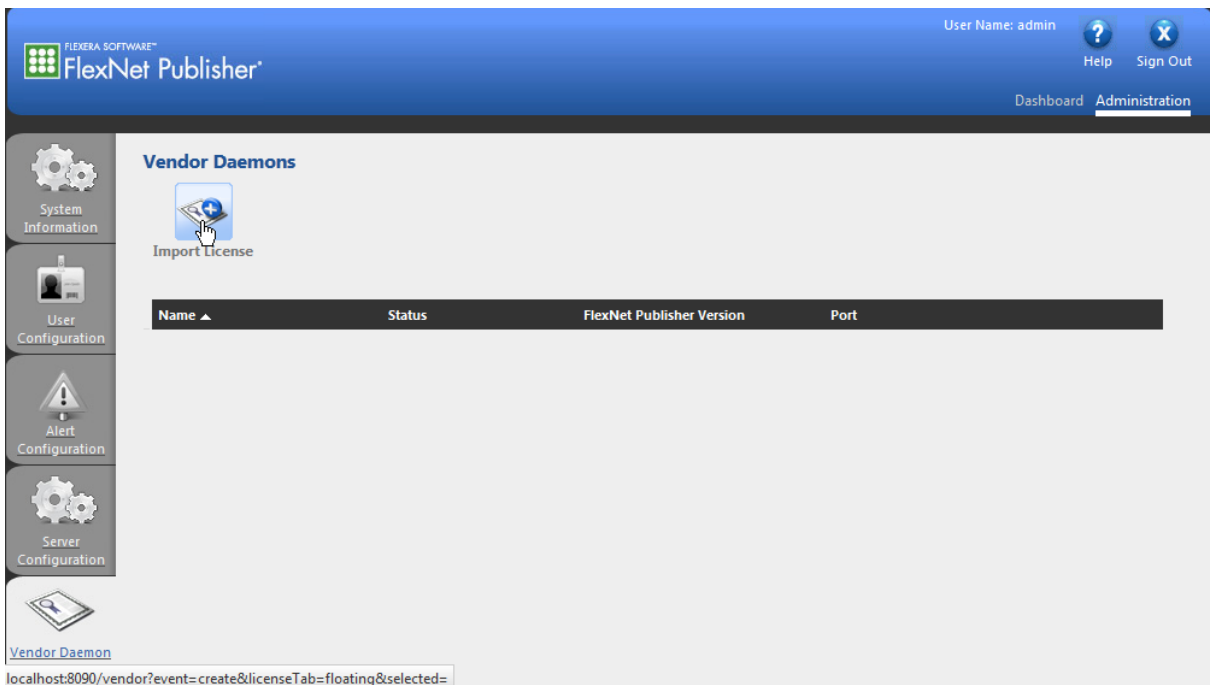
(2) Click the *Administration* tab.

(3) Log in to the license server manager. The default user name and password are “admin”.

When you are logged in, we recommend changing the password for the “admin” account. Keep the password safe.

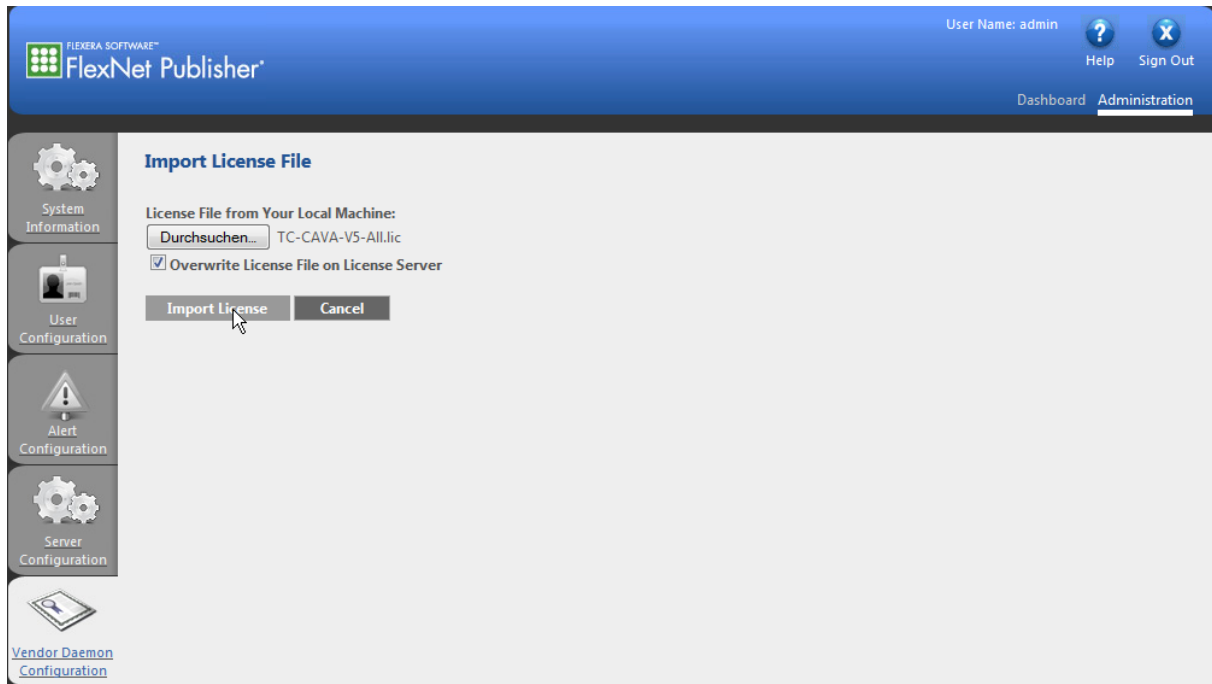
(4) Click *Vendor Daemon Configuration*.

(5) Click *Import License*.

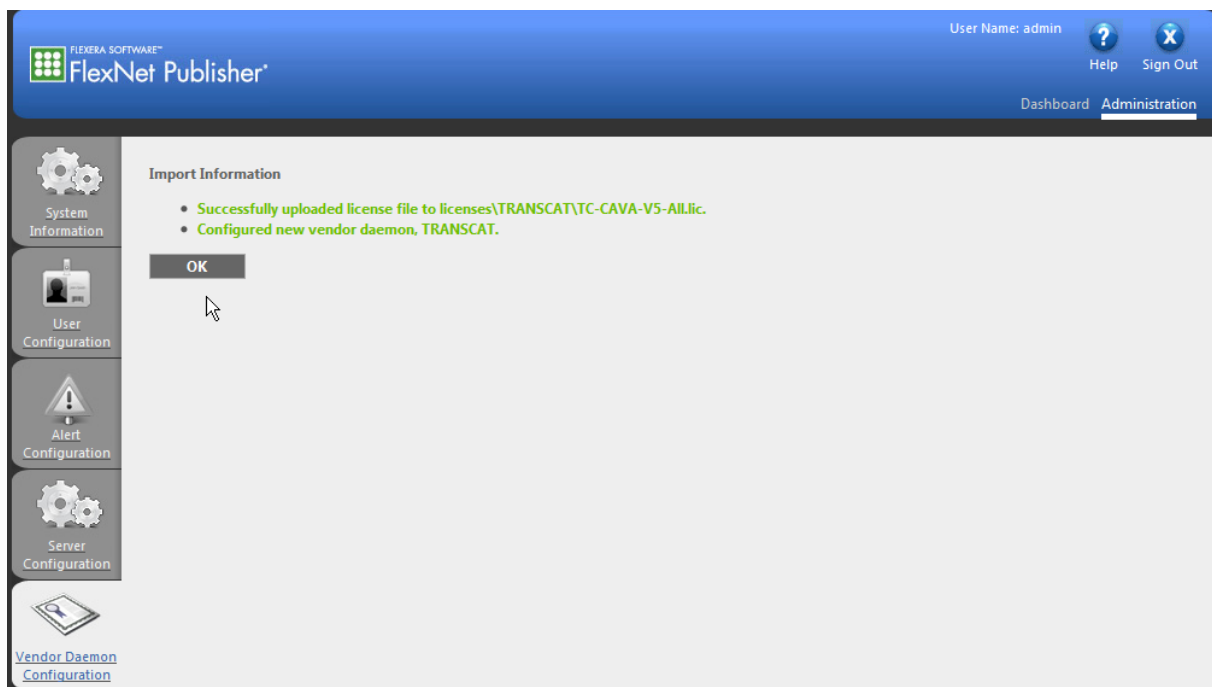


(6) Click *Browse* to select the license file you want to add.

To update an existing license, select the *Overwrite File on License Server* check box.



(7) Click *Import License*.



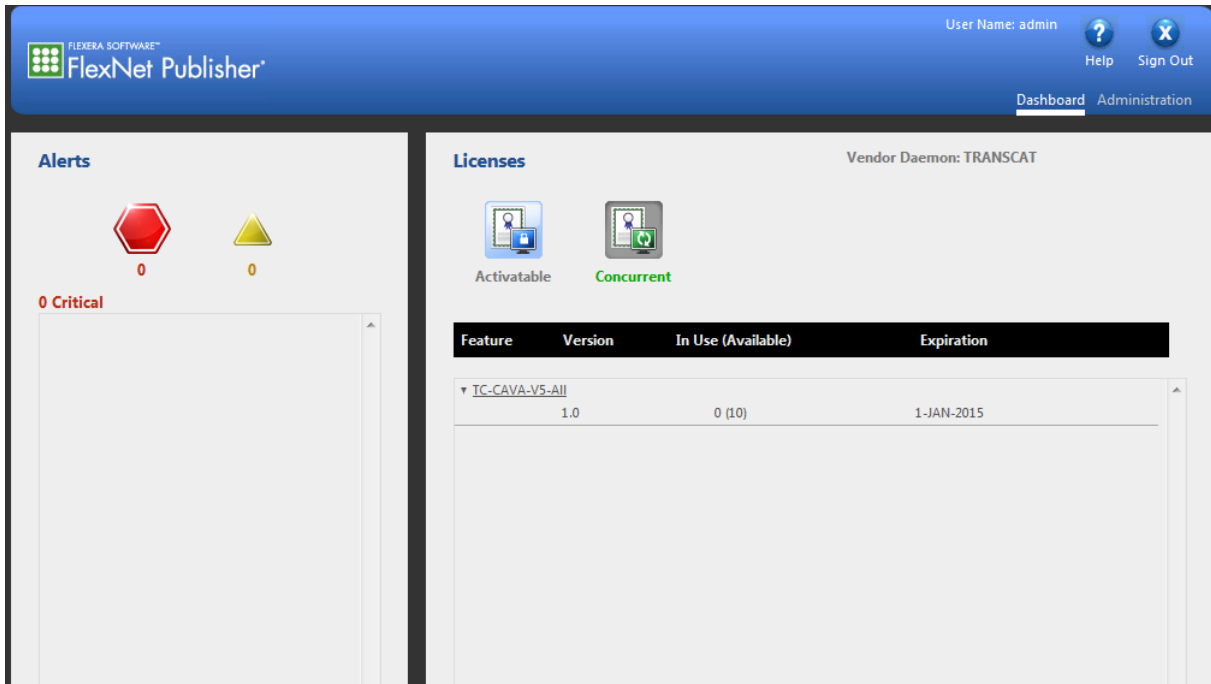
(8) Click *OK* to confirm.

(9) Stop the vendor daemon: Choose *Vendor Daemon Configuration > Administer > Stop*.

(10) Restart the vendor daemon: Choose *Vendor Daemon Configuration > Administer > Start*.

(11) To verify the installed license, click the *Dashboard* tab.

You should see an entry for the product, along with the number of available licenses, and the number of licenses in use.



3.7.3 Optional configuration

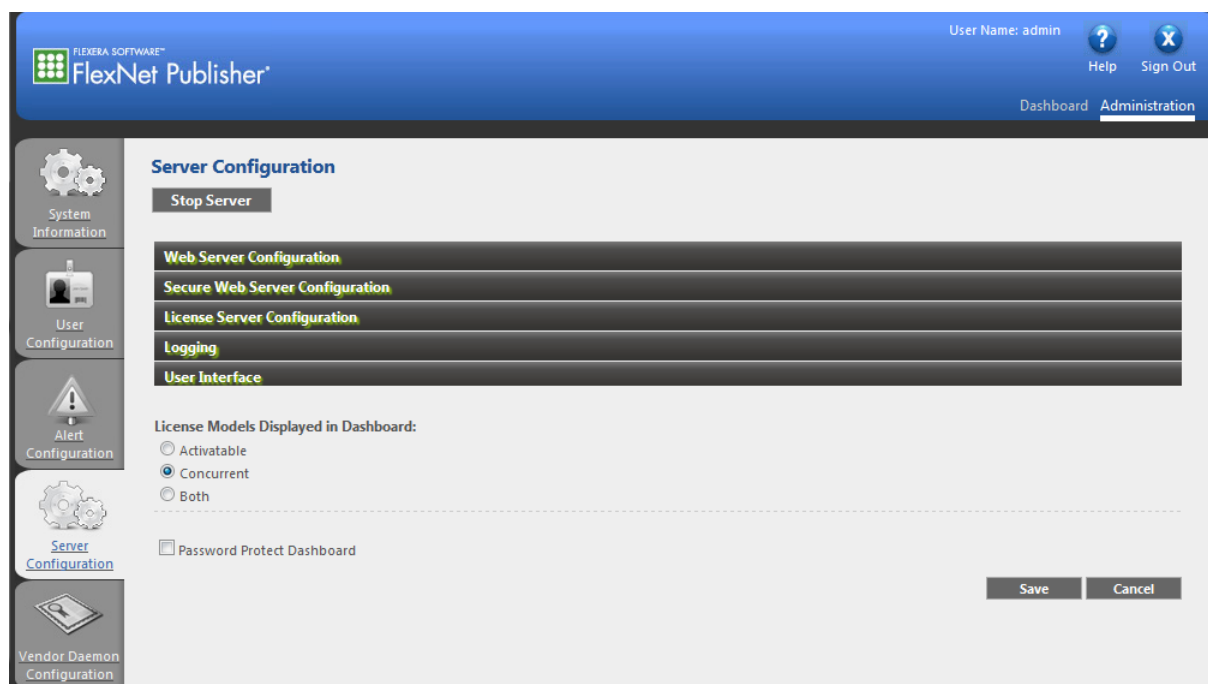
The dashboard can be modified to show only the number of concurrent licenses. To do this, follow these steps:

(1) Open the web browser and enter the URL:

```
http://server_name:8090
```

Where `server_name` is the license server name, and `8090` is the HTTP port number specified during installation.

- (2) Log in to the server manager as `admin`.
- (3) Click the *Administration* tab, then click *User interface*.
- (4) Choose the *Concurrent* option.



(5) Click *Save*.

3.7.4 Start, stop, and configure the vendor daemon

If you need to start, stop, or configure the vendor daemon, proceed as follows:

(1) Open the web browser and enter the URL:

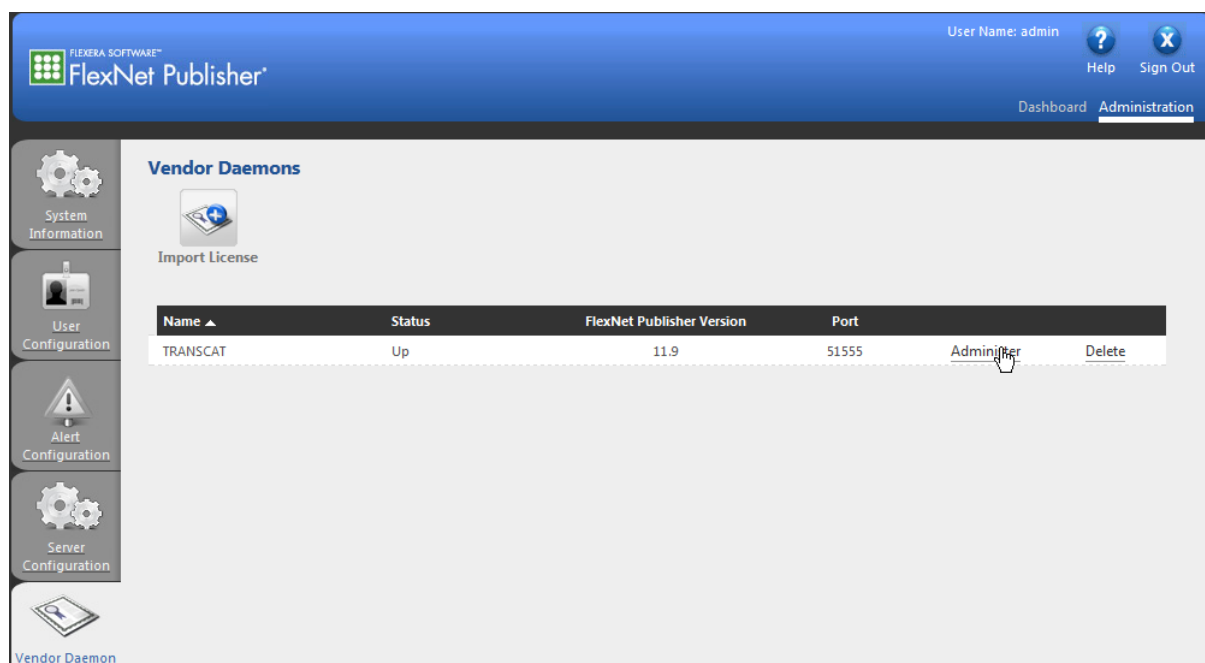
```
http://server_name:8090
```

Where `server_name` is the license server name, and `8090` is the HTTP port number specified during installation.

(2) Log in to the server manager as `admin`.

(3) Click *Vendor Daemon*.

(4) Click *Administer* for the TRANSCAT vendor daemon.



3.8 Configure applications

3.8.1 Set the license search path

The license search path can be defined in an environment variable or in the Windows registry. If the license search path is defined both in the registry and in the environment variable, the environment variable has precedence. The registry key is used only if the path in the environment variable does not point to a valid license.

Option 1: Set the environment variable

- (1) In Windows, choose *Start > Control panel > System > Advanced > Environment variables*
- (2) Set the TRANSCAT_LICENSE_FILE environment variable to the server:

```
TRANSCAT_LICENSE_FILE=<port>@<server>
```

Where <port> is the port number, and <server> is the name of the license server.

When using a concurrent license with three-server redundancy, set the variable to the three servers:

```
TRANSCAT_LICENSE_FILE=<port>@<server>,<port2>@<server2>,<port3>@<server3>
```

Examples:

Network port and name of the FlexNet license server:

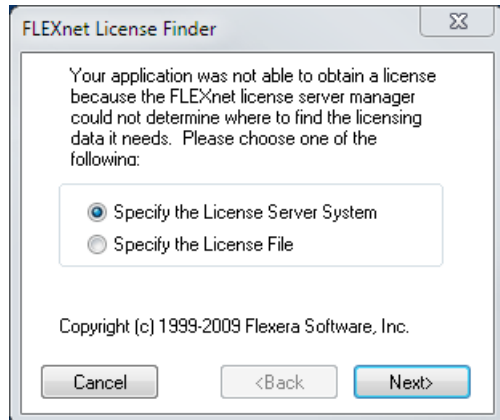
```
TRANSCAT_LICENSE_FILE=27000@my_server
```

Network port and name of three redundant FlexNet license servers:

```
TRANSCAT_LICENSE_FILE=27000@my_server,27000@my_server2,27001@my_server3
```

Option 2: Set the license search path at application startup

When starting the application without a valid license search path, the *FLEXnet License Finder* dialog is shown, where you can specify the license search path. The license search path will be stored in the Windows registry.



The license search path is stored in the registry. Registry path with example value:

```
[HKEY_CURRENT_USER\Software\FLEXlm License Manager]
"TRANSCAT_LICENSE_FILE"="1234@my_server"
```

3.8.2 Choose FlexNet instead of LUM

Some applications from TECHNIA support both FlexNet and LUM license management, specifically:

- CAVA for V5 1.24.x to 1.27.x
- CAVA for V6 1.3.1 to 1.5.x
- VDAFS Processor 1.11.x
- XFileV5 3.1.x
- xCompare V5/JT 1.7.x
- xCompare V5/V5 1.8.x to 1.11.x

To use these applications with a FlexNet license, set the respective environment variables.

(1) In Windows, choose *Start > Control panel > System > Advanced > Environment variables*

(2) Set the environment variable:

Application name	Environment variable name	Value
CAVA	TCACAVA_LIC	FLEXNET
VDAFS Processor	TCAVDAFS_LIC	FLEXNET
XFileV5	XFILEV5_LIC	FLEXNET
xCompare	TCACMP_LIC	FLEXNET

3.9 Three-Server Redundancy

You have the option to run three redundant license servers in a “triad” configuration. The three servers operate in conjunction with each other. If one license server goes down, licenses can still be granted if the other two servers are running.

Request licenses for three redundant servers

When requesting licenses to be installed on three redundant servers, choose the *Cluster (three server redundancy)* option in the license request online form. You need to provide the host ID for each of the three servers.

Client configuration

On the client, define the license servers using an environment variable or registry key.

- Option 1: Set the TRANSCAT_LICENSE_FILE variable to a list of port numbers and names of the three servers.

```
TRANSCAT_LICENSE_FILE=port@server,port2@server2,port3@server3
```

- Option 2: Set the following registry key to a list of port numbers and names of the three servers.

```
[HKEY_CURRENT_USER\Software\FLEXlm License Manager]
"TRANSCAT_LICENSE_FILE"="1234@server,1234@server2,4321@server3"
```

If the license search path is defined both in the registry and in the environment variable, the environment variable has precedence. The registry key is used only if the path in the environment variable does not point to a valid license.

For further details, see the FlexNet Publisher License Administration Guide.

3.10 License borrowing

To use a TECHNIA application on a computer while disconnected from the license server, you can borrow a concurrent license from the server.

A license can be borrowed if the `VENDOR` line of the license file contains the `BORROW` keyword.

While a license is borrowed, the license server keeps the license checked out, and the borrowed license remains available on the computer. You can specify the expiry date on which the borrowed license will expire on the client computer and become available again on the license server.

It is possible to return borrowed licenses before their expiry date. This requires that the computer is connected to the license server again.

No clock synchronization is required between the license server and the computer running the TECHNIA application.

Prerequisites

To borrow a license, you need the `lmutil` command-line utility. Download `lmutil` from the TECHNIA website. See chapter 3.2 Download license server components.

Borrow a license

To borrow a license, follow these steps:

(1) Use one of the following methods to set the expiry date for the borrowed licenses:

- Enter the command at the command prompt:

```
lmutil lmborrow TRANSCAT dd-mmm-yyyy [hh:mm]
```

Where `dd-mmm-yyyy` is date on which the borrowed license will expire. Optionally, you can specify a time (`hh:mm`) on this date. If you specify no time, the license will expire when the specified date has passed.

Example for a license that will expire on 20 March 2014 at 13:00:

```
lmutil lmborrow TRANSCAT 20-mar-2014 13:00
```

- Alternatively, set the `LM_BORROW` environment variable.

```
LM_BORROW=dd-mm-yyyy:TRANSCAT:dd-mmm-yyyy
```

Example: To borrow licenses from 17 March 2014 to 20 March 2014, define the variable like this:

```
LM_BORROW=17-mar-2014:TRANSCAT:20-mar-2014
```

(2) Run the TECHNIA application, and activate all product features you want to borrow a license for.

(3) To prevent further licenses from being borrowed, open the command prompt (`cmd.exe`) and enter the command:

```
lmutil lmborrow -clear
```

(4) You can now disconnect from the license server and run the applications using the borrowed license until the expiration date.

Return a license early

To return borrowed licenses before they expire, follow these steps:

- (5) Connect the client computer to the license server.
- (6) To determine which licenses are currently borrowed, open a command window and enter the command:

```
lmutil lmborrow -status
```

The returned information looks like this:

```
Vendor      Feature      Expiration
-----
TRANSCAT    TC-CAVA-V5-A11  15-Mar-14 23:59
TRANSCAT    TC-qcompareV5   22-Mar-14 23:59
```

- (7) To return one of the borrowed licenses, enter the command

```
lmutil lmborrow -return <feature>
```

Where <feature> is the name of the borrowed license as shown in the list of borrowed licenses.

Example:

```
lmutil lmborrow -return TC-CAVA-V5-A11
```

4 Troubleshooting

4.1 General troubleshooting hints

To identify and solve license problems, we recommend that you to proceed like this:

- Check if the required license is available.
 - 4.2 Check license availability using `tlclicflex`
- Check the license server status.
 - 4.3 Check `lmgrd` license server status using `lmtools` (Windows only)
 - 4.4 Check the `lmadmin` license server status
- Check the vendor daemon log file for messages. The default location of the log file is:

```
C:\ProgramData\FLEXlm\lmadmin\TRANSCAT.log
```

- If you cannot check out a license although the license server is running, check the network firewall settings.
 - 4.5 Check network firewall settings
- The local service account requires writes write permissions to the `server.xml` configuration file.
- When trying to start `lmgrd.exe`, the following message might be shown in `lmtools`:
“VD is starting, please check vendor daemon's status in debug log”.
In this case, set the required permissions for the log directory. See Solution 3 (chapter 4.3).

4.2 Check license availability using `tclicflex`

Overview

If the application cannot find a valid FlexNet license, you can analyze the problem using the `tclicflex.exe` utility.

This utility simulates the license mechanism of TECHNIA applications and allows checking out FlexNet licenses, and releasing them again. For this test, you do not need to start the application itself.

Getting `tclicflex`

Download the `tclicflex.exe` utility from the TECHNIA website to your computer:

<https://www.technia.com/support/downloads> (choose *FlexNet Publisher* as product and the required platform)

You can also get this file via FTP:

<ftp://ftp.transcat-plm.com/pub/tcsoft/flexnet/> (from here, navigate to the directory for the required operating system and software version)

Usage

(1) Identify the feature name and version number, either in the license file or in the list of feature names.

In the license file: Open the license file in a text editor. Search for the line beginning with "FEATURE". Example:

```
FEATURE TC-xcompareV5-V5 TRANSCAT 1.99 1-jan-2015 10 BORROW=720
```

In the example, the feature name is "TC-xcompareV5-V5", the maximum version number is "1.99".

In the list of feature names: You can find a list of products and feature names in chapter 5. For the version number, use the number before the point of the current product version.

Note down feature name and version.

- (2) Open a command window (`cmd.exe`).
- (3) Change to the directory containing `tclicflex.exe`.
- (4) Enter the command:

```
tclicflex <featurename> <featureversion>
```

Where `<featurename>` is the feature name and `<featureversion>` is the version number as identified in step 1. Example:

```
tclicflex TC-xcompareV5-V5 1
```

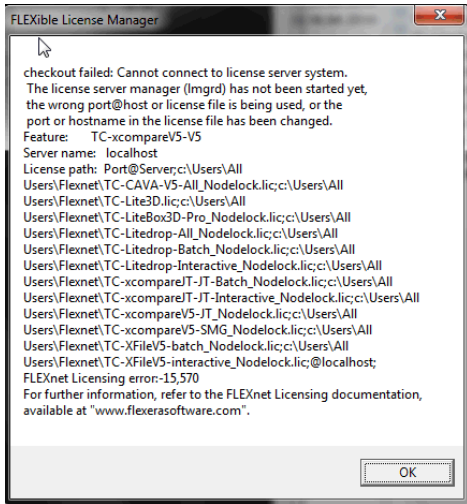
(5) If the license has been found and checked out successfully, `tclicflex` returns a message like this:

Version 11.14.1.2

TC-xcompareV5-V5 checked out...press return to exit...

The license is currently checked out by tclicflex. Press [ENTER] to release the license.

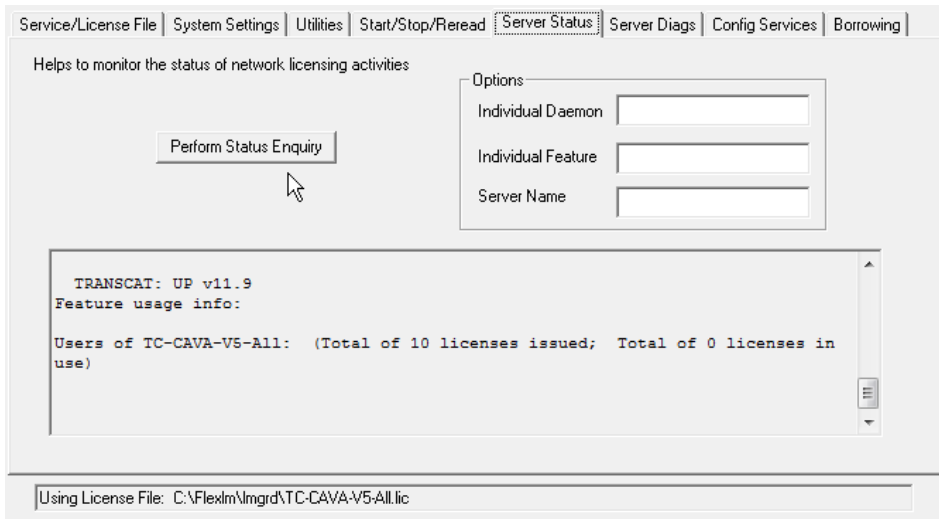
In case of a problem, a detailed error message is shown. Example:



4.3 Check lmgrd license server status using lmtools (Windows only)

To verify that the lmgrd license server is running, follow these steps:

- (1) Run lmtools.exe.
- (2) Click the *Server Status* tab.



- (3) Click *Perform Status Enquiry*.

The server status is displayed:

Status

```

-----
Flexible License Manager status on Wed 1/22/2014 15:49
[Detecting lmgrd processes...]
-----
License server status: 27000@localhost
License file(s) on localhost: C:\Flex1m\lmgrd\TC-CAVA-V5-All.lic:
localhost: license server UP (MASTER) v11.12.0
Vendor daemon status (on localhost):
TRANSCAT: UP v11.9
Feature usage info:
Users of TC-CAVA-V5-All: (Total of 10 licenses issued; Total of 0 licenses in use)

```

Port number and host name of the license server

License file locations

lmgrd status and version

Vendor daemon status and version

List of features and number of licenses

If the license server is not running (“UP”), it may not have started due to the following reasons:

- Another lmgrd process is running using the same port number.
- The server name in the SERVER line of the license file is not correct.

If the vendor daemon is not running (“UP”), it may not have started due to the following reasons:

- The TRANSCAT vendor daemon is not located in the same directory as the license file.
- The TRANSCAT vendor daemon is not located in the path specified in the license file.

Suggested solutions if the lmgrd Windows service is not running

If lmgrd is installed as a Windows service and fails to start, try the following solutions:

Solution 1 – Configure lmgrd to write the report log and debug log to a directory where the license manager service has write permissions. We recommend using a path inside the program-data directory, which has the required permissions as standard. See 3.6.2 *Configure the lmgrd license server using lmtools (Windows only)*.

Solution 2 – Configure lmgrd to run with a different account with sufficient privileges. To do this, follow these steps:

1. In the start menu search box, type “services.msc”, and then press ENTER.
2. In the services dialog, double-click the entry for the FlexNet service.
3. On the *Log On* tab, choose an appropriate account.

You can click *Browse* to show a list of available accounts.

Solution 3 – Grant the required read/write permissions in the directory where lmgrd writes the report log and debug log. To do this, execute the following command at the command prompt:

```
icacls "<path>" /grant *S-1-5-19:(OI)(CI)(M)
```

Where <path> is the directory path. Example:

```
icacls "C:\ProgramData\TECHNIA\LicenseMgr\" /grant *S-1-5-19:(OI)(CI)(M)
```

4.4 Check the ladmin license server status

(1) Open the web browser and enter the following location:

```
http://server_name:8090
```

where `server_name` is the license server name, and `8090` is the HTTP port number specified during installation.

If the server is not responding, restart the ladmin service on the computer's Services management console (`services.msc`).

(2) Click the *Dashboard* tab.

The dashboard shows the current license server status.

The screenshot displays the FlexNet Publisher dashboard. The top navigation bar includes the Flexera Software logo, the product name 'FlexNet Publisher', and user information: 'User Name: admin', 'Help', and 'Sign Out'. Below the navigation bar, there are two main sections: 'Alerts' and 'Licenses'.

The 'Alerts' section shows two icons: a red octagon with '0' and a yellow triangle with '0', indicating zero critical alerts. Below this, it says '0 Critical'.

The 'Licenses' section is titled 'Vendor Daemon: TRANSCAT'. It features two status icons: 'Activatable' (blue) and 'Concurrent' (green). Below these icons is a table with the following columns: 'Feature', 'Version', 'In Use (Available)', and 'Expiration'.

Feature	Version	In Use (Available)	Expiration
TC-CAVA-V5-All	1.0	0 (10)	1-JAN-2015

4.5 Check network firewall settings

If the server computer uses a network firewall, you may need to add the following exceptions:

- Program exception: Allow communications for `TRANSCAT.exe`
- Port exception: Allow TCP communications over the license server port. The default port number is in the range between 27000 and 27009. See the `SERVER` entry of the license file if a different port number has been specified.

Instead of the port exception, you can add program exceptions for `lmadmin.exe` or `lmgrd.exe`.

5 List of feature names

Feature name	Product
TC-CAVA-V5-All	CAVA, all modules
TC-CAVA-V5-Manikin	CAVA Manikin module
TC-CAVA-V5-OVA	CAVA OVA module
TC-CAVA-V5-Safety	CAVA Safety module
TC-CAVA-V5-Safety-Radius	CAVA Safety Radius module
TC-CAVA-V5-Tools	CAVA Tools
TC-CAVA-V5-Vision	CAVA Vision module
TC-CAVA-V5-Vision-Mirror	CAVA Vision Mirror module
TC-CAVA-V5-Vision-View	CAVA Vision View module
TC-CAVA-V5-Wiper	CAVA Wiper module
TC-CAVA-V6-All	CAVA for V6/3DEXP, all modules
TC-CAVA-V6-Manikin	CAVA for V6/3DEXP, Manikin module
TC-CAVA-V6-OVA	CAVA for V6/3DEXP, OVA module
TC-CAVA-V6-Safety	CAVA for V6/3DEXP, Safety module
TC-CAVA-V6-Safety-Radius	CAVA for V6/3DEXP, Safety Radius module
TC-CAVA-V6-Tools	CAVA for V6/3DEXP, Tools
TC-CAVA-V6-Vision	CAVA for V6/3DEXP, Vision module
TC-CAVA-V6-Vision-Mirror	CAVA for V6/3DEXP, Vision Mirror module
TC-CAVA-V6-Vision-View	CAVA for V6 AND 3DEXPERIENCE Vision View module
TC-CAVA-V6-Wiper	CAVA for OR V6 AND 3DEXPERIENCE Wiper module
Lite3DHTMLBatch	LiteBox3D 3D HTML batch export
LiteBox3DPro	LiteBox3D Pro
LiteComplyJTBatch	LiteComply for JT, batch mode only
LiteComplyJTInteractive	LiteComply for JT, interactive mode only
LiteComplyTIFFInteractive	LiteComply for TIFF, batch mode only
LiteComplyTIFFInteractive	LiteComply for TIFF, interactive mode only
LiteDropAll	LiteDrop, interactive and batch modes
LiteDropBatch	LiteDrop, batch mode only

Feature name	Product
LiteDropInteractive	LiteDrop, interactive mode only
LiteMachine	LiteMachine
TC-XFileV5-batch	XFileV5, batch mode only
TC-XFileV5-interactive	XFileV5, interactive mode only
TC-vdafsV5	VDAFS V5
xcompareJTJTInteractive	xCompare JT/JT, batch mode only
xcompareJTJTBatch	xCompare JT/JT, interactive mode only
TC-xcompareV5-JT	Q-Compare V5/JT
TC-xcompareV5-SMG	Q-Compare V5/SMG
TC-xcompareV5-V5	xCompare V5/V5

Note that Lite3D features TC-... are being renamed with Lite3D release 2017.6 due to changed requirements by FlexNet Publisher.
