GoldSim License Server

Installation, Configuration, Basic Maintenance and Operation

Version 2.2

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Contents

1 Introduction 1

1.1 GoldSim License Portal 2

1.2 Installation and Configuration Overview 2

1.3 Requirements 3

1.3.1 Network-related Recommendations 4

1.3.2 Virtual Environments 5

1.3.3 FNPLS and Vendor Daemon Version Requirements 6

1.4 Advanced Support and Troubleshooting 6

2 GoldSim License Server Activation Utility 8

2.1 *GLSActUtil* Installation and Initial Entitlement Activation 9

2.2 Next Steps 14

3 Flexera's FlexNet Publisher License Server (FNPLS) 15

3.1 FNPLS and Multiple Software Publishers/Vendors 16

3.2 FNPLS Installation Options 16

3.2.1 New Installation 17

3.2.2 Existing Installation Upgrade 27

4 GTG.exe – GoldSim Vendor Daemon 34

4.1 Basic Vendor Daemon Installation and Configuration 34

4.2 Next Steps 42

5 Basic License Server Management and Operation 43

5.1 Basic Operations 43

5.1.1 *lmadmin* web GUI/website 43

5.1.2 Configuring Clients for License Check Out 45

5.1.3 Checking the Current Status of the License Server 46

5.2 License Maintenance 50

5.2.1 Annual Renewal 51

5.2.2 Moving the License to a Different Machine 53

6 Borrowing 55

6.1 License Server Computer 55

6.2 Client Computer 56

6.2.1 Returning a Borrowed License 61
7 Advanced Configuration Considerations 63
7.1 Installing and running *lmadmin* as a Windows Service 63
7.1.1 Running FNPLS as a System Service with Non-Elevated Permissions 65
7.2 *lmadmin* Command Line Management 65
7.3 Adding Users and Administrators to the License Server 67
7.4 *lmadmin* Log Files 68
7.4.1 Optional Report Log 68
7.5 *lmadmin* Web Services 69
7.6 *lmadmin* Alerter Service 69
7.7 FNPLS Firewall Considerations 69
7.8 *lmutil* Command Line Utilities 70
7.9 Options File 75
7.9.1 Creating an Options File 76
7.10 Environment Variables 78
8 Troubleshooting 79
9 References 83

Tables

Table 1: Recommended OS and Architecture for Physical License Server Machines 3
Table 2: Flexera License Server Utilities which work with GoldSim License Server 72
Table 3: Description of Options Keywords used in example options file 77
Table 4: Common Environment Variables 78

Figures

Figure 1: If lmadmin has previously been configured as a Windows OS service, remove this service before continuing 9
Figure 2: Microsoft Visual C++ 2015 Redistributable is required 10
Figure 3: GLSActUtil Installer - Welcome screen 10
Figure 4: GLSActUtil Installer - License agreement 11
Figure 5: GLSActUtil Installer - Ready to install 11
Figure 6: GLSActUtil Installer - Install complete 12
Figure 7: GLSActUtil Items on the Start Menu 12
Figure 8: GLSActUtil with no Fulfillments, non-elevated user permissions 12
Figure 9: GLSActUtil - Network License Activation dialog 13
Figure 10: GLSActUtil - License activation successful 13

Figure 11: GLSActUtil - Details... options 13
Figure 12: GLSActUtil installation directory 14
Figure 13: FNPLS Installation Package - Introduction 17
Figure 14: FNPLS Installation Package - Choose Install Folder 18
Figure 15: FNPLS Installation Package - Choose Data Folder 18
Figure 16: FNPLS Installation Package - DO NOT Import files from Previous 19
Figure 17: FNPLS Installation Package - Pre-Installation Summary 19
Figure 18: FNPLS Installation Package - Installing 20
Figure 19: FNPLS Installation Package - Important Information 20
Figure 20: C++ 2008 Redistributable, select "Repair" 21
Figure 21: FNPLS Installation Package - Launch Configuration, set FNPLS ports 22
Figure 22: FNPLS Installation Package - Launch Configuration, timeout intervals 22
Figure 23: FNPLS Installation Package - Service Configuration 23
Figure 24: FNPLS Installation Package - Install Complete 23
Figure 25: After FNPLS installation is complete, start the lmadmin service 24
Figure 26: License server management interface, or web GUI, Dashboard after clean install 25
Figure 27: Web GUI Administration requires login 26
Figure 28: A password change is required on first login 26
Figure 29: lmadmin Windows operating system service 28
Figure 30: Sign In to the "Administration" portion of the portal 29
Figure 31: HTTP Port is found in Web Server Configuration section of Server Configuration 30
Figure 32: lmadmin Port is found in License Server Configuration section of Server Configuration 30
Figure 33: Vendor Daemon Port setting is found in the Vendor Daemon Configuration 31
Figure 34: Use the "Server Configuration" tab and "Stop Server" button to stop lmadmin 32
Figure 35: Delete/remove the lmadmin operating system service 33
Figure 36: FNPLS Install Directory after copying GTG folder from GLSActUtil Install Directory 34
Figure 37: GTG directory contents 35
Figure 38: Use the "Vendor Daemon Configuration" tab at the left to install a vendor daemon 36
Figure 39: Use the "Overwrite License File on License Server" option 37
Figure 40: Successful vendor daemon import 37
Figure 41: Newly imported vendor daemon running 38
Figure 42: Vendor daemon administration 39
Figure 43: GoldSim Licensing splash screen 40
Figure 44: Network License Configuration dialog 40
Figure 45: "GoldSim Licensing" dialog showing the successful check-out of a network license 41
Figure 46: lmadmin web GUI Administration | System Information 44
Figure 47: lmadmin web GUI Administration | Server Configuration 44
Figure 48: Example of built-in lmadmin web GUI Help Library 45
Figure 49: "Network License Configuration" dialog 46
Figure 50: Web GUI "Activatable" Licenses Dashboard view 47
Figure 51: Hosts dialog from "Activatable" Licenses 47
Figure 52: Host Details, accessed from Hosts Dialog, Figure 51 47
Figure 53: Fulfillments Dialog from "Activatable" Licenses 48
Figure 54: Web GUI "Concurrent" Licenses Dashboard view 49

Figure 55: Hosts dialog accessed via link on "Concurrent" Licenses Dashboard view 49
Figure 56: lmstat output for looking at license server status 50
Figure 57: GLSActUtil - Main Network License Management dialog 51
Figure 58: GLSActUtil - Network License Activation dialog 52
Figure 59: Activation Successful 52
Figure 60: GLSActUtil - Main Network License Management dialog with new Activation ID and Expiration 52
Figure 61: GLSActUtil - Return confirmation/warning dialog 54
Figure 62: GLSActUtil - Main Network License Management dialog, empty after successful return 54
Figure 63: Initiate Borrowing from client computer using "GoldSim Licensing" dialog (Help | Licensing) 56
Figure 64: "Borrow from License Server" dialog 57
Figure 65: Successful borrow 57
Figure 66: GoldSim Licensing showing successful borrow 58
Figure 67: Trusted storage on the client which shows the successful borrow 59
Figure 68: Trusted Storage excerpt from License Server showing a borrowed license (i.e. a deduction) . 60
Figure 69: GoldSim Licensing dialog showing a borrowed license 61
Figure 70: Return of borrowed license confirmation dialog 62
Figure 71: Return Borrowed License dialog 62
Figure 72: Return successful 62
Figure 73: Install lmadmin as a Windows Service 64
Figure 74: lmadmin added as a local Windows Service 64
Figure 75: New lmadmin Windows Service properties 64
Figure 76: lmadmin command line options 66
Figure 77: Explanation of the new "conf" folder command line switch 66
Figure 78: lmadmin web GUI Administration dashboard, User Configuration, Locally Managed Users 67
Figure 79: lmadmin web GUI Administration dashboard, User Configuration, Domain Users / Groups ... 68
Figure 80: Standard FNPLS logs from FlexNet Publisher: License Administration Guide 68
Figure 81: Complete listing of Flexera license server utilities 71
Figure 82: Example of `lmutil.exe lmdiag` usage 73
Figure 83: Example of `lmutil.exe lmdown` usage 73
Figure 84: Example of `lmutil.exe lmhostid` usage 73
Figure 85: Example of `lmutil.exe lmreread` usage 74
Figure 86: Example of `lmutil.exe lmstat` usage with port@FQDN syntax 74
Figure 87: Example of `lmutil.exe lmstat` usage, referencing license file 74
Figure 88: Example of `lmutil.exe lmver` usage 75
Figure 89: Example of `lmutil.exe lmvminfo` usage 75
Figure 90: An example options file 76
Figure 91: License file with options file path in fourth entry on VENDOR line 77
Figure 92: GLSActUtil - Example of "Advanced...", "Copy to Clipboard" output 82

1 Introduction

GoldSim uses Flexera's FlexNet Publisher (FNP) trusted storage licensing system. One feature of this licensing system is the ability to provide concurrent, counted licenses on a network using a license server. This functionality is sometimes referred to as "floating licenses" because the individual licenses (i.e. seats or counts) can move or float between different computers on the network.

Installation and configuration of a GoldSim Concurrent Network license (i.e. a floating license) is a three-part process which involves the installation and configuration of three separate software components to create a GoldSim License Server. One component, and probably the main component, is Flexera's FlexNet Publisher License Server (FNPLS). This server is produced and maintained by Flexera, independent of GoldSim Technology Group (GTG). FNPLS can serve counted licenses for multiple software products and for multiple software products produced by different companies. As a result, one FNPLS could serve software licenses for Adobe Illustrator, Mathworks Matlab, ESRI ArcGIS Desktop, and GoldSim products, assuming of course that each of these software vendors provided the required plugins for the FNPLS and used the FNP licensing system to license their products.

GTG, which produces GoldSim, uses the FNPLS to serve counted GoldSim licenses. As a result, GTG needs to provide a vendor daemon (all software producers which use FNPLS need to do this) which mediates between FNPLS and GoldSim software licenses to serve these licenses to GoldSim software products installed on client machines. Client machines are simply computers attached to the local TCP/IP network which obtain GoldSim software licenses from the FNPLS. The GoldSim vendor daemon is the second software component that is required for provision of GoldSim Concurrent Network licenses. The GoldSim vendor daemon is ***GTG.exe***. This vendor daemon, ***GTG.exe***, is provided as part of the installation package for the GoldSim License Server Activation Utility.

The GoldSim License Server Activation Utility (***GLSActUtil***) is the third software component required as part of the GoldSim License Server. ***GLSActUtil*** provides for activation of software entitlements which is the process of installing the software license on the license server computer. ***GLSActUtil*** also provides some basic license management functionality.

The three GoldSim License Server software components which are required are listed and summarized below.

1. **FlexNet Publisher License Server (FNPLS)** is the license server. The installation package is available from the GoldSim website Network License Downloads section. This installation package was created and is provided by Flexera.

2. **GoldSim vendor daemon, GTG.exe**, provides the interface between FNPLS and a GoldSim software license fulfilled on the license server computer. GTG.exe is transferred to the license server computer as part of the GoldSim License Server Activation Utility (***GLSActUtil***) installation package.

3. **GoldSim License Server Activation Utility (*GLSActUtil*)** provides a convenience tool for license management and provides the means for installing, or fulfilling, a license on/to the license server computer. The installation package for ***GLSActUtil*** is available from the GoldSim website Network License Downloads section.

1.1 GoldSim License Portal

You will only need to install and configure a GoldSim License Server if you have purchased a GoldSim Concurrent Network license. As part of this purchase, you receive access to the GoldSim License Portal. This portal is a web-site hosted in Flexera's Cloud which provides you access to the details and particulars of all of your GoldSim licenses. You can access the portal at: http://goldsim.com/licenseportal

An article providing an Overview of the GoldSim License Portal is available in the GoldSim Help Desk.

When you purchased a GoldSim Concurrent Network license an Entitlement Certificate was also emailed to you or to the designated contact for your company. This Entitlement Certificate contains a unique Entitlement ID and an Activation ID. The Activation ID is required to install your license on your license server computer. The valid Activation ID for your license will change over time as a result of various license life cycle processes. The Entitlement ID will be constant and uniquely identifies your license. You can look up both the Entitlement ID and the Activation ID in the GoldSim License Portal.

1.2 Installation and Configuration Overview

High-level, or overview, steps for installing and configuring a GoldSim license server, from scratch, are listed below. Additional details are provided in the pertinent, referenced chapters.

Note: You need to have purchased a GoldSim Concurrent Network license before starting the license server installation process and you need to have the Entitlement Certificate for this license in your possession before starting the installation process, or you need to look up your Activation ID in the GoldSim License Portal. Without a valid entitlement to a Concurrent Network license, this installation process will fail.

Note: This guide assumes that you are installing a new Flexera FlexNet Publisher License Server and thus a new GoldSim License Server and that there are no existing license servers installed on the computer designated to function as a license server.

Note: If you are interested in upgrading an existing installation of FNPLS, please see Section 3.2.2.

1. Select or designate a License Administrator. This person is responsible for the installation, configuration, and maintenance of the GoldSim License Server.
    a. The License Administrator is also the individual responsible for communicating the pertinent configuration details and custom action and feature details to the client machines and client users.
    b. Ensure that the License Administrator's contact information is added to the license entitlement. Confirm this with GTG.

2. Select a computer on which to install the GoldSim license server.
    a. Examine the requirements for the FNPLS in the **FlexNet Publisher: License Administration Guide**. This guide provides the authoritative reference for all things

pertaining to the FNPLS. It can be obtained from the GoldSim website Network License Downloads section.

b. Ensure that the License Server computer and the TCP/IP network topology meet the minimum requirements and recommendations specified in Section **1.3**.
c. Make sure that the designated License Administrator has "Administrator" privileges on this computer.

3. Install the GoldSim License Server Activation Utility (***GLSActUtil***). This also places a copy of the vendor daemon, ***GTG.exe***, on the license server machine. Follow the instructions in Section **2.1**.
    a. Use ***GLSActUtil*** to install the license on your license server machine. This is done via the activation process to create a fulfillment in server Trusted Storage on the machine.

4. Install the FlexNet Publisher License Server (FNPLS): follow the instructions in Section **3**.
    a. Includes FNPLS upgrade instructions in Section **3.2.2**.

5. Install the GoldSim vendor daemon, ***GTG.exe***, in the FNPLS. As part of installing this component, you will copy a folder installed as port of the ***GLSActUtil*** installation. Follow the instructions in Section **4.1**.
    a. Includes the basic configuration steps identified in Section **4.1**.

6. Examine the advanced configuration information in Section **7**. Many of these configuration steps are strongly recommended.
    a. Completion and implementation of these steps are the sole responsibility of the designated License Administrator.

1.3 Requirements

FNPLS can be installed on a wide variety of operating systems and hardware assuming that the correct installation package can be obtained from Flexera. The GoldSim vendor daemon, ***GTG.exe***, is a Windows 32-bit executable and can only be installed on Windows systems. ***GLSActUtil*** is also a Windows 32-bit executable and can only be installed on Windows systems. Consequently, it is only recommended to install a GoldSim License Server on current Windows Operating Systems (OSes). Recommended OSes and specifications are listed in **Table 1**.

Table 1: Recommended OS and Architecture for Physical License Server Machines

Operating Systems (OSes)	Architecture
Windows 8.1	x86, x86-64
Windows 10	x86, x86-64
Windows Server 2012R2 Standard*	x86-64

*This system should not be a primary domain controller.

Table 1 lists the recommended operating systems and architectures for a GoldSim License Server composed of ***GTG.exe*** version 1.1 and ***GLSActUtil*** version 1.1. In addition, **Table 1** only applies to physical license server machines.

- It very well may be possible to install, configure, and use a GoldSim License Server on other OSes, architectures, and in virtual environments.

- However, GTG will only provide support for systems that meet the recommendations in **Table 1**.

- If you would like to attempt to install, configure, and use a GoldSim License Server on an environment not listed in **Table 1**, then GTG will provide a 1 month, trial deployment license for your use in testing your proposed installation and configuration prior to license purchase. But, **NO** license server support is available from GTG for the trial deployment and **NO** license server support will be available after purchase.

1.3.1 Network-related Recommendations

The GoldSim Concurrent Network license is a served, FNP license model. This means that these licenses are designed to be centrally provided, held, and managed by a license server and used by FlexEnabled applications connected to the license server across a TCP/IP network. GoldSim is a FlexEnabled application; it uses FNP licensing libraries/API to verify and acquire its licenses.

The important point here is that the client machines running GoldSim need to be **connected** to the license server across a TCP/IP network. This connection needs to be persistent and robust as the license server and the clients, which currently have served licenses, will check in with each other on regular time intervals. Failure of this check-in communication will lead to the client machine losing the currently checked-out license. Additionally, the TCP/IP network is not the "internet". The GoldSim License Server, at least at this point, is not a Cloud License Server so that a regular ISP internet connection is not necessarily sufficient for a TCP/IP network connection. Given the connection requirements, always test client connectivity to the license server by:

1. Connecting from a client running on the same computer as the license server, and then

2. Connecting from a client running on a computer on the same subnet of the local area network (LAN) as the license server machine after disabling all firewalls in between the client and server (i.e. disable the Windows Firewall on both before testing).

These are the steps outlined in Section **4.1** as the final tests for the "bare bones", license server set-up and configuration.

- GTG cannot troubleshoot connection issues on your network. As a result, **NO** support is provided by GTG, paid or otherwise, for connection issues other than the two basic connection scenarios identified above.

- The GoldSim License Server is **NOT** guaranteed to seamlessly serve licenses across the world (i.e. from Canada to clients in Australia). This may work seamlessly in particular situations; however,

GTG cannot configure or manage your wide area network (WAN) so **NO** support, paid or otherwise, is provided for this type of connection issue.

- The GoldSim License Server is also **NOT** guaranteed to work across your Virtual Private Network (VPN). In testing, the GoldSim License Server has worked flawlessly across several VPN configurations. However, GTG cannot configure or manage your VPN and so **NO** support, paid or otherwise, is provided for VPN-related, GoldSim License Server connection issues.

- For network connectivity scenarios/concerns outside of the two supported scenarios listed in #**1** and #**2** above, GTG will provide a 1 month, trial deployment license for your use in testing your proposed installation and configuration prior to license purchase. But, **NO** license server support is available from GTG for the trial deployment and **NO** license server support will be available for VPN or continent-spanning connection issues after purchase.

1.3.2 Virtual Environments

Virtual machines (VMs) are generally problematic for software licensing. There is really no failure proof way to prevent license leakage when virtual machines are used. License leakage is the creation of an additional license or acquisition of a license without paying the software vendor for the license.

VMs provide many advantages to system administrators including high availability and fault tolerance and are widely adopted in corporate networks. Given the widespread use of VMs and the many advantages that VMs provide to the enterprise, GTG does not deny, or block, the use of GoldSim on VMs or the use of the GoldSim License Server on VMs. In fact, GTG has tested both GoldSim and GoldSim License Servers on a number of VMs and uses a number of VMs in house for GoldSim License Servers.

- However, GTG does **NOT** provide support, paid or otherwise, for GoldSim License Server installation, configuration, and implementation on virtual machines (VMs).

- There are a number of ways to use a VM for a GoldSim License Server which will generate license leakage. These use cases will result in the invalidation of the license as part of the built-in protection measures in the FNP licensing API. The action/use case that generated the leakage and invalidation may be accidental in many cases. However, GTG may, at our discretion, charge hourly support fees (see Section **1.4**) to repair invalidated licenses, and GTG reserves the right to charge for new licenses to replace invalidated licenses.

The preceding discussion applies to VMs which are executed and managed within a hypervisor installed on a single physical computer. A hypervisor, also sometimes called a virtual machine monitor, is a system that creates and runs virtual machines using an underlying collection of physical hardware. VMs may also be provided as a service through an Infrastructure as a service (IaaS) or cloud “compute” environment, like Azure Compute Service or Amazon Elastic Compute Cloud.

An advantage of IaaS is that it provides a service that abstracts the user from the details of infrastructure like physical computing resources, location, data partitioning, scaling, security, and backup. For this type of environment, a pool of hypervisors run the virtual machines as guests on the

underlying hardware and provides the ability to scale services up and down according to customers' varying requirements. As a result, these virtual machines are instantiated and brought down frequently. Re-instantiation likely includes moving the virtual machine to a different collection of underlying physical hardware; additionally, the hypervisors may move virtual machines to new physical hardware on the fly. Consequently, the traditional hardware-based binding elements for software licenses are not reliable in a cloud "compute" or IaaS environment.

GoldSim Concurrent Network licenses should **NOT** be activated in cloud "compute" or IaaS environments because Trusted Storage-based licensing relies on binding the license to the underlying physical hardware. As a result, Trusted Storage-based licenses will not work reliably in a cloud "compute" environment. Eventually, the VM, on which the license is installed, will be moved to different underlying physical hardware by the hypervisor which will break the hardware bindings and cause the license to fail. Activation of a Concurrent Network license in a cloud "compute" or IaaS environment is considered a breach of the license agreement. Please contact GTG if you would like to obtain a special, certificate-based license for use in cloud "compute" environments.

1.3.3 FNPLS and Vendor Daemon Version Requirements

The same software toolkit, i.e. the FNP Toolkit which is provided by Flexera, is used to build FNPLS and used by GTG to build the vendor daemon, ***GTG.exe***, and to build the GoldSim software program. Consequently, there are version compatibility restrictions among FNPLS, ***GTG.exe***, and GoldSim which govern what versions of these three programs will function together. These version restrictions relate to the underlying FNP Toolkit version which was used to build each product. This underlying FNP Toolkit version number is identical to the version number for FNPLS.

- FNP Toolkit versions for GTG.exe and GoldSim are provided in the GoldSim release notes. These are installed as part of product installation and are available on the GoldSim website.

- The rule of thumb for FNP Toolkit versions is that:
    - FNPLS version >= GTG.exe FNP Toolkit version >= GoldSim FNP Toolkit version

1.4 Advanced Support and Troubleshooting

Troubleshooting is the diagnosis and correction of a process failure. In this case, troubleshooting would involve one or more steps in Sections **2.1**, **3**, and **4.1** failing to work or complete as documented in this guide. For assistance or support with troubleshooting one or more steps in Sections **2.1**, **3**, and **4.1**, extensive resources are available. These resources include the following.

1. Follow the troubleshooting steps in Section **8**. These steps will lead to problem resolution in most cases.

2. Review GoldSim's extensive online support documentation, Knowledge Base, and tips and tricks, available online.

3. Contact GTG via email at support@goldsim.com. Before contacting GTG via email, follow the troubleshooting steps in Section **8** and provide all of the suggested information and documentation from Section **8** in your initial email.

2 GoldSim License Server Activation Utility

The GoldSim License Server Activation Utility (***GLSActUtil***) is a utility program created by GoldSim Technology Group LLC (GTG) to provide for license maintenance for GoldSim Concurrent Network licenses on GoldSim License Server computers. GTG implements Flexera's FlexNet Publisher libraries for licensing. Specifically, GTG implements FlexNet Publisher Trusted Storage based licensing for GoldSim Concurrent Network licenses.

Trusted Storage is a secure storage area where license rights are stored on a computer. Trusted Storage is analogous in operation to a license file from the end-user's perspective. In reality, the trusted store is more hidden on the hard disk and protected from unauthorized access than an actual license file would be. For GoldSim Concurrent Network licenses, a client computer can check out served, or floating, licenses from the server Trusted Storage.

GLSActUtil provides the sole means for GoldSim customers to create and modify server Trusted Storage for GoldSim Concurrent Network licenses. One of the primary functions of ***GLSActUtil*** is the installation of entitled license rights into server Trusted Storage. This installation process is called activation and it results in the creation of a fulfillment record in Trusted Storage which provides the entitled rights to use GoldSim software.

The Activation process involves communication between the GoldSim License Server computer and GoldSim's FlexNet Operations Cloud (FNOC) portal. The Activation ID provides the unique key that enables and facilities this communication. For internet connected computers, the communication with FNOC will be transparent to the user, will happen automatically, and will result in the creation of a fulfillment record on the GoldSim License Server (assuming of course that the Activation ID is entered correctly and that computer is actually connected to the internet).

The license server is an FNPLS instance installed according to Section **3**. The GoldSim vendor daemon, ***GTG.exe***, needs to be installed into this FNPLS instance and configured for operation per Section **4.1**, in order to create a GoldSim License Server. Once the vendor daemon is installed and configured, it will read GoldSim software license information from Trusted Storage whenever it is started by FNPLS or instructed to re-read Trusted Storage by FNPLS. As a result, Trusted Storage and the fulfillments in Trusted Storage are separate entities from FNPLS and ***GTG.exe***. Given the separation between Trusted Storage and FNPLS, ***lmadmin*** should always be stopped before running/starting ***GLSActUtil***.

Important: Always stop all license servers (i.e. all instances of *lmadmin*) before starting *GLSActUtil*.

- If you are working on a new GoldSim License Server installation and following this guide, then FNPLS (i.e. ***lmadmin***) has not been installed at this point.
- Instructions and suggestions for stopping ***lmadmin*** are provided in Sections **5.1.1**, **7.2**, and **7.8**.
- Do not restart the license server (i.e. do not restart ***lmadmin***) until ***GLSActUtil*** is closed.
- The one exception to this rule is if you purely need to produce a print-out of Trusted Storage for licensing support. However, do **NOT** have the license server running when license maintenance tasks or Trusted Storage modification tasks are attempted with ***GLSActUtil***.

2.1 *GLSActUtil* Installation and Initial Entitlement Activation

Before attempting to install ***GLSActUtil***, please do/complete the following items.

- Download the latest GoldSim License Server Activation Utility (***GLSActUtil***) installation package from the GoldSim website Network License Downloads section. Copy this installation package to the license server computer local hard drive.

- Find the Entitlement Certificate from your purchase of a GoldSim Concurrent Network license. Note the Activation ID provided on this Certificate. Alternatively, look up the Activation ID in the GoldSim License Portal. You will need this Activation ID to complete the initial Activation.

- Stop all instances of FNPLS (i.e. ***lmadmin***) on the license server computer.

Then complete the following steps to install ***GLSActUtil*** on the license server computer and to create a fulfillment record for your Concurrent Network license in server Trusted Storage. Note that these are the steps for a clean installation of ***GLSActUtil***. If you are interested in doing a ***GLSActUtil*** upgrade installation (i.e. you already have ***GLSActUtil*** installed on your license server computer), then please see the document GoldSim License Server Activation Utility: Installation and Basic Use which is available from the GoldSim website Network License Downloads section and is distributed with the ***GLSActUtil*** installation package.

1. **STOP** all instances of FNPLS (i.e. ***lmadmin***) on the GoldSim License Server computer before starting the installation process. If this is a new GoldSim License Server installation, FNPLS (i.e. ***lmadmin***) will only be present if you are using this computer as a license server for a different software product.

2. Additionally, if ***lmadmin*** has been installed previously as a Windows OS service, **REMOVE** the service before continuing. Again, this will only occur if this computer is already used for a license server.
    - Run “lmadmin.exe -configDir "C:\ProgramData\FLEXlm\lmadmin\conf" –removeService lmadmin” from an Administrator command prompt in the FNPLS installation directory to remove the ***lmadmin*** service (see **Figure 1**).

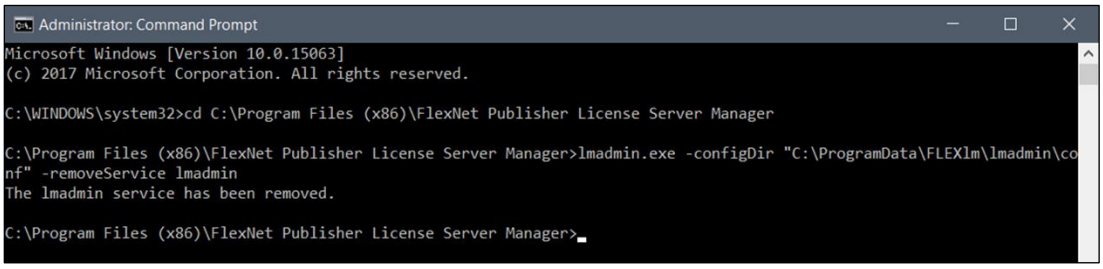

Figure 1: If *lmadmin* has previously been configured as a Windows OS service, remove this service before continuing

3. Run the installation package “As Administrator”.

4. You may be prompted to install the Microsoft Visual C++ 2015 Redistributable as shown in **Figure *2***. This is required so use the “Install” button to install it.

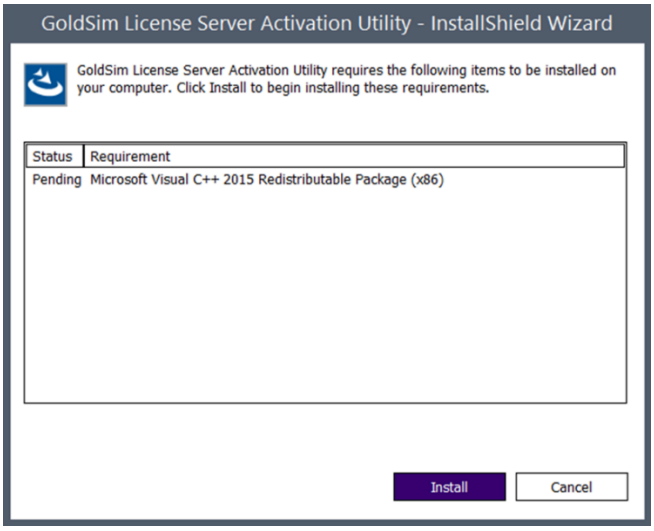

Figure 2: Microsoft Visual C++ 2015 Redistributable is required

5. After the redistributable is installed, the Installation Welcome screen will come up as shown in **Figure 3**.

Figure 3: GLSActUtil Installer - Welcome screen

6. Accept the license agreement and use “Next >” to continue as depicted in **Figure 4**.

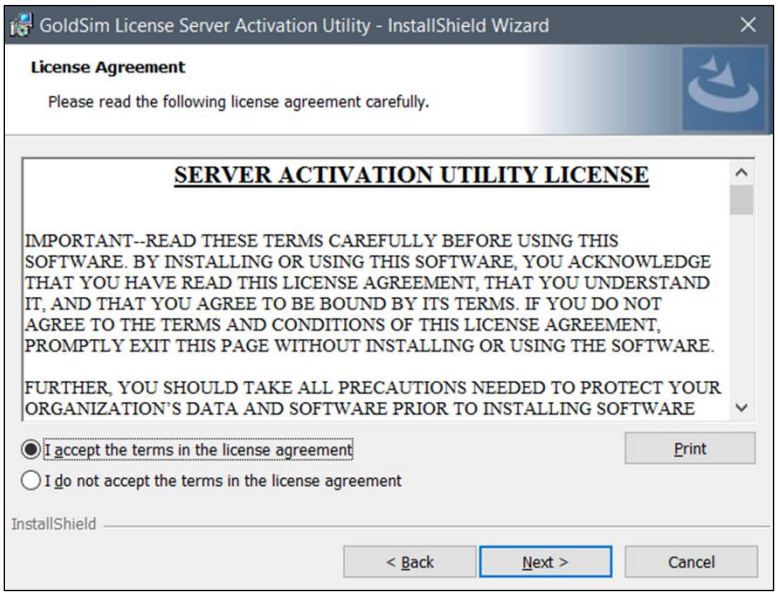

Figure 4: GLSActUtil Installer - License agreement

7. After accepting the license agreement, use the “Install” button on the “Ready to Install” dialog shown in **Figure 5** to install ***GLSActUtil***.

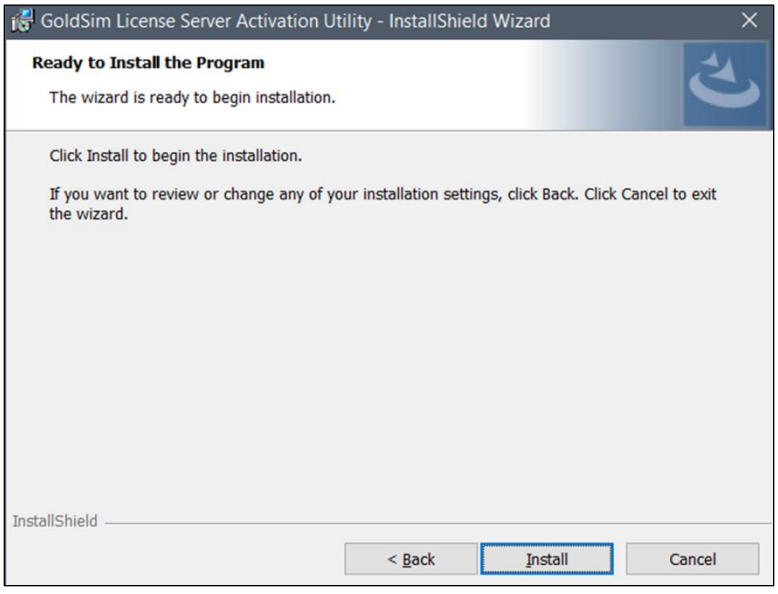

Figure 5: GLSActUtil Installer - Ready to install

8. Upon successful install completion, you will get the Successful Install notification dialog shown in **Figure 6**.

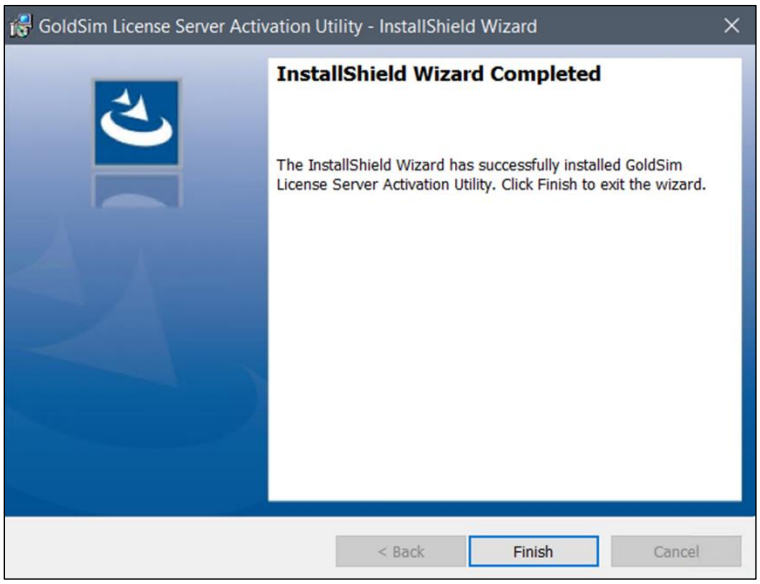

Figure 6: GLSActUtil Installer - Install complete

9. Go to the Start Menu and find "GoldSim License Server Activation Utility" in the list of programs as shown in **Figure 7**. Select/start this program. ***GLSActUtil*** comes up with no fulfillments (see **Figure 8**).

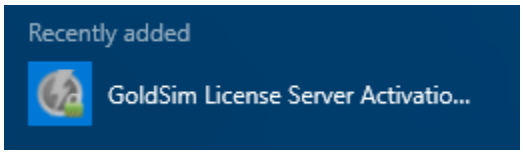

Figure 7: GLSActUtil Items on the Start Menu

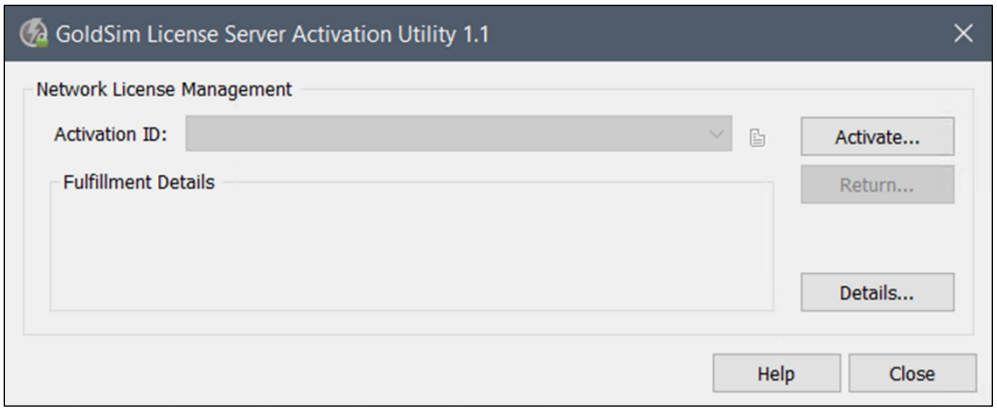

Figure 8: GLSActUtil with no Fulfillments, non-elevated user permissions

10. Use the "Activate…" button shown in **Figure 8** to start the activation process. Enter the Activation ID from your Entitlement Certificate in the "Activation Key" field shown in **Figure 9**.

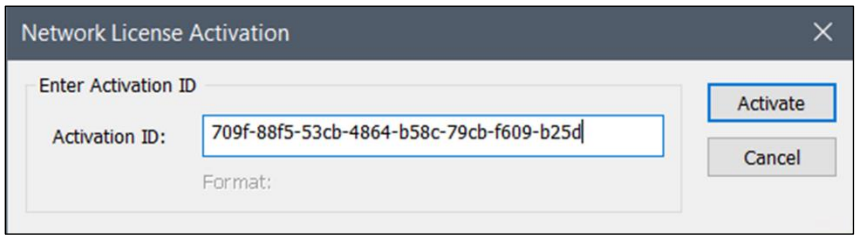

Figure 9: GLSActUtil - Network License Activation dialog

11. If the license activation is successful, you will see the "License activation successful!" dialog shown in **Figure 10**.

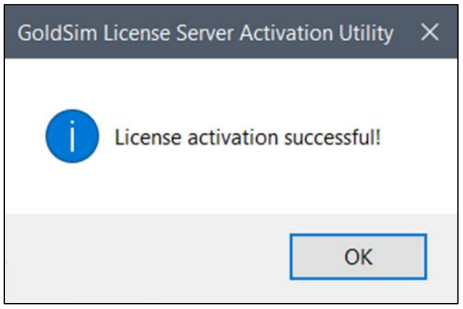

Figure 10: GLSActUtil - License activation successful

12. The result of a successful activation is that fulfillment records for this license have been written to Trusted Storage. To see license related details about your computer and all available fulfillment records, use the "Details…" button and select "License System Details" as shown in **Figure 11**.

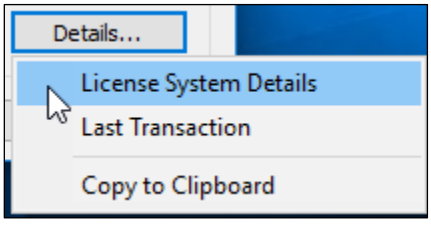

Figure 11: GLSActUtil - Details... options

13. ***GLSActUtil*** is now successfully installed and a software entitlement for a Concurrent Network license has been successfully fulfilled to Trusted Storage.
    - Close ***GLSActUtil***.
    - Note that the ***GLSActUtil*** installer also places some files in the installation directory (see **Figure 12**) that will be used to install, configure, and maintain the vendor daemon, ***GTG.exe***. These files are mostly in the "GTG" directory, and the list of files to note includes the "lmutil.exe" file.

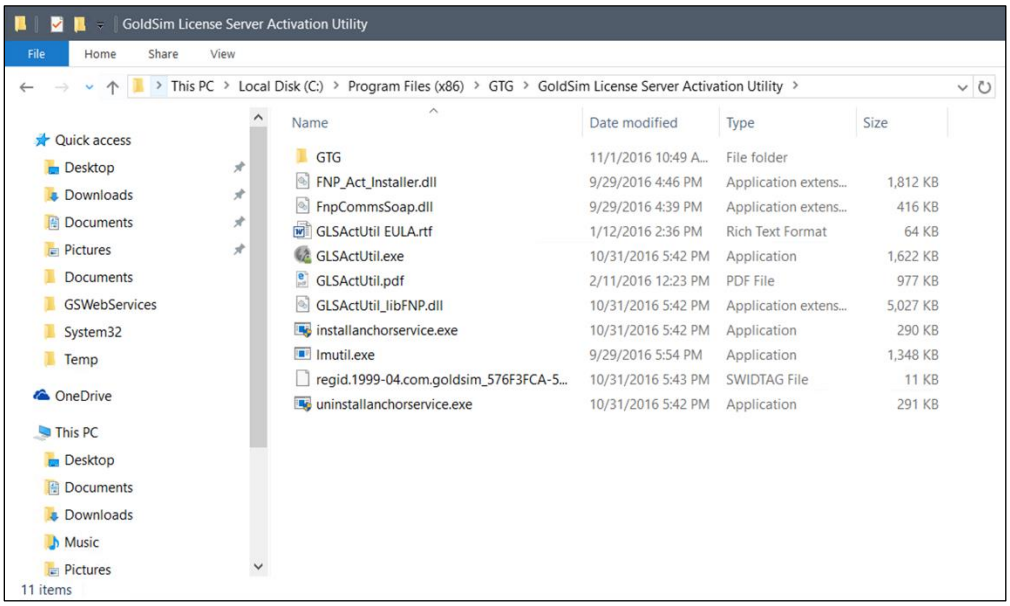

Figure 12: GLSActUtil installation directory

2.2 Next Steps

- At this point, the installation of ***GLSActUtil*** and activation of the initial entitlement has been successful. Please continue on with Section **3**.

3 Flexera's FlexNet Publisher License Server (FNPLS)

The FlexNet Publisher License Server (FNPLS) provides a generic framework for serving concurrent licenses from one or more software vendors for one or more software products. In FlexNet terminology a software product is a defined collection of features where a feature is an individually licensed component. Flexera created FNPLS and maintains it.

- The complete documentation, installation, and configuration guide for FNPLS is distributed by Flexera in the **FlexNet Publisher: License Administration Guide**. This guide provides the authoritative reference for all things pertaining to the FNPLS. It can be obtained from the GoldSim website Network License Downloads section.
- This section, Section **3**, discusses FNPLS and provides a basic set of instructions, extracted from the **FlexNet Publisher: License Administration Guide**, to provide the bare minimum in terms of installation and configuration in order to obtain a functioning license server.
    - FNPLS upgrade installation considerations are discussed in Section **3.2.2**.
- One place where you can obtain the FNPLS installation package is from the GoldSim website Network License Downloads section.

Flexera maintains FNPLS and issues multiple updates for FNPLS each year. FNPLS works by providing licenses across a network (intranet or internet). Because it is designed to work on/with a network, security vulnerabilities are occasionally discovered and then subsequently fixed/patched. This is one reason for the software update schedule with multiple updates per year; it is also a good reason to keep FNPLS up to date.

In March of 2017, Flexera released FNPLS version 11.14.1.1. In this version, several outstanding security and operational issues were resolved. These resolutions resulted in a significantly modified application foot print and functionality. This means that the installation procedures and protocols for this version, 11.14.1.1, have completely changed relative to previous versions.

A selection of these modifications is reproduced below.

- Previously, the lmadmin installer for Windows installed the folders and subfolders by default in the **Program Files (x86)** directory, and created the lmadmin service of the type "Local Service", with start-up type "Automatic". As a result, the lmadmin service could fail to start, because it had insufficient privileges to create subfolders in the **Program Files (x86)** directory.
  In FlexNet Publisher 11.14.1.1, the folders that are updated at run time (**conf**, **logs**, **cache**, **licenses**) are installed by default under **ProgramData**. The files, folders, executables, and DLLs that are not modified at run time are installed under **Program Files**. To perform any operation related to lmadmin, where the **conf** directory is not a subdirectory of the lmadmin installation directory, the **conf** directory must be indicated using the -configDir switch, for example:

```
lmadmin.exe -import counted.lic -configDir "C:\ProgramData\FLEXlm\lmadmin\conf"
```

- In FlexNet Publisher 11.14.1, the lmadmin InstallAnywhere installer no longer bundles the JVM. As a consequence, for Windows, there is now only one lmadmin installer (previously there were two, one for 32-bit bundled JVM, one for 64-bit bundled JVM).

3.1 FNPLS and Multiple Software Publishers/Vendors

GoldSim is a software publisher that uses Flexera's licensing tools in GoldSim software. GoldSim produces a vendor daemon, using Flexera's licensing tools, which is essentially a plugin to FNPLS that allows the generic FNPLS to provide and manage GoldSim concurrent network licenses. Other software publishers/vendors also use Flexera's licensing tools and also produce vendor daemons that allow FNPLS to provide and manage their network licenses.

There are three possible FNPLS and vendor daemon scenarios when dealing with a single license server computer.

1. A single instance of FNPLS installed on a single computer will serve only GoldSim licenses (i.e. one vendor daemon).
2. A single instance of FNPLS installed on a single computer will serve licenses from multiple software vendors, including GoldSim, by managing multiple vendor daemons.
3. Multiple instances and installations of FNPLS installed on a single computer will each serve licenses from at least one vendor daemon.

Additional discussion of dealing with the many license server and vendor daemon scenarios is provided in ***Chapter 18: Managing Licenses from Multiple Software Publishers*** of the **FlexNet Publisher: License Administration Guide**.

GoldSim recommends that you employ approach **#1** or **#2** above so that there is only one instance of FNPLS to maintain. Each vendor daemon uses a particular version of Flexera's licensing tools which have a corresponding FNPLS version with the same version number. The Flexera licensing tools version for a particular vendor daemon needs to be less than or equal to the installed FNPLS version in order for that vendor daemon and client software to work with that version of FNPLS (see Section **1.3.3**).

- Generally, vendor daemons do not need to be updated that frequently.
- FNPLS may need to be updated multiple times per year to address significant security vulnerabilities.
- Typically, FNPLS can be updated without having to update the vendor daemons. If the vendor daemon is upgraded (for GoldSim, ***GLSActUtil*** is upgraded) then it is likely that FNPLS will also need to be upgraded so that the FNPLS version number >= the FNP toolkit version number.

3.2 FNPLS Installation Options

There are two main options for FNPLS installation.

1. New Installation
2. Existing Installation Upgrade

The new installation procedures are discussed in Section **3.2.1**. Existing installation upgrade considerations and tips are provided in Section **3.2.2**. Typically, you will use the upgrade method if you have an existing instance of FNPLS (i.e. lmadmin.exe) installed on the target system.

3.2.1 New Installation

NOTE: Before starting the following procedural steps, a License Administrator needs to be selected and a computer needs to be selected to host the license server. Please complete these two preliminary tasks before proceeding.

1. Obtain and install the current version of the Java Runtime Environment (JRE) which provides the required Java Virtual Machine (JVM) for FNPLS. The Java Standard Edition (SE) Runtime for Version 8, the current version in April 2017, is available from Oracle. JRE installation packages are available for both 32 bit Windows and 64 bit Windows. Select the installation package that corresponds to your selected license server computer.

2. Obtain the FNPLS installation package. One option for obtaining this package is from the GoldSim website Network License Downloads section. There is only one FNPLS installation package available for FNPLS 11.14.1.1.

    - **Note**: only the ***lmadmin*** version of FNPLS is supported for a GoldSim License Server. There is a legacy, FlexNet server executable called lmgrd. lmgrd is **NOT** supported for GoldSim licenses.

3. Run the installation package using "Run as Administrator". This is the clean/new install route. The first screen in the installation package will be the Introduction dialog shown in **Figure 13**.

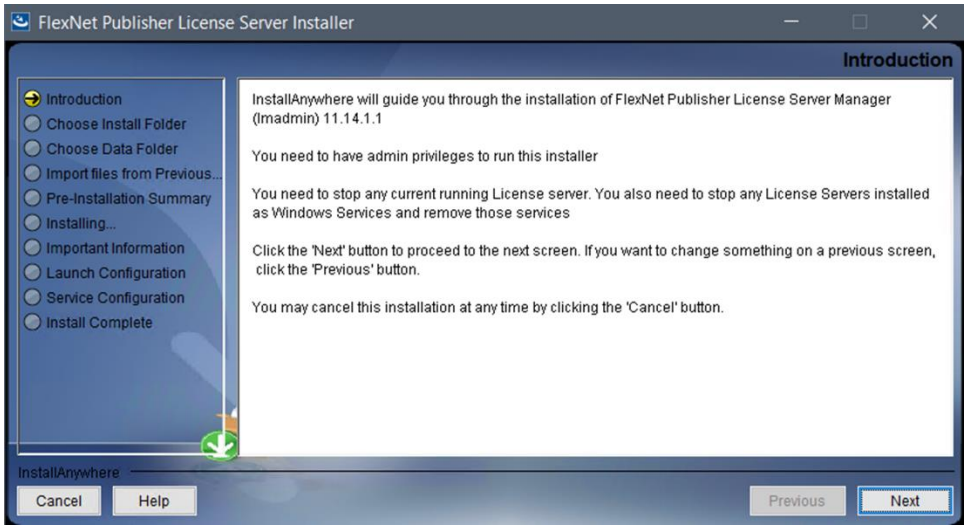

Figure 13: FNPLS Installation Package - Introduction

4. If possible, use the default location for the installation as shown in **Figure 14**.

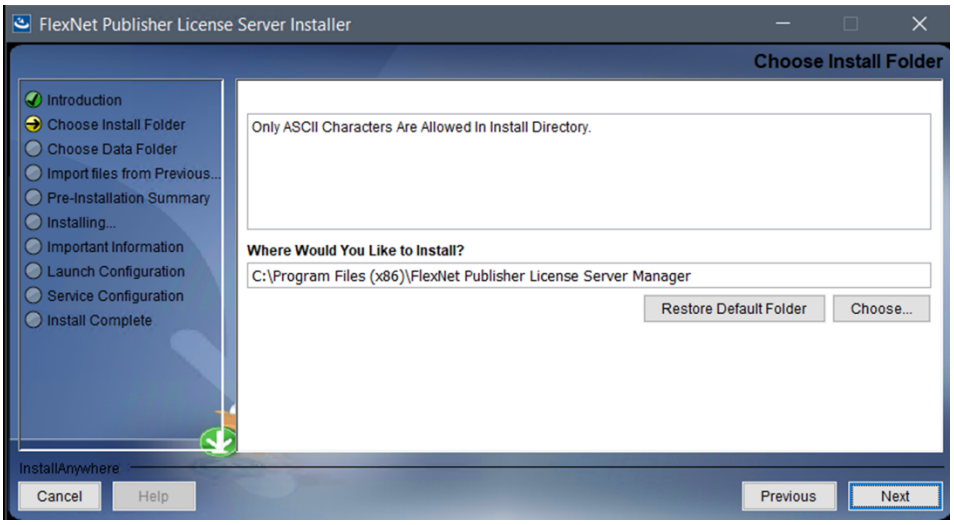

Figure 14: FNPLS Installation Package - Choose Install Folder

5. FNPLS now installs some files in C:\ProgramData. Please use the default installation directory as shown in **Figure 15**.

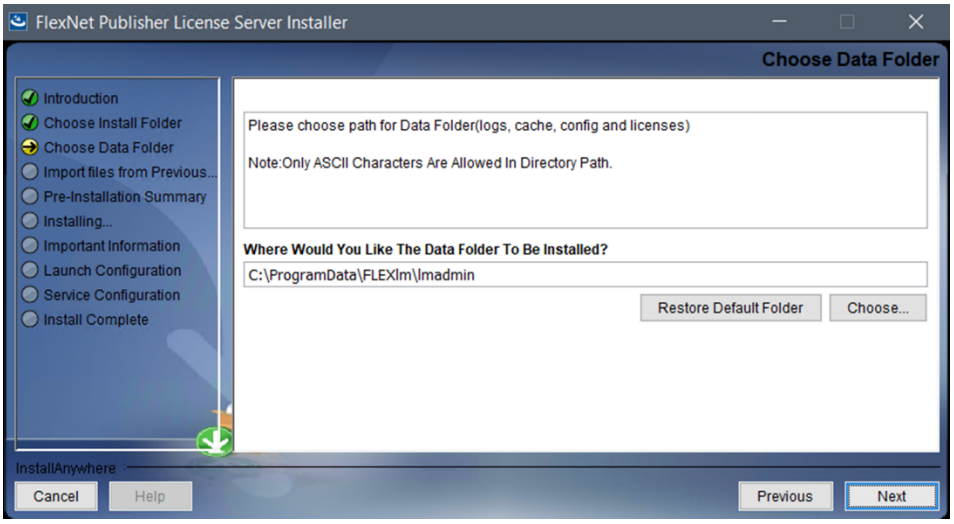

Figure 15: FNPLS Installation Package - Choose Data Folder

6. This is a new/clean installation so there is no previous installation to import as shown in **Figure 16**.

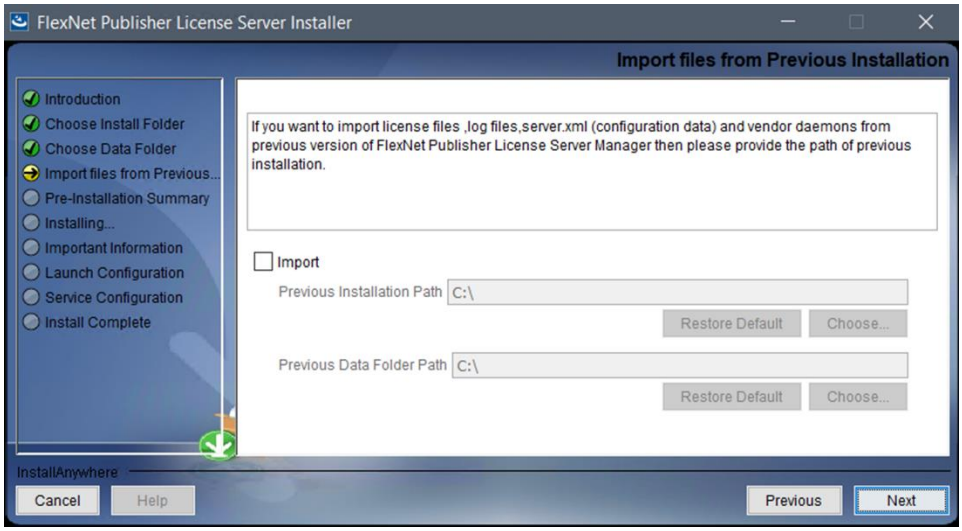

Figure 16: FNPLS Installation Package - DO NOT Import files from Previous

7. The pre-installation summary (see **Figure 17**) is shown before starting the installation with the "Install" button.

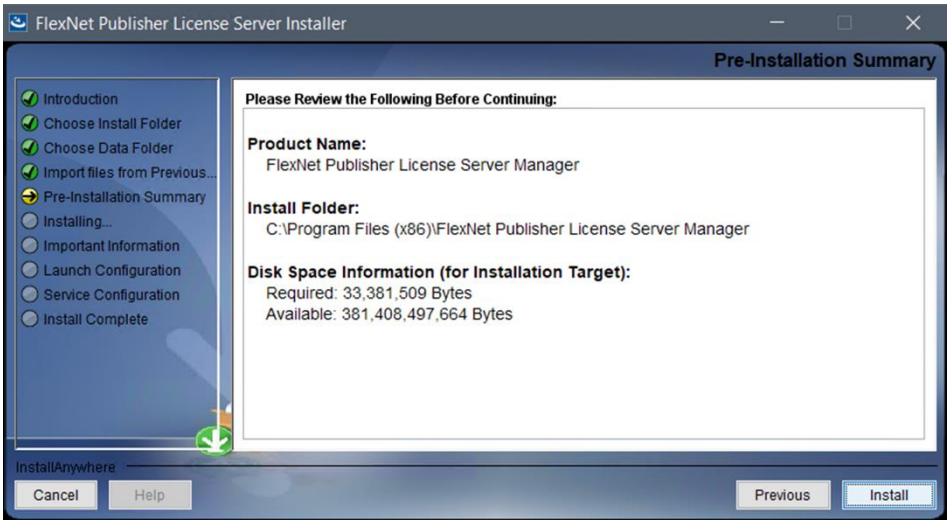

Figure 17: FNPLS Installation Package - Pre-Installation Summary

8. The installation progress bar (see **Figure 18**) provides progress status on the actual server install.

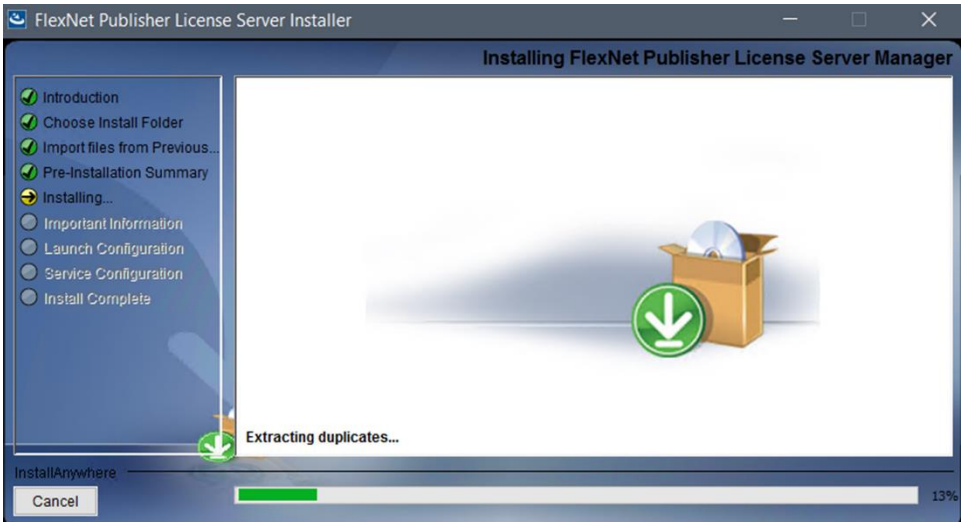

Figure 18: FNPLS Installation Package - Installing

9. Check the box for "Install Visual C++ 2008 Redistributable Package" as shown in **Figure 19** and then use the "Repair" option if this package was installed previously, as shown in **Figure 20**.

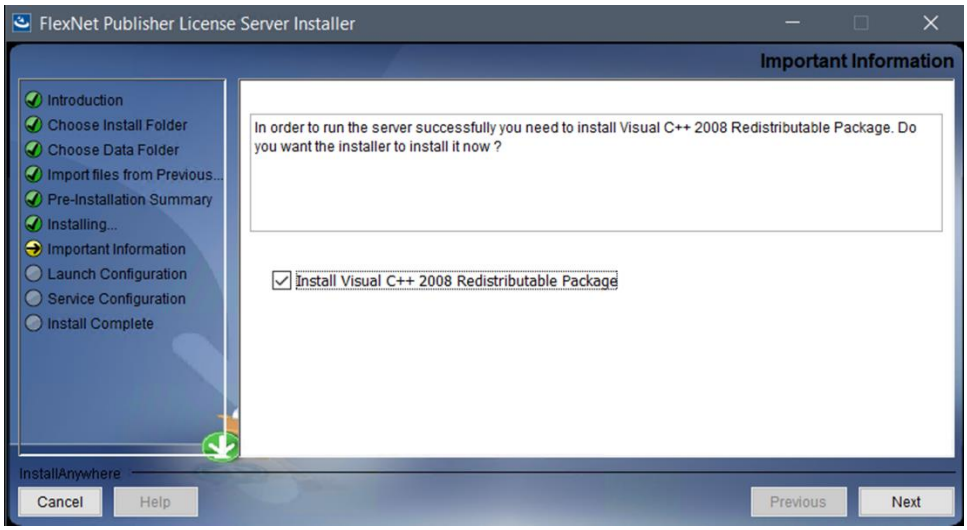

Figure 19: FNPLS Installation Package - Important Information

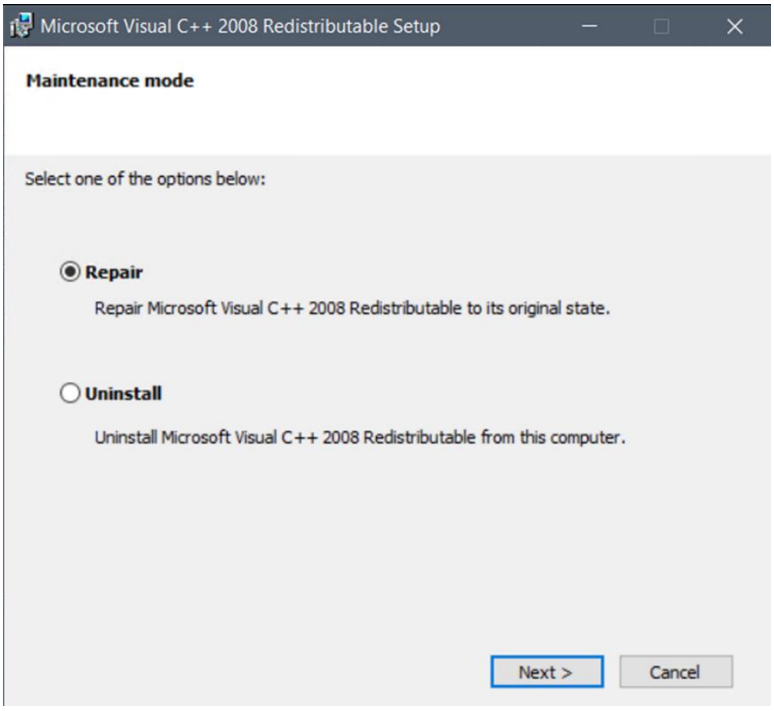

Figure 20: C++ 2008 Redistributable, select "Repair"

10. After the installation is complete, the launch configuration screens (see **Figure 21** and **Figure 22**) provide the first shot at customizing the various ports and settings used by FNPLS.

    a. These settings can be modified later in a variety of ways (i.e. see Section **5.1.1** and Section **7.2**).

    b. The license server port number is distinct from the vendor daemon port which will be configured later. The license server port can be used to acquire licenses if there is only one vendor daemon. If there is more than one vendor daemon, then the vendor daemon port will be required in order to be assured that the correct vendor is queried for a license.

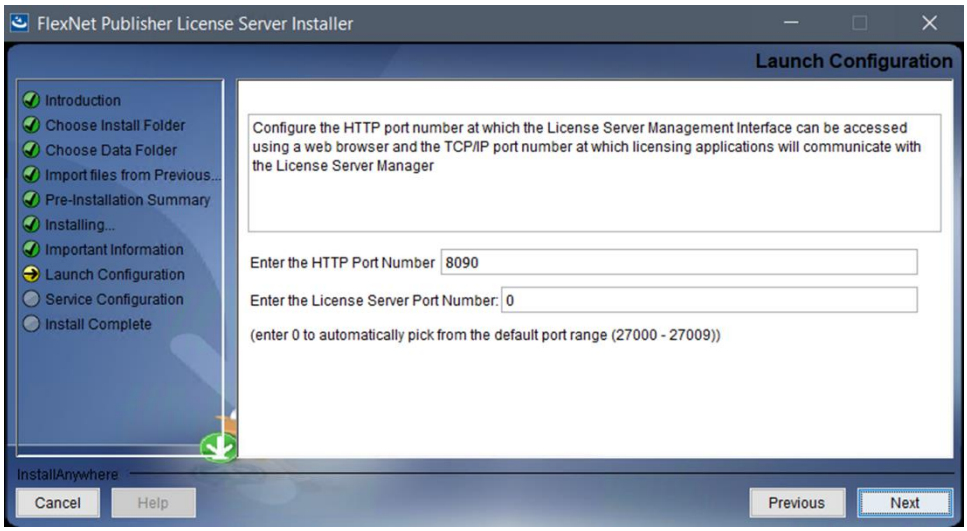

Figure 21: FNPLS Installation Package - Launch Configuration, set FNPLS ports

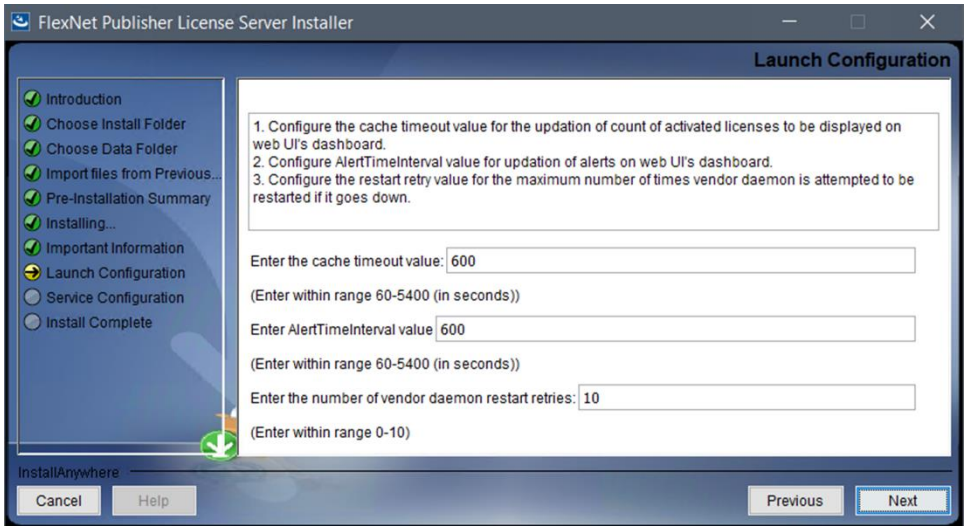

Figure 22: FNPLS Installation Package - Launch Configuration, timeout intervals

11. The final step in the installation package is to configure ***lmadmin*** to start as a Windows operating system service as shown in **Figure 23**.

    a. In installation package versions prior to 11.14.0.1, there was a bug in the install package which kept the "Run as a service" check box from working. For the installation of lmadmin as a service in these earlier versions, the service had to be manually installed using lmadmin.exe from the command line (see Section **7.2**).

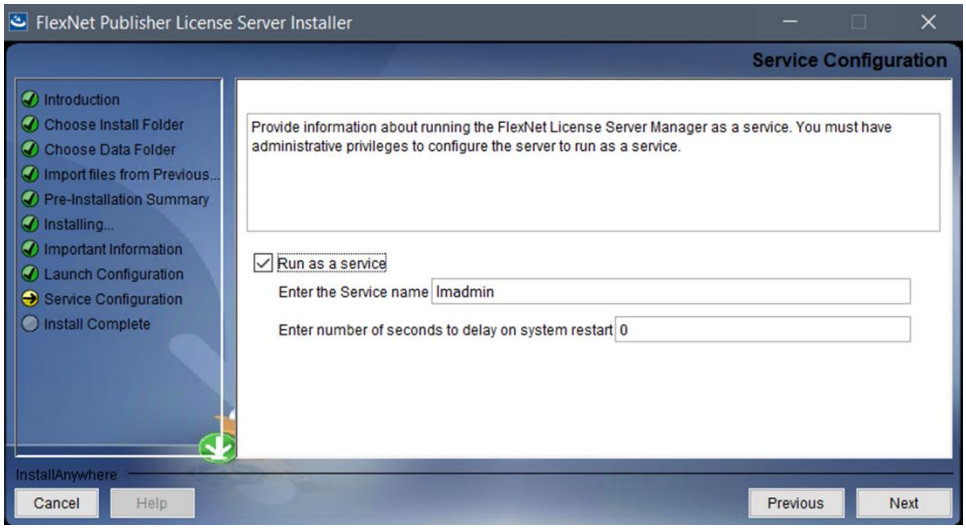

Figure 23: FNPLS Installation Package - Service Configuration

12. A successful install will end with the installation complete dialog shown in **Figure 24**.

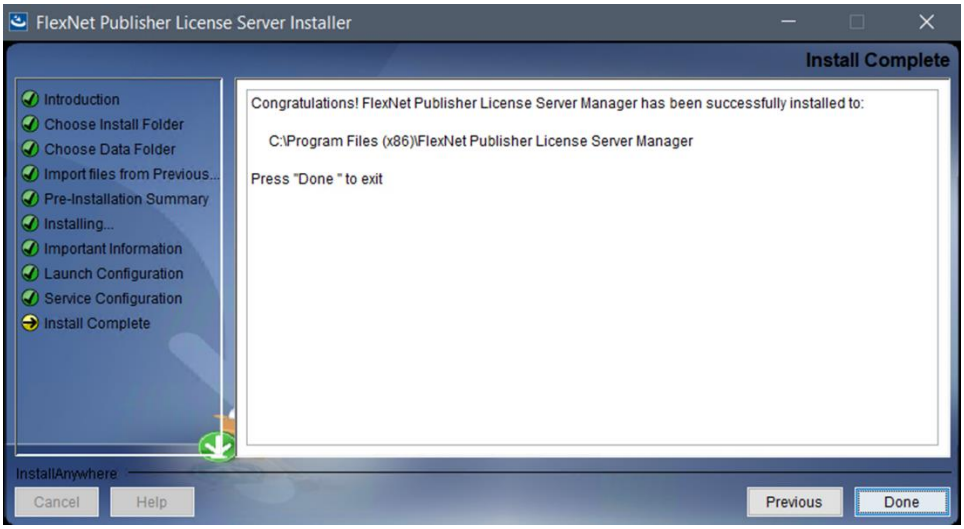

Figure 24: FNPLS Installation Package - Install Complete

13. Start the newly installed/created ***lmadmin*** service. Go to Control Panel | Administrative Tools | Services and look for an "lmadmin" service (as shown in **Figure 25**). If the service is currently stopped, there will be a "Start" link in the upper left.

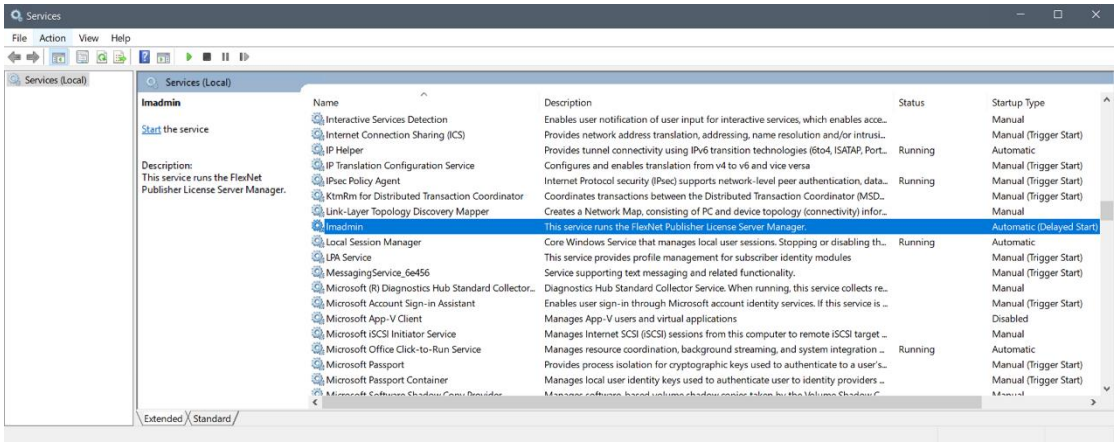

Figure 25: After FNPLS installation is complete, start the lmadmin service

14. After you have successfully started lmadmin (in this case, by starting the service), access the license server management interface. This is also referred to in the GoldSim documentation as the web GUI. The license server management interface, or web GUI, is accessed using a web browser and using the address http://<server>:8090 where <server> is the system name where the license server is running.

    a. localhost:8090 may also work when you are working on the server computer and are not using Internet Explorer as your web browser.

    b. http://<server>:8090 may only work if you have enabled firewall access.

    c. Additionally, you can specify a custom port number (see **Figure 21**); 8090 is the default. If you specified a custom port number, then use this port in place of 8090 in the preceding discussion.

15. At this point, the web GUI Dashboard screen should not show any seats or licenses available (see **Figure 26**) because the vendor daemon has not been installed into FNPLS at this time.

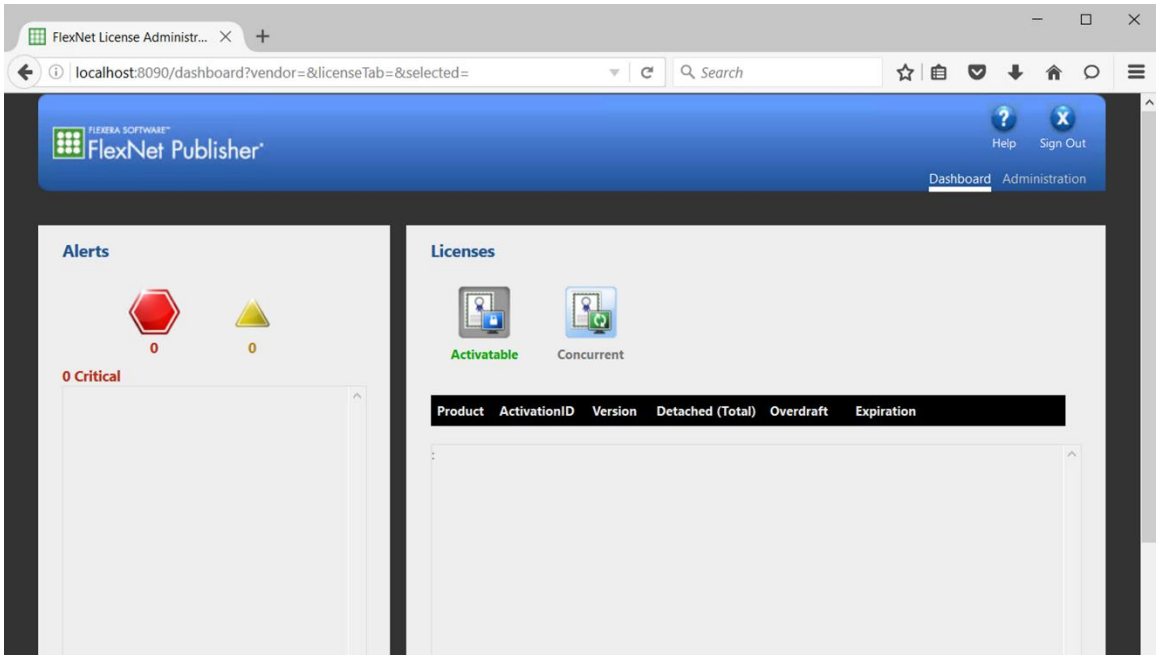

Figure 26: License server management interface, or web GUI, Dashboard after clean install

16. Use the "Administration" link in the top right of **Figure 26** to access the Administration portion of the license server management interface. You will be required to login to the Administration portion of the web GUI (see **Figure 27**). On your initial access, you can use the default username and password of "admin" (but without the quotes). You will be required to change this immediately (see **Figure 28**).

    a. You have now configured the "admin" account by adding a new password. GoldSim will **NOT** know what the "Password" is for your license server.

    b. Only people who will administer the license server need to be able to login to the "Administration" portion of the license server management interface. GoldSim users who acquire seats from the license server do not need to access the license server management interface in general and the "Administration" portion in particular.

    c. If you need to reset or modify existing user credentials, open a command prompt, change the current directory to EXISTING_INSTALL_DIR, and use `lmadmin.exe -help` to see the listing of available user modification commands. Use one of the listed commands for your modifications.

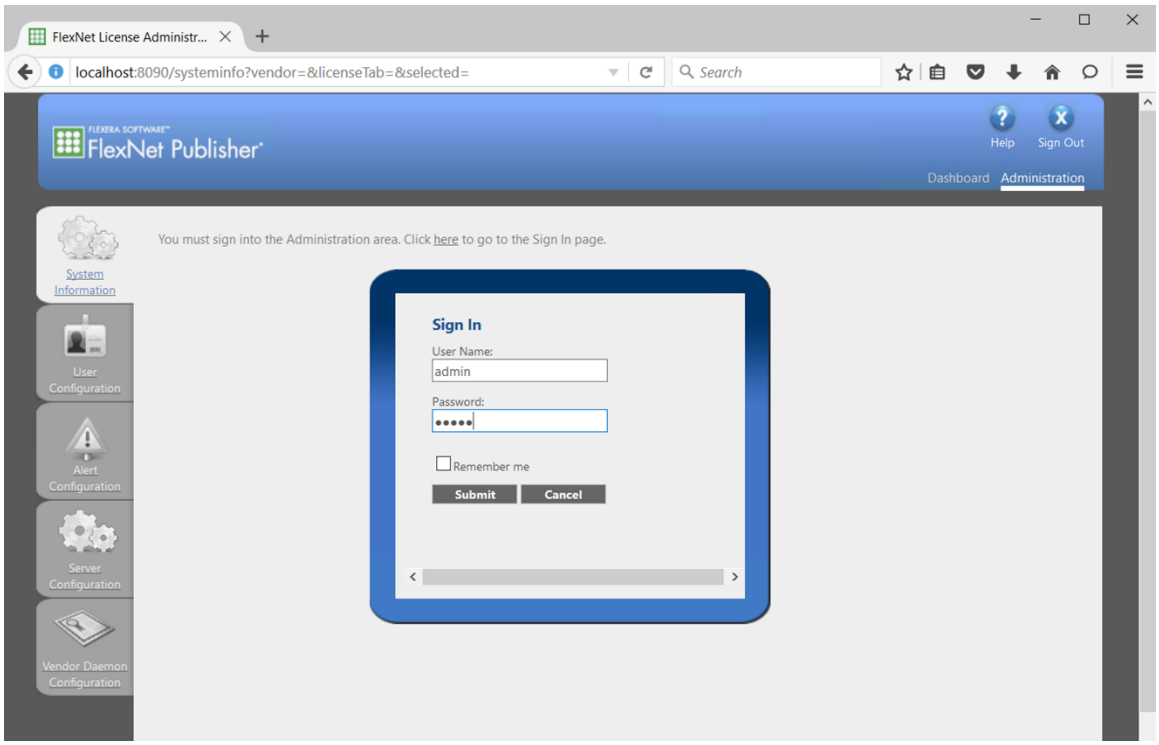

Figure 27: Web GUI Administration requires login

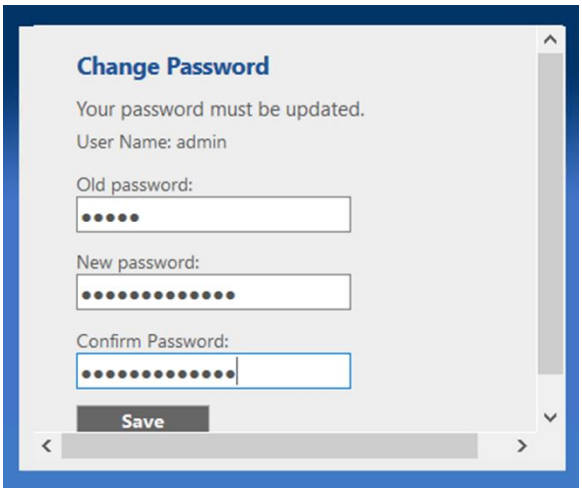

Figure 28: A password change is required on first login

17. At this point, you can see, and change if desired, the launch configuration items that you set during the install. **Figure 31** and **Figure 32** show where to find this information.

18. Finally, when you are done with the "Administration" portion of the license server management interface, use the "Stop Server" button, shown in **Figure 31**, to stop ***lmadmin***. Close the web browser and continue with installing the vendor daemon in Section **4.1**.

3.2.2 Existing Installation Upgrade

The current FNPLS version for this document is ***11.14.1.1***. This version provides a significantly different installation experience relative to previous FNPLS versions. Ideally one outcome of these changes will be the generation of a feasible upgrade path for future versions. In the past, the "upgrade" installation for FNPLS was not really an in place upgrade but was better characterized as a new installation in a new install directory where select files from the original installation can be imported as part of the installation or can be copied over to the new installation later if the import does not work seamlessly.

For FNPLS version ***11.14.1.1***, GTG recommends a clean install. This version generally installs files to different locations than previous FNPLS versions. Section **3.2.2.1** walks you through the collecting the minimum amount of required information prior to starting to install ***11.14.1.1*** for the case where there is an existing FNPLS (with version prior to ***11.14.1.1***) that is being upgraded. Section **3.2.2.2** takes you through the actions that need to be completed prior to starting to install ***11.14.1.1***. Once the preparation information collection and clean-up actions are complete, you are ready to go through the new/clean installation steps in Section **3.2.1**.

- **MAKE SURE** to use the settings recorded in Section **3.2.2.1** for the new installation.

Note: The upgrade installation instructions will likely change again for versions after ***11.14.1.1***. Please always refer to the most current documentation before starting an FNPLS install or upgrade.

3.2.2.1 Pre-Upgrade Information

Before starting the FNPLS upgrade, there are a number of important items that need to be determined concerning the existing installation. You need to know the following before starting.

1. The installation directory for the existing FlexNet Publisher License Server (i.e. location of the lmadmin.exe file). Hereafter, this is referred to as EXISTING_INSTALL_DIR.

2. The location of any vendor daemon files and executables that you will need to re-install vendor daemons into the new FNPLS.

3. If you have installed/configured ***lmadmin*** as an operating service so that it starts and stops automatically with the computer.

4. The existing port settings for web GUI, ***lmadmin***, and vendor daemon access.

Details for determining this information are provided below.

1) Determine the installation directory for the existing FlexNet Publisher License Server (i.e. determine the path for EXISTING_INSTALL_DIR). This will be the sub-directory of "C:\Program Files\" which contains the lmadmin.exe executable.

   a) The default directory is usually "C:\Program Files\FlexNet Publisher License Server Manager". Confirm that there is an lmadmin.exe file in this directory if this directory exists.

b) Otherwise, search for lmadmin.exe on the server computer to find the installation directory.

2) Make sure that you have or know where to find all required vendor daemon and license files.

a) For GoldSim, this is fairly easy. These files are always in the GLSActUtil installation directory which is usually something like: "C:\Program Files (x86)\GTG\GoldSim License Server Activation Utility\GTG".

b) If you are using this license server for other software vendors, then you need to figure out what is required to re-install the vendor daemons and license files for these other vendors.

Note: You will need to re-install all vendor daemons after finishing the installation of FNPLS. Chapter 4 provides instructions for installing the GoldSim vendor daemon.

3) Determine if there is an operating system service for ***lmadmin***. Typically, this service would be named "lmadmin" so that you can go to Control Panel | Administrative Tools | Services and look for an "lmadmin" service (as shown in **Figure 29**). Note that you can name this service anything that you want (as long as it does not conflict with an existing service). Consequently, it is possible that the service is named something else; however, in this case you should remember what you called it.

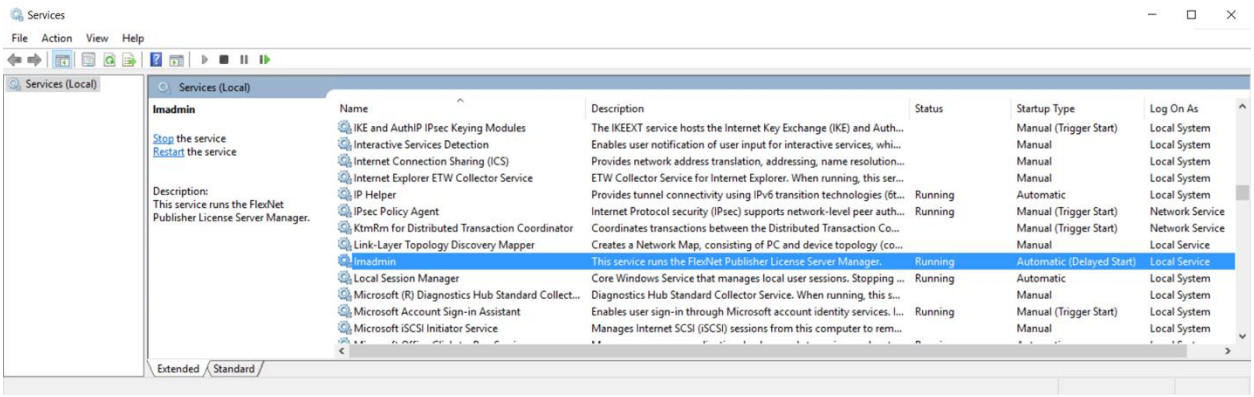

Figure 29: lmadmin Windows operating system service

4. Determine the port settings for web GUI, ***lmadmin***, and vendor daemon access. You will want to know what port numbers are used for these items so that you can have the upgraded FNPLS use the same ports. This will make it so client software can still access the upgraded FNPLS without modification.
    - All of the port settings can be determined using the "Administration" portion of the license server management interface, or web GUI.

    - The web GUI is accessed using a web browser and using the address http://<server>:8090 where <server> is the system name where the license server is

running (localhost:8090 may also work when you are working on the server computer). http://<server>:8090 may only work if you have enabled firewall access.

- Additionally, the port number shown, i.e. 8090, assumes that the default port number is used. If this is not the case, then use the custom port number that you specified when FNPLS was originally installed (see **Figure 21**).

- Login to the "Administrator" portion of the web GUI using the "Administration" link in the top right (see **Figure 30**). You need to give a "User Name:" and "Password:".

- These are items configured by your company and GoldSim will **NOT** know what the "User Name:" and "Password" are for your license server.

- If you need to reset or modify existing user credentials, open a command prompt, change the current directory to EXISTING_INSTALL_DIR, and use `lmadmin.exe -help` to see the listing of available user modification commands. Use one of the listed commands for your modifications.

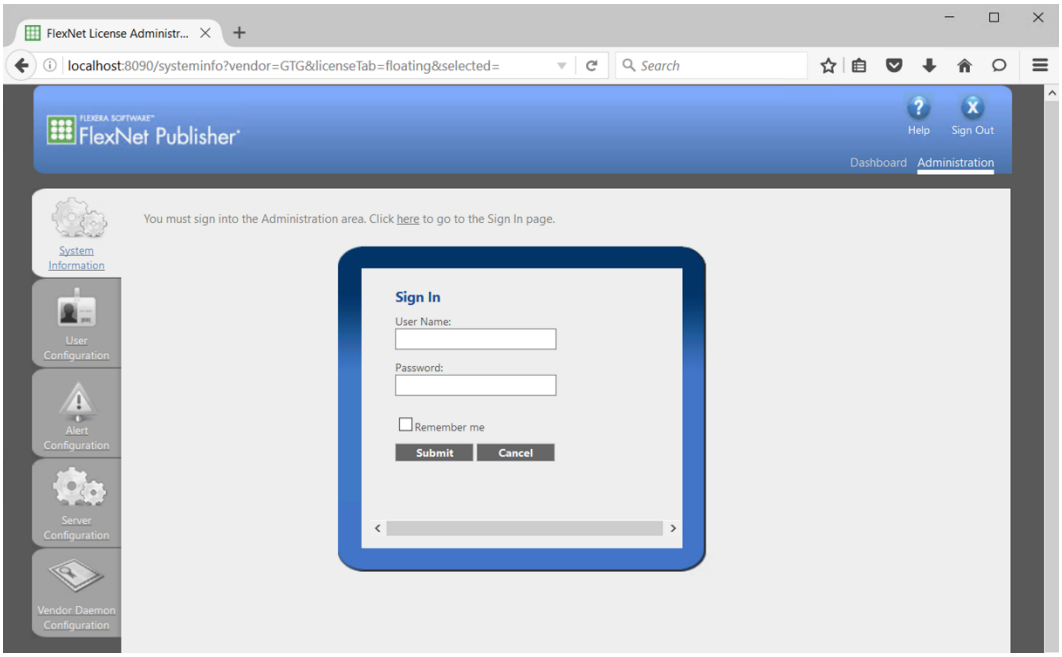

Figure 30: Sign In to the "Administration" portion of the portal

a. Determine the HTTP port used for web GUI access. This port number can be found in the HTTP Port field of the "Web Server Configuration" section of the "Server Configuration" tab as shown in **Figure 31**.

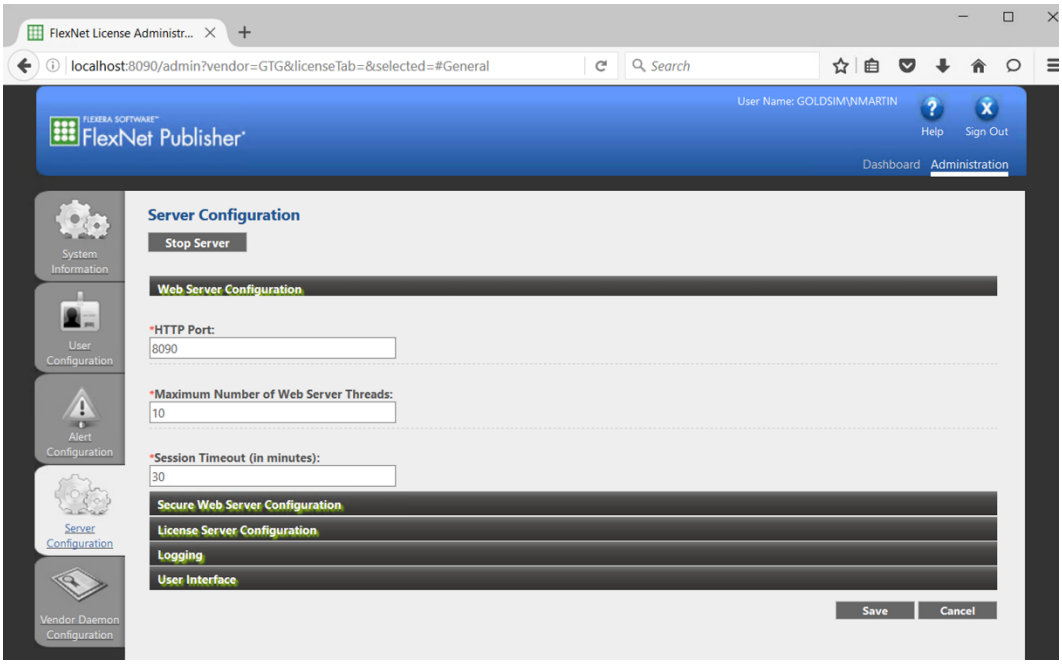

Figure 31: HTTP Port is found in Web Server Configuration section of Server Configuration

b. Determine if a specified port is used for ***lmadmin*** or if the standard port range is used. This port number can be found in the License Server Manager Port setting of the "License Server Configuration" section of the "Server Configuration" tab as shown in **Figure 32**. The standard port range is 27000-27009.

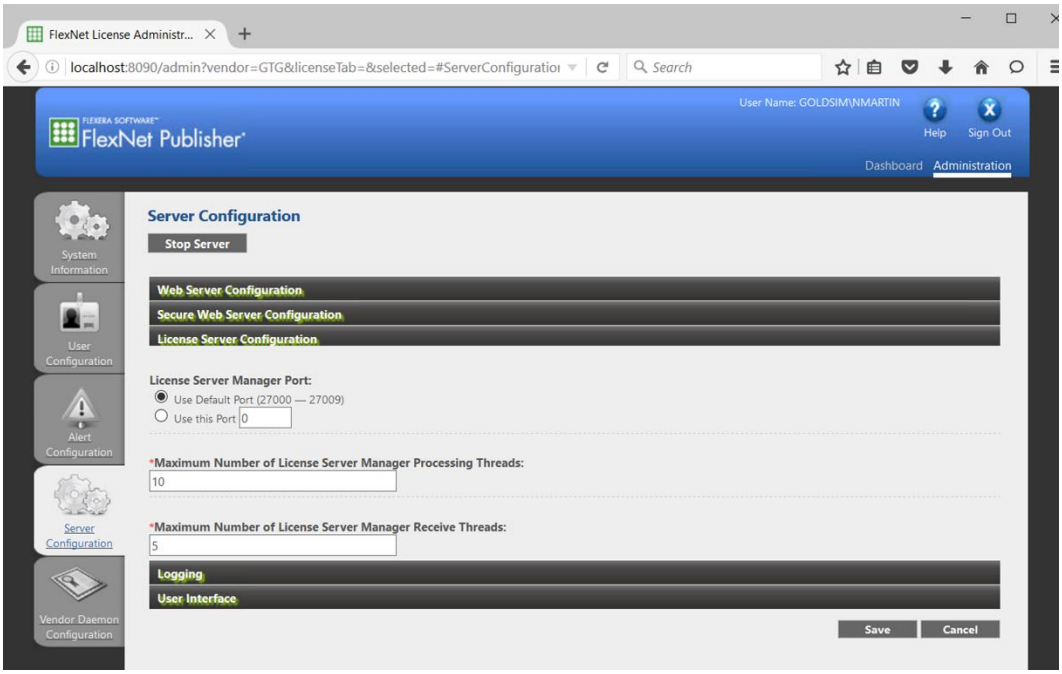

Figure 32: lmadmin Port is found in License Server Configuration section of Server Configuration

c. Determine if a specified port is used for each vendor daemon. This port number can be found in the Vendor Daemon Port setting of the "Vendor Daemon Configuration" tab as shown in **Figure 33**.

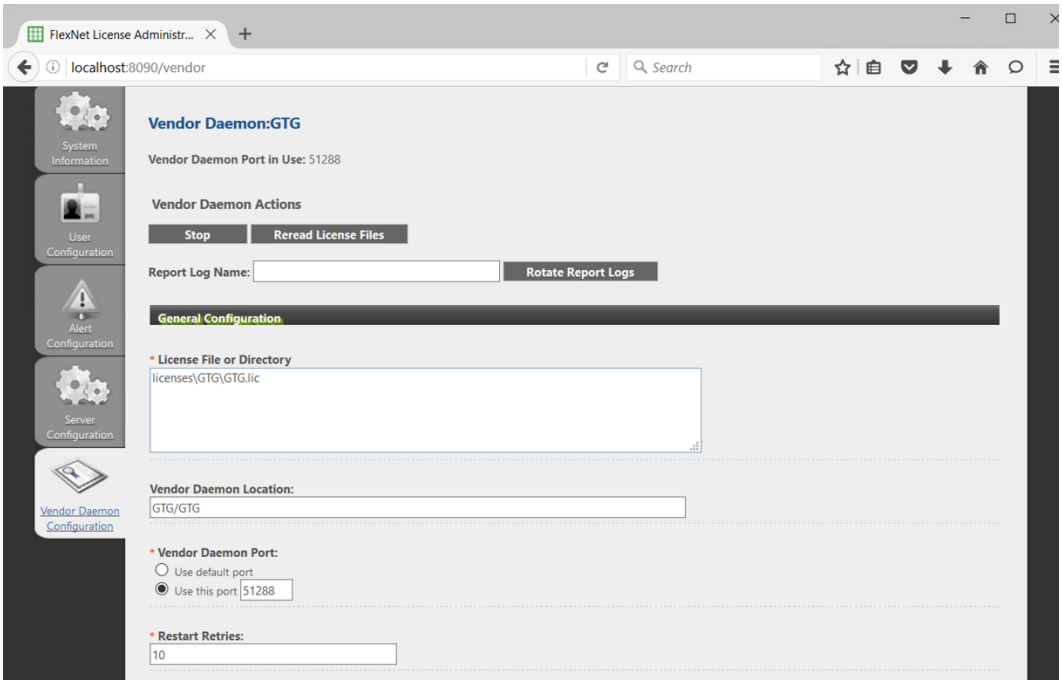

Figure 33: Vendor Daemon Port setting is found in the Vendor Daemon Configuration

d. Also, check your firewall settings to see if port values are used in firewall rules. If port values are used and the upgraded license server uses the same ports, then the firewall rules should still be effective. If the firewall rules specify an executable rather than a port, then you will have to update the firewall rules even if you use the same port numbers.

3.2.2.2 Pre-Upgrade Actions

Now that you know the pre-upgrade information items. Do the following based on your newly acquired knowledge.

1) If there is an operating system service installed/configured for ***lmadmin***, then stop this service if it is currently running. There are at least two ways to stop this service.

   a) Go to Control Panel | Administrative Tools | Services. Select the ***lmadmin*** service. Use the "Stop" link in the upper left (see **Figure 29**).

b) Access the license server management interface. This is also referred to in the GoldSim documentation as the web GUI. The license server management interface, or web GUI, is accessed using a web browser and using the address http://<server>:8090 where <server> is the system name where the license server is running (localhost:8090 may also work when you are working on the server computer). http://<server>:8090 may only work if you have enabled firewall access. Additionally, you can specify a custom port number; 8090 is the default. If you specified a custom port number, then use this port in place of 8090 in the preceding discussion.

i) Login to the "Administrator" portion of the web GUI using the "Administration" link in the top right (see **Figure 30**). You need to give a "User Name:" and "Password:".

ii) These are items configured by your company and GoldSim will **NOT** know what the "User Name:" and "Password" are for your license server.

- If you need to reset or add user credentials, open a command prompt, change the current directory to EXISTING_INSTALL_DIR, and use `lmadmin.exe -help` to see the listing of available user modification commands. Use one of the listed commands for your modifications.

iii) Select the "Server Configuration" tab along the left-hand side of the screen and then use the "Stop Server" button at the top (see **Figure 34**).

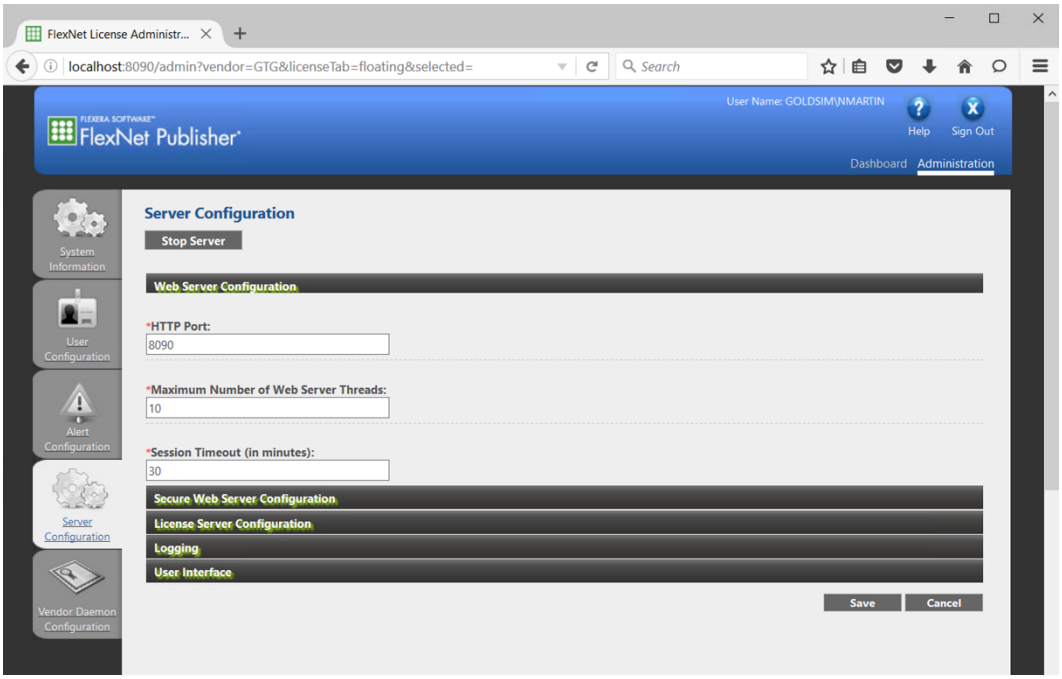

Figure 34: Use the "Server Configuration" tab and "Stop Server" button to stop lmadmin

2) If there is an operating system service installed/configured for ***lmadmin***, then delete/remove this service as shown in **Figure 35**.

   a) Open an "Administrator Command Prompt".

   b) Make the current directory, the EXISTING_INSTALL_DIR.

   c) Run the command
   `lmadmin.exe -removeService lmadmin`

   - Use the name of your service in place of "lmadmin" if you named the service differently.

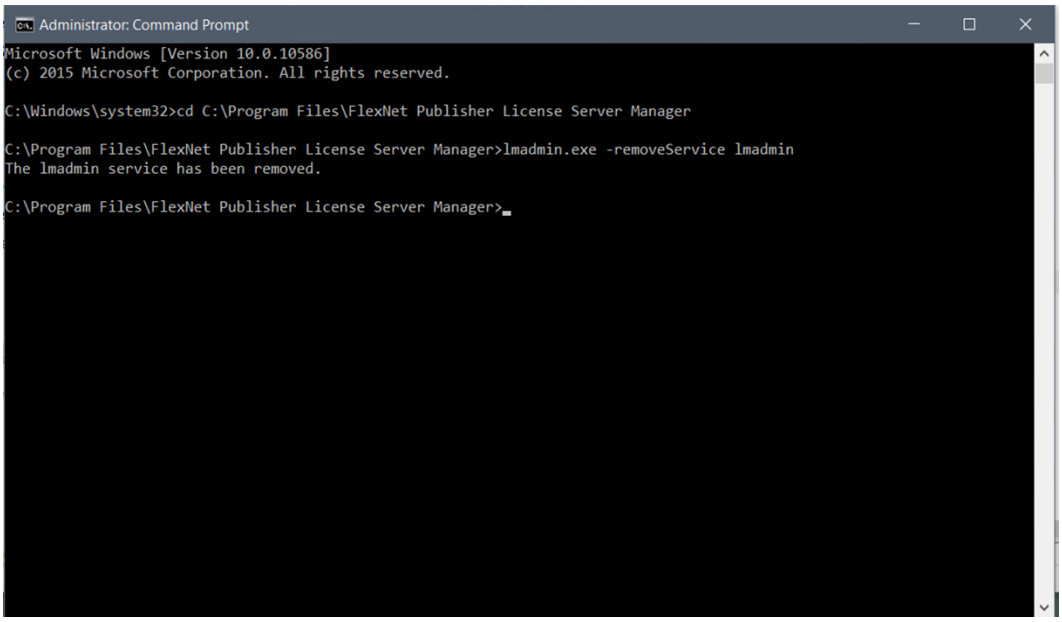

Figure 35: Delete/remove the lmadmin operating system service

3) Uninstall the existing FNPLS/lmadmin using "EXISTING_INSTALL_DIR\uninstall\Uninstall FlexNet Publisher License Server Manager.exe".

4 GTG.exe – GoldSim Vendor Daemon

The GoldSim vendor daemon is essentially a plugin for FNPLS that mediates between the Flexera license server and any GoldSim software licenses installed/fulfilled on the license server machine. At this point in the process:

- FNPLS should be installed and functional but stopped;
- ***GLSActUtil*** should be installed and functional but closed; and,
- A GoldSim Concurrent Network license should be activated/fulfilled on the license server machine with a status of active and fully trusted.

Everything that is needed to implement the vendor daemon has then been installed on the license server computer. Follow the instructions in Section **4.1** to move the vendor daemon-related files to the correct locations for FNPLS and to complete the initial, basic configuration of the license server.

4.1 Basic Vendor Daemon Installation and Configuration

1. Copy the GTG directory installed as part of the GoldSim License Server Activation Utility (see **Figure 12**) to the FNPLS install directory (see **Figure 14**) as shown in **Figure 36**.

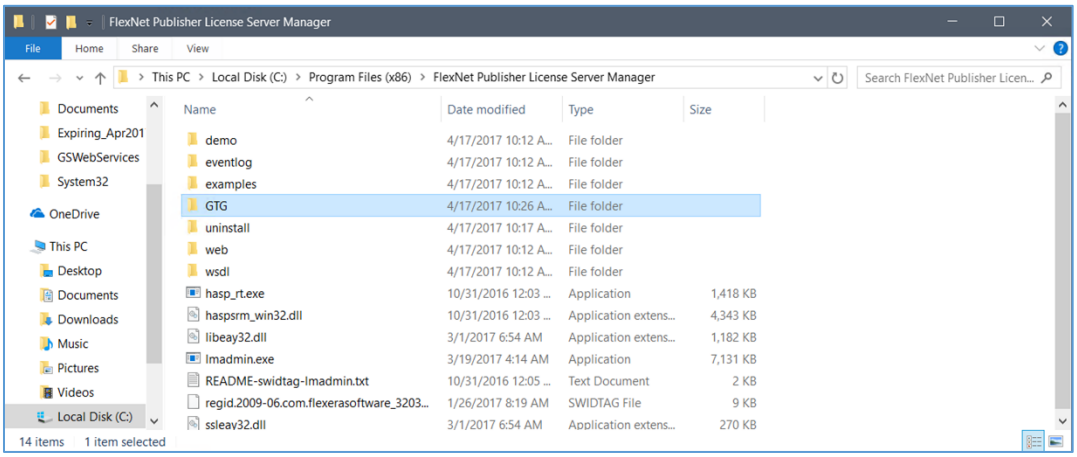

Figure 36: FNPLS Install Directory after copying GTG folder from *GLSActUtil* Install Directory

2. This GTG directory should contain four (4) files as shown in **Figure 37**.

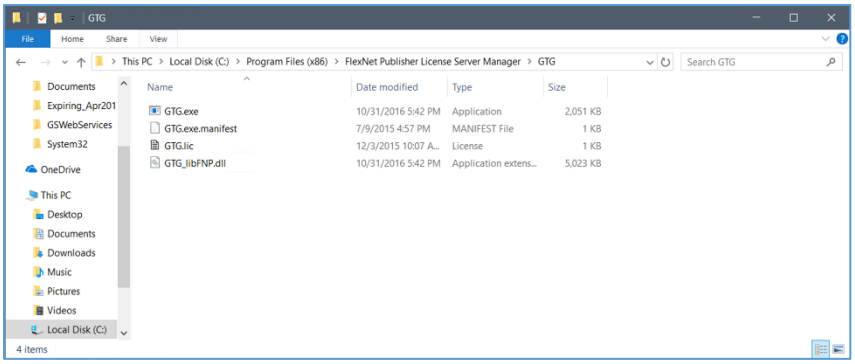

Figure 37: GTG directory contents

3. Start the ***lmadmin*** service; this starts the license server. Go to Control Panel | Administrative Tools | Services and look for an "lmadmin" service (as shown in **Figure 25**). If the service is currently stopped, there will be a "Start" link in the upper left.

4. Access the license server management interface. This is also referred to in the GoldSim documentation as the web GUI. The license server management interface, or web GUI, is accessed using a web browser and using the address http://<server>:8090 where <server> is the system name where the license server is running.
    a. localhost:8090 may also work when you are working on the server computer and are not using Internet Explorer as your web browser.

    b. http://<server>:8090 may only work if you have enabled firewall access.

    c. Additionally, you can specify a custom port number (see **Figure 21**); 8090 is the default. If you specified a custom port number, then use this port in place of 8090 in the preceding discussion.

    d. At this point, the web GUI Dashboard screen should not show any seats or licenses available (see **Figure 26**) because the vendor daemon has not been installed into FNPLS at this time.

    e. Use the "Administration" link in the top right of the screen (see **Figure 26**) to access the Administration portion of the license server management interface. You will be required to login to the Administration portion of the web GUI (see **Figure 27**).

    f. If you need to reset or modify existing user credentials, open a command prompt, change the current directory to EXISTING_INSTALL_DIR, and use `lmadmin.exe -help` to see the listing of available user modification commands. Use one of the listed commands for your modifications.

5. Import a license to install the Vendor Daemon.

a. Use the “Vendor Daemon Configuration” tab along the right and the “Import License” button at the top (see **Figure 38**).

b. Select the file “GTG.lic” in the GTG folder which was just copied to FNPLS install directory (see **Figure 37**). Make sure that the option “Overwrite License File on License Server” is selected as shown in **Figure 39**.

c. The successful import messages should be shown (see **Figure 40**).

d. The newly imported vendor daemon status should be “Up” as shown in **Figure 41**.

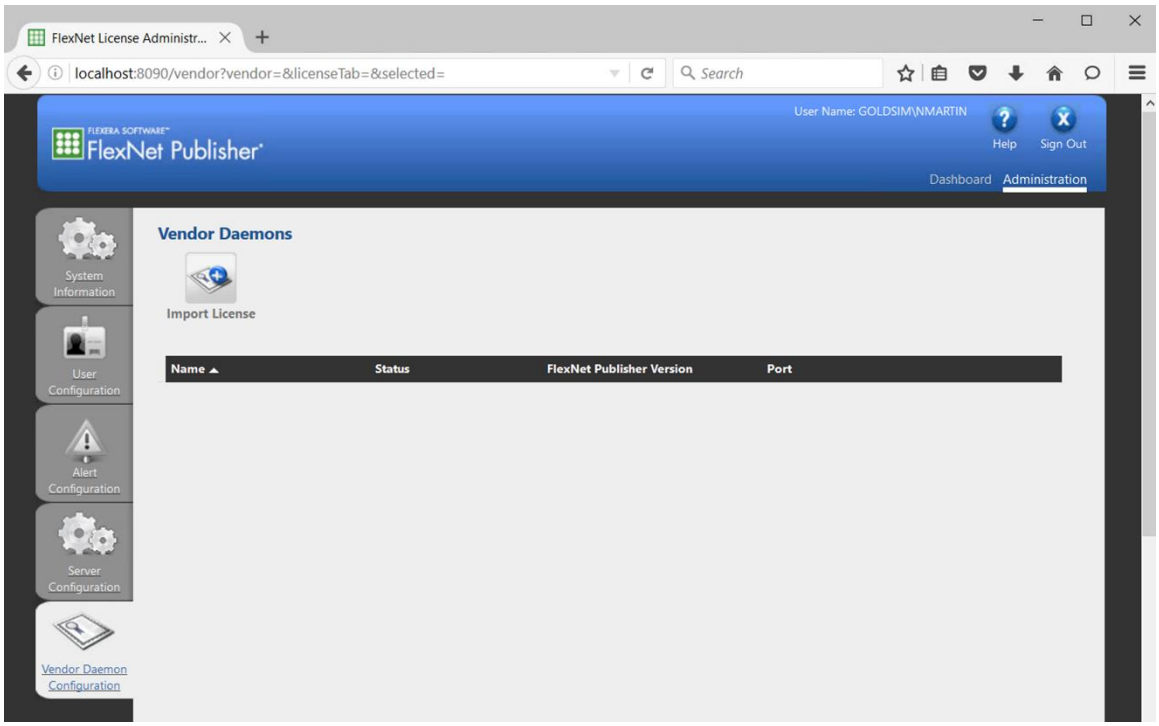

Figure 38: Use the "Vendor Daemon Configuration" tab at the left to install a vendor daemon

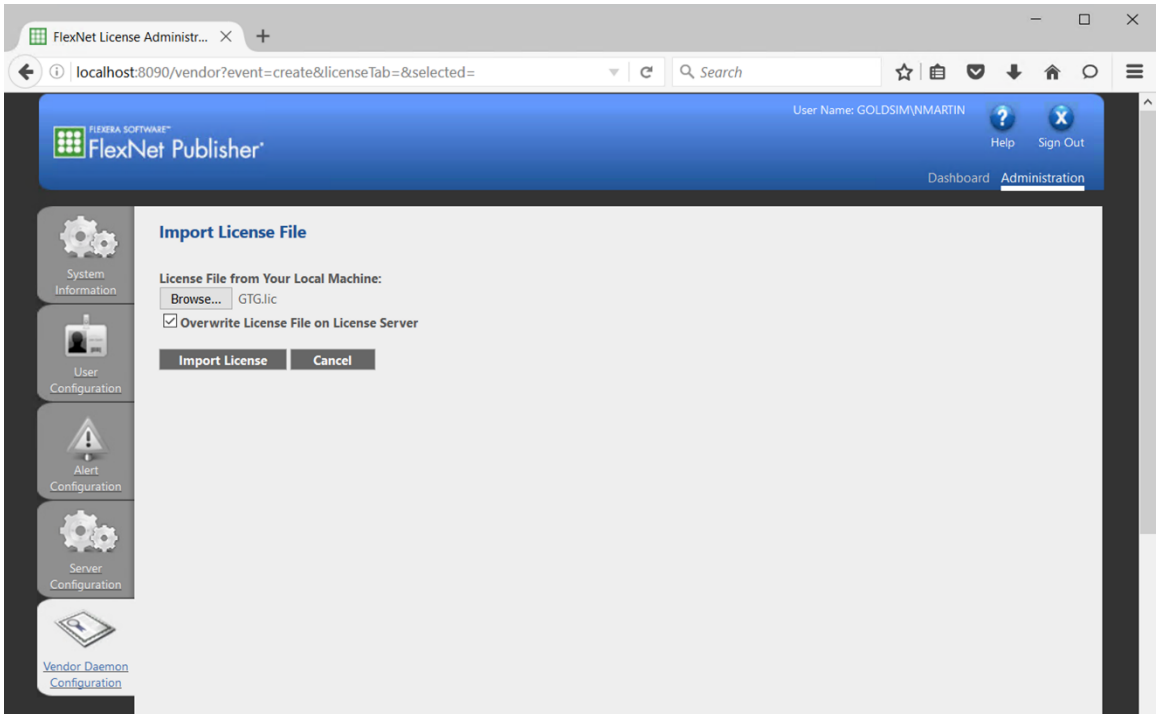

Figure 39: Use the "Overwrite License File on License Server" option

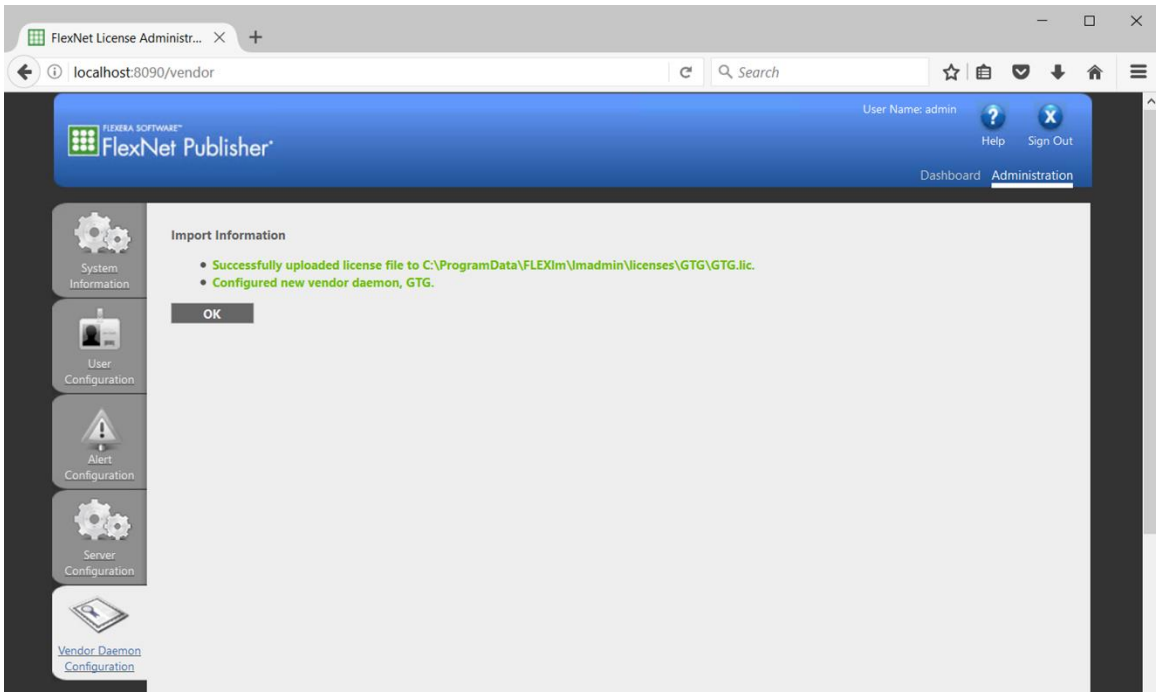

Figure 40: Successful vendor daemon import

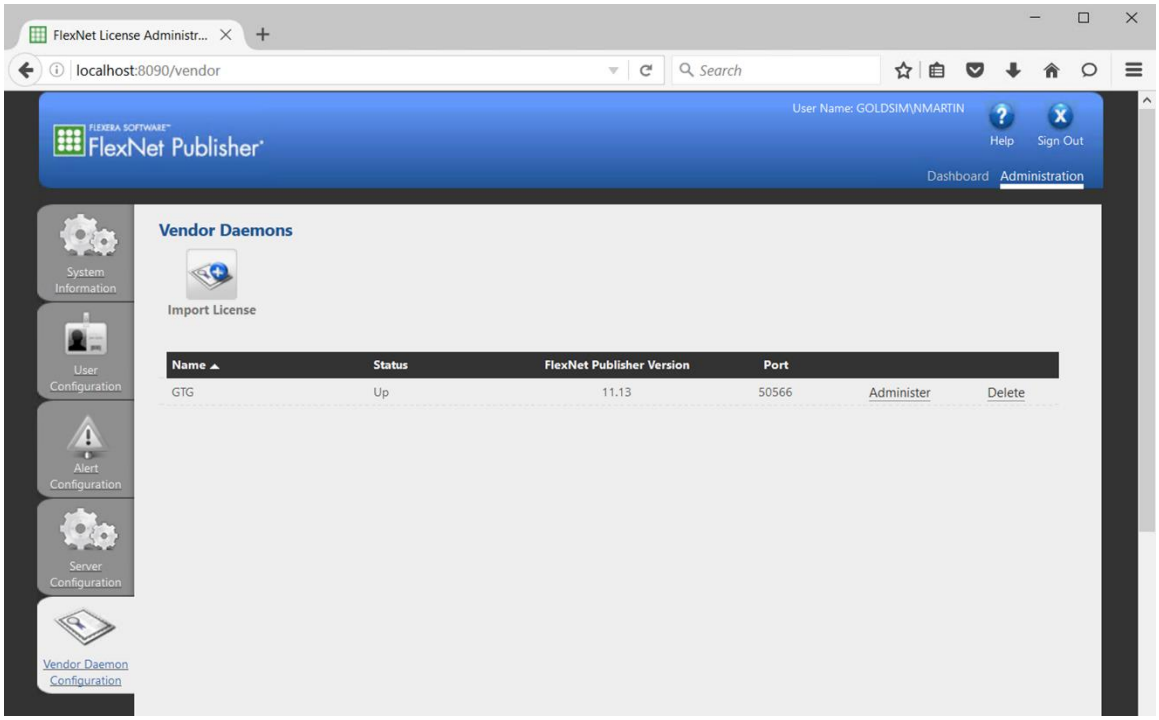

Figure 41: Newly imported vendor daemon running

6. At this point, you will want to fix the "Port" value shown in **Figure 41**, if you will be using port-based firewall rules.
    a. Use the "Administer" link shown in **Figure 41** and then specify a port value using the "Use this port" option under "Vendor Daemon Port" as shown in **Figure 42**.

    b. If you do not have a pre-selected port number to use, you can specify that the existing port number is always used. If you use the "Use default port" selection, then this port number may change each time that the vendor daemon is re-started.

    c. Remember to use the "Save" button at the bottom to update and save the configuration for the vendor daemon.

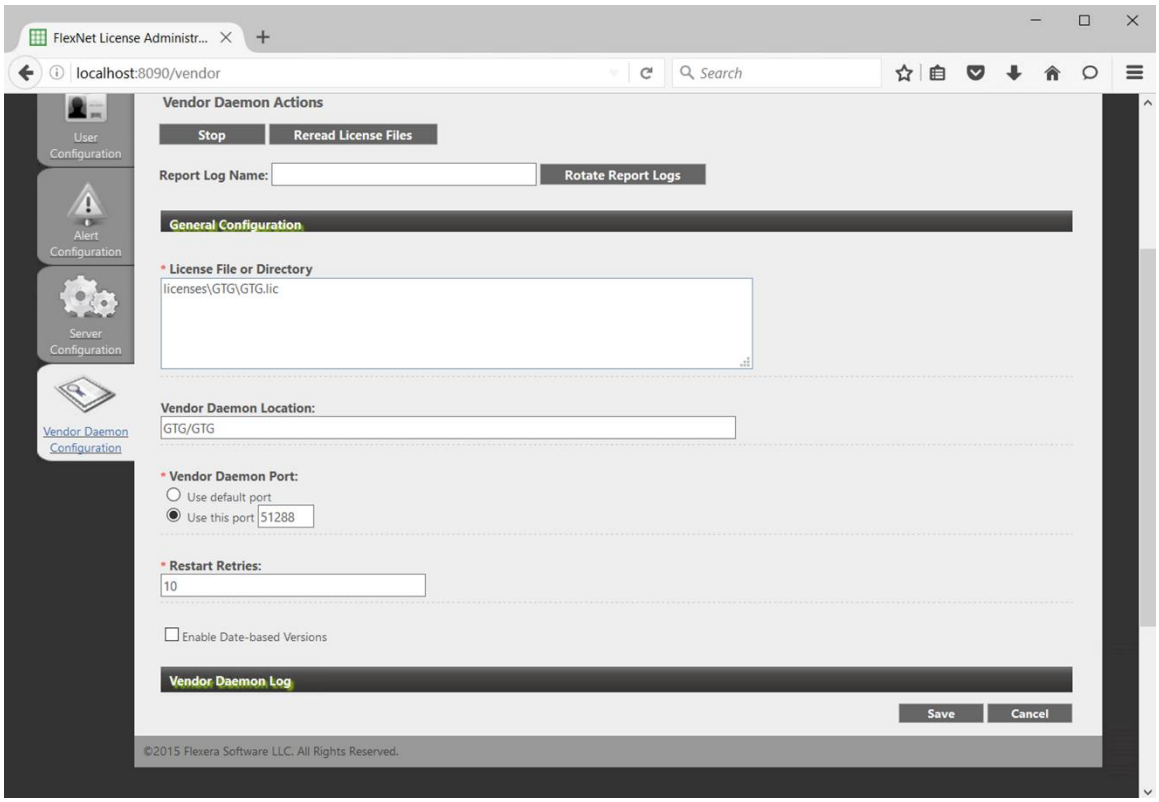

Figure 42: Vendor daemon administration

7. Use the "Stop" button shown at the top of **Figure 42** to stop the vendor daemon. Then navigate to the "System Information" tab, shown on the left side. Next, navigate back to the "Vendor Daemon Configuration" tab and the vendor daemon will be shown as "Down".

8. Use the "Administer" link (see **Figure 41**) and then the "Start" button to start the vendor daemon again. Navigate to the "System Information" tab, shown on the left side and then navigate back to the "Vendor Daemon Configuration" tab and the vendor daemon should be shown as "Up" and should be using the specified port value.

9. Use the "Dashboard" link at the top right to see the available licenses.

10. Test the license server using a GoldSim client installed on the license server machine.
    a. Stop ***lmadmin*** and all running license servers on the server machine.

    b. Install a GoldSim version on the server machine. This installation can impact ***lmadmin*** which is why it was stopped in the previous step.

    c. Make sure to install a version that you are entitled to under your GoldSim Concurrent Network entitlement which was fulfilled/activated in Section **2.1**.

d. Make sure that there are no “standalone” GoldSim licenses fulfilled on this machine.

e. Start ***lmadmin***.

f. Start GoldSim. You should get the “GoldSim Licensing” splash screen shown in **Figure 43**.

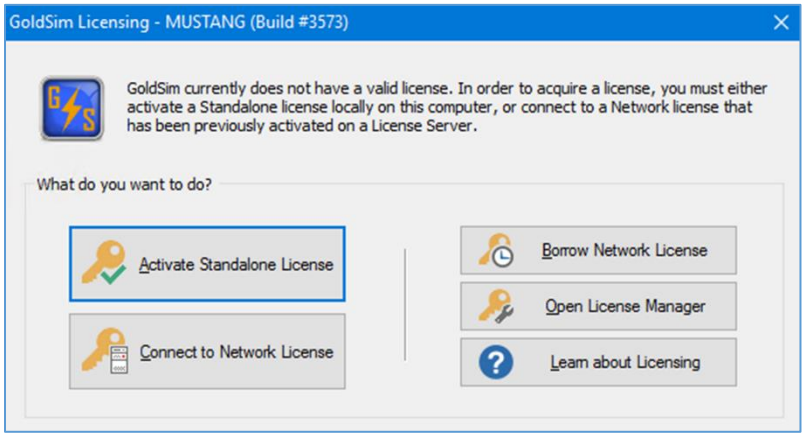

Figure 43: GoldSim Licensing splash screen

g. Use the “Connect to Network License” to get the “Network License Configuration” dialog shown in **Figure 44**. For the Licenser Server: field, enter the license server using the port@computer_name.domain format as shown in **Figure 44**.

h. The machine that was used to develop this example procedure was named isq-v-win10n.goldsim.local. The vendor daemon port to use was set to 56614 (in the example shown in **Figure 42** the port was set to 51288).

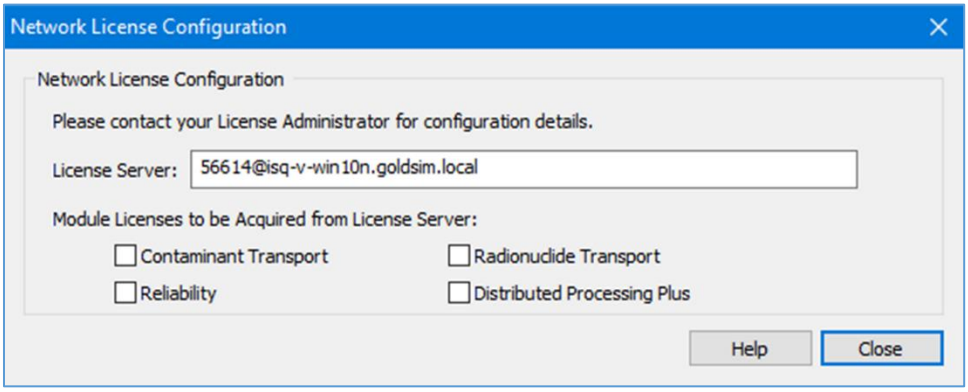

Figure 44: Network License Configuration dialog

i. The GoldSim software program should now open to a blank model. Go to Help | Licensing to open the "GoldSim Licensing" dialog and to confirm the license check-out as shown in **Figure 45**.

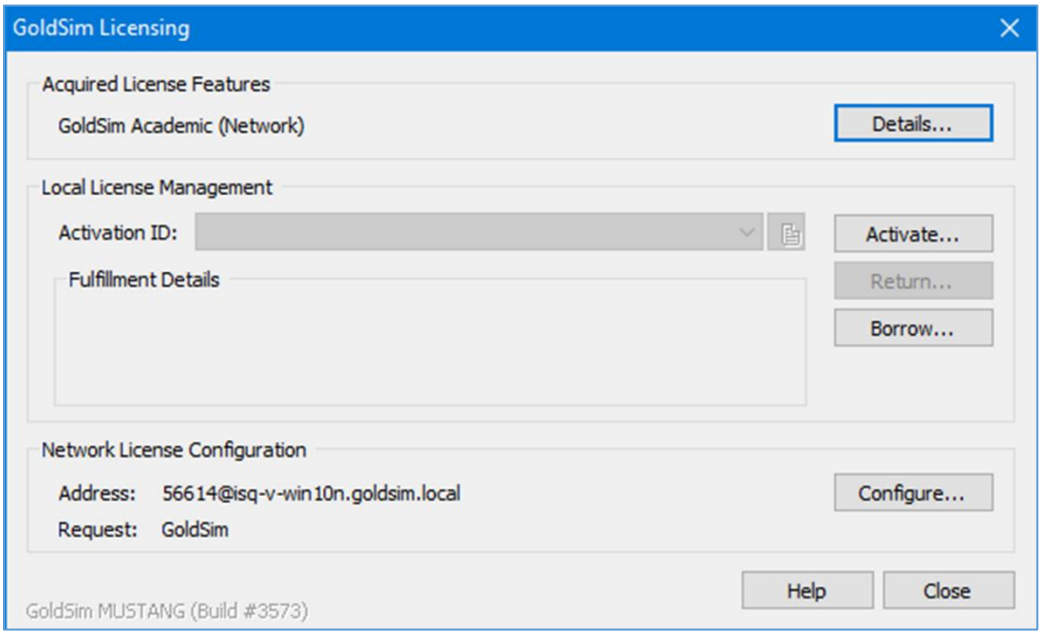

Figure 45: "GoldSim Licensing" dialog showing the successful check-out of a network license

11. Test the license server using GoldSim installed on client computer (i.e. different machine) on the same local area network (LAN) and in the same subnet as the license server computer.
    a. Install a GoldSim version on the client computer.

    b. Make sure to install a version that you are entitled to under your GoldSim Concurrent Network entitlement which was fulfilled/activated in Section **2.1**.

    c. Make sure that there are no "standalone" GoldSim licenses fulfilled on this machine. Standalone (i.e. "Desktop" or "Enterprise" licenses) will always take precedence over network licenses.

    d. Repeat Steps **10.f** through **10.i** from above.

    e. If you are unable to check-out a license from the client machine on the same network turn off the firewalls on both the client machine and the server machine and try again.

4.2 Next Steps

A functioning GoldSim license server has been created by successful completion of the steps in Sections **2**, **3**, and **4**.

- Review Section **5** so that you know what to expect in terms of operations and ongoing maintenance.

- See Section **6** for information on borrowing a license from this license server.

- It is likely that quite a bit of advanced configuration and customization of the license server will be desired. For example, the following items are typical advanced configuration considerations.

    - There will likely be some firewall configuration necessary on both the client machines and the license server machine so that the firewalls do not need to be inactivated to serve licenses. See Section **7.7** for some discussion of this configuration.

    - There is only one "user" account configured for the FNPLS web GUI interface which is the "admin" account. It is likely that you will want to add additional users maybe even additional users of different types. See Section **7.3** for information on adding users.

    - The license server currently has the default configuration for license server capabilities as well as for access and control. There may be some desire to customize this. See Section **7** for more information.

    - It may be desirable to institute detailed license usage tracking. See Section **7.4.1** for information on this feature.

5 Basic License Server Management and Operation

After the GoldSim license server is functioning (i.e. after completion of Section **4.1**), there is typically little that needs to be done in terms of daily or weekly management. There are some license maintenance tasks that will be required on an annual basis. Additionally, basic operation considerations typically involve checking license server status and setting up client machines to check-out licenses or borrow licenses once license server advanced configuration and customization are complete.

5.1 Basic Operations

Basic operations for the GoldSim license server primarily involve configuring client machines to check-out or to borrow licenses from the license server and checking the status of the license server to ensure that there are licenses available to the clients. Borrowing of licenses is covered in Section **6**. For license check-out, the GoldSim client needs to be configured to access the license server. After configuration, the client will check out the appropriate licenses whenever they are both available and requested by the client. When the client closes, it will release the checked out license back to the pool on the license server.

5.1.1 *lmadmin* web GUI/website

If preferred, the ***lmadmin*** web GUI/website can be used for many license server tasks/operations and for some advanced configuration tasks. This FlexNet Publisher ***lmadmin*** license server website can be accessed using a browser (i.e. Internet Explorer, Firefox, and Chrome). Access to this website is through the address http://FQDN:port (see Item **#4** in Section **4.1** and **Figure 26**). Access from other computers on the network may be limited by firewall settings (see Section **7.7** for additional details).

Some of the functionality of the FlexNet Publisher ***lmadmin*** license server website (or the ***lmadmin*** web GUI) needs to be enabled via command-line ***lmadmin*** commands. These options, and their current status, are shown at the bottom of the Administration | System Information page as shown in **Figure 46**. These options are:

- Local Stop Server Allowed,
- Remote Stop Server Allowed, and
- License Reclaim Allowed.

Section **7.2** discusses the ***lmadmin*** commands available for enabling these options.

Note: License Reclaim is not available for the GoldSim License Server. As a result, this option and the associated *lmadmin* command-line commands will not work for a GoldSim License Server.

Assuming that you have enabled, “Local Stop Server” then you can stop the vendor daemons and the FNPLS using the ***lmadmin*** web GUI. The vendor daemon stop functionality is available by going into the Administration dashboard, selecting the “Vendor Daemon Configuration” tab, selecting the “GTG” vendor daemon and then using the “Stop” button under “Vendor Daemon Actions” as shown **Figure 42**. The license server can be stopped by going into the Administration dashboard, selecting the “Server Configuration” tab and using the “Stop Server” button under “Server Configuration” as shown in **Figure**

47. If ***lmadmin*** has been configured as Windows Service (see Section **7.1**), then the license server can be stopped through the Windows Services management console (see **Figure 74**). Finally, the command line tools discussed in Sections **7.2** and **7.8** can also be used to stop the server.

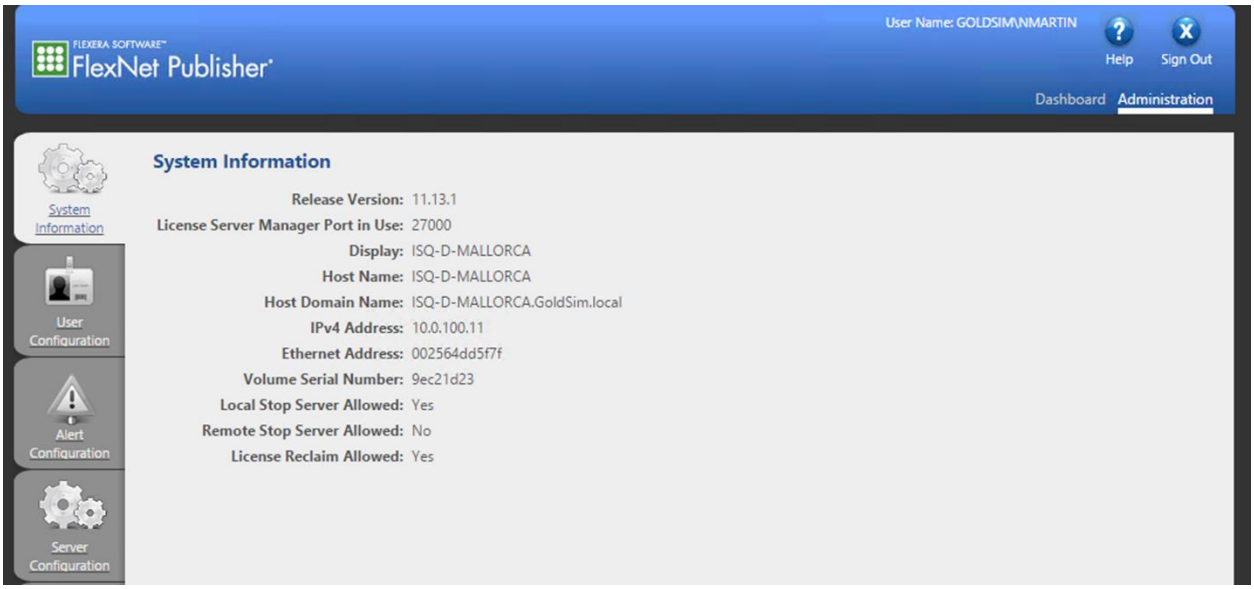

Figure 46: lmadmin web GUI Administration | System Information

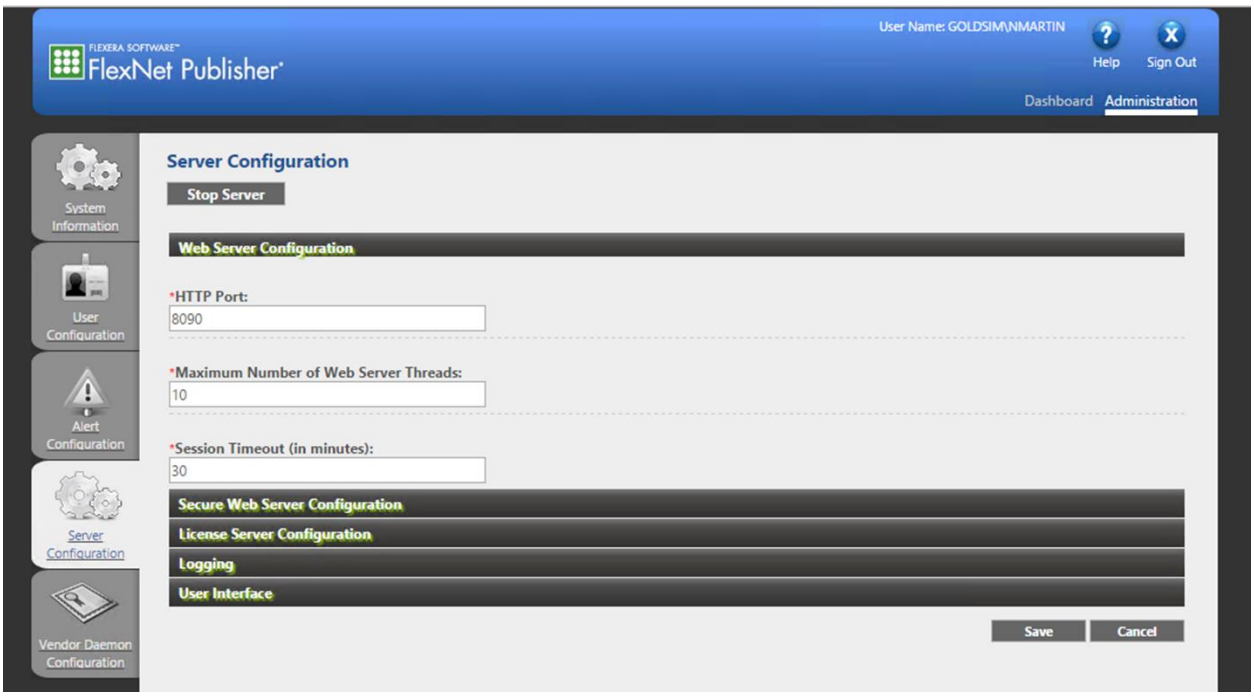

Figure 47: lmadmin web GUI Administration | Server Configuration

The ***lmadmin*** web GUI also comes with a built-in Help Library which is accessible via the "?" Help button in the top right of **Figure 47**. This built-in Help Library, see **Figure 48**, should be considered the primary documentation and help reference for the ***lmadmin*** web GUI. **Always consult this help information in detail before contacting GTG with questions related to the *lmadmin* web GUI.**

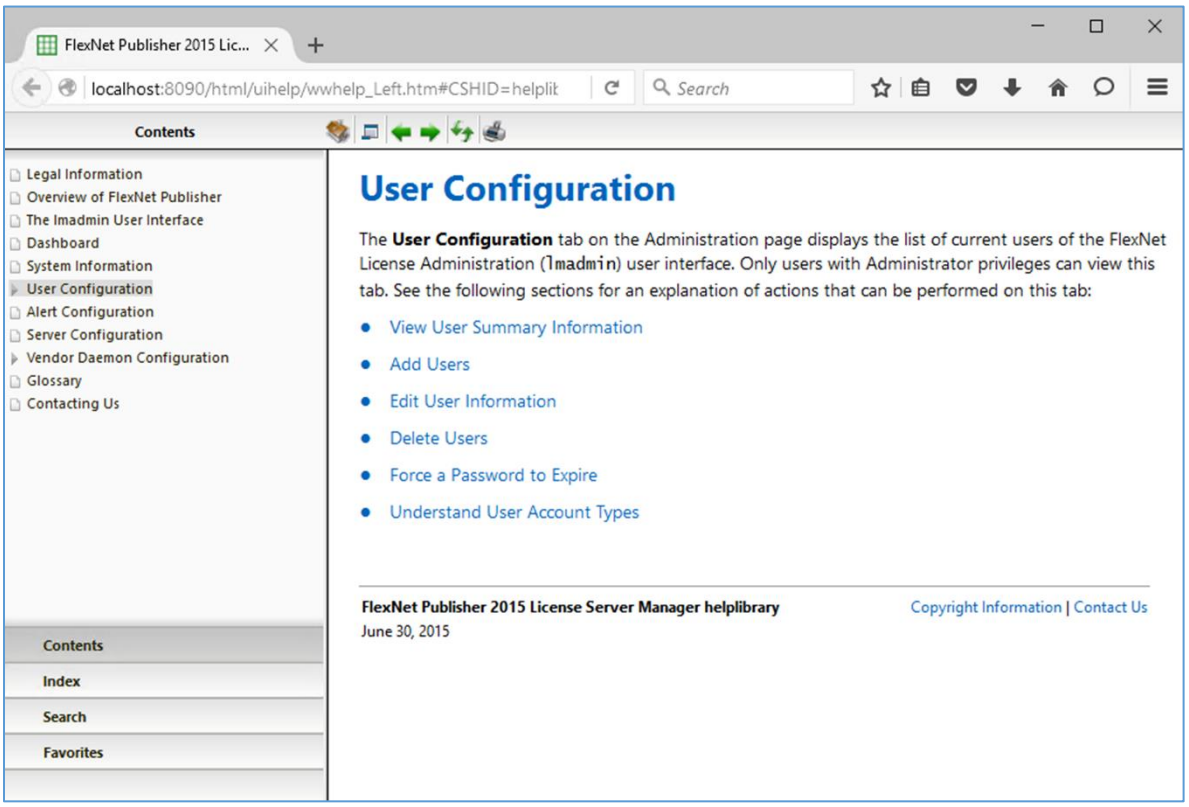

Figure 48: Example of built-in *lmadmin* web GUI Help Library

5.1.2 Configuring Clients for License Check Out

When GoldSim is open on a client machine, the GoldSim Licensing dialog can be accessed via Help | Licensing. An example of this dialog is provided by **Figure 45**. The "Network License Configuration" dialog can be obtained using the "Configure…" button (see **Figure 45**). **Figure 49** shows the client "Network License Configuration". The license server address should always be entered/provided in port@FQDN, where FQDN is fully qualified domain name for the license server computer. If no module check boxes are selected, then the client will only attempt to check-out a license for the core GoldSim product. The requested license server and modules will be saved to the Windows registry so that these selections are the default the next time that the client is started. If the License Server field is cleared, then "no" license server will be saved as the default.

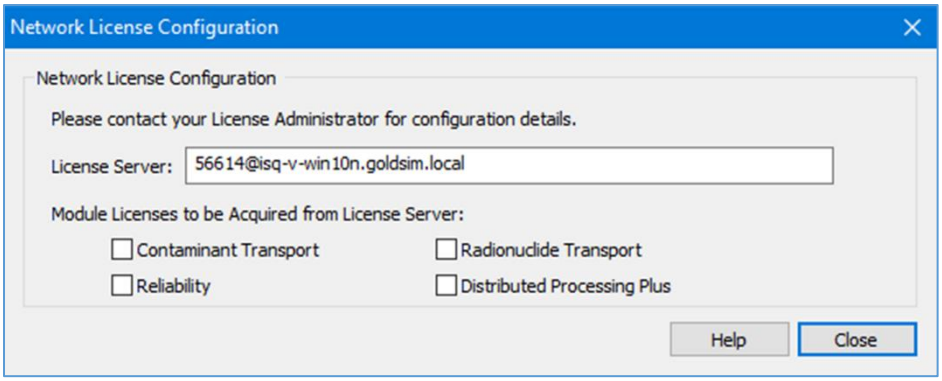

Figure 49: "Network License Configuration" dialog

5.1.3 Checking the Current Status of the License Server

There are two primary ways to check the current status of a license server. One way is through the web GUI.

1. The ***lmadmin*** web GUI is accessed with a web browser (i.e. Internet Explorer, Chrome, or Firefox). The access address is http://FQDN:port where again FQDN is the fully qualified domain name for the computer and the port is the designated access port number (see **Figure 21**).
    - localhost:port may also work when you are working on the server computer and are not using Internet Explorer as your web browser.
    - Web GUI access from other computers in your LAN may not work without some firewall configuration (see Section **7.7**) and for sure will not work unless ***lmadmin*** is running.
    - There are a number of different ways to change the access port number. The License Administrator should know the current port number setting.

2. The default "Dashboard" view for the web GUI is the "Activatable" Licenses view shown in **Figure 50**. This dialog will show the number of "Detached" or "Borrowed" licenses. The GoldSim Concurrent Network licenses are "Hybrid" licenses which means that they can be activated from the License Server. This activation process is what allows the "Borrowing" functionality.
    - This dashboard view provides links to the Hosts Dialog, **Figure 51**, and the Fulfillments Dialog, **Figure 53**.
    - The Hosts Dialog provides access to the Hosts Details, **Figure 52**.

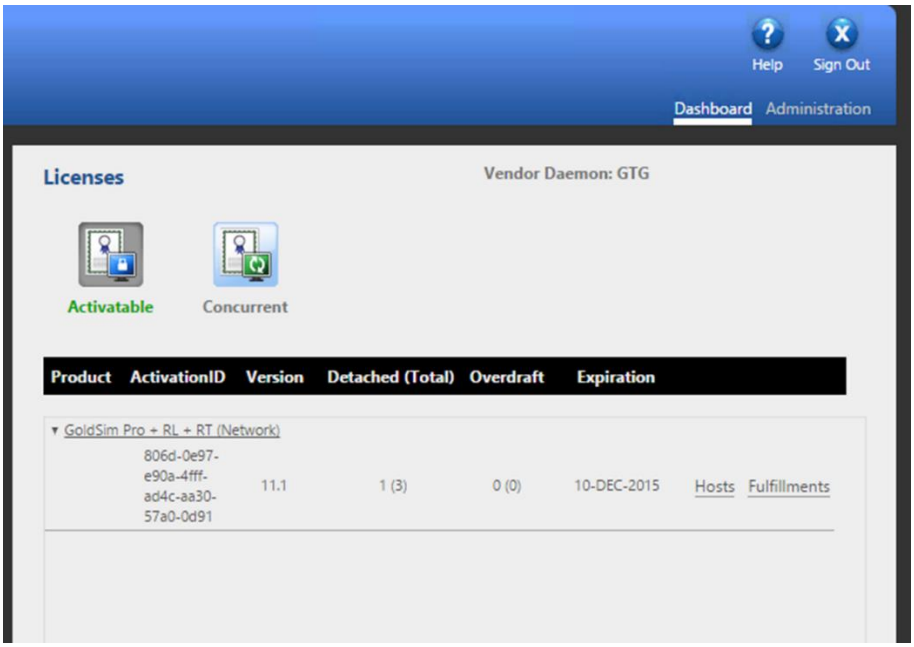

Figure 50: Web GUI "Activatable" Licenses Dashboard view

Figure 51: Hosts dialog from "Activatable" Licenses

Figure 52: Host Details, accessed from Hosts Dialog, Figure 51

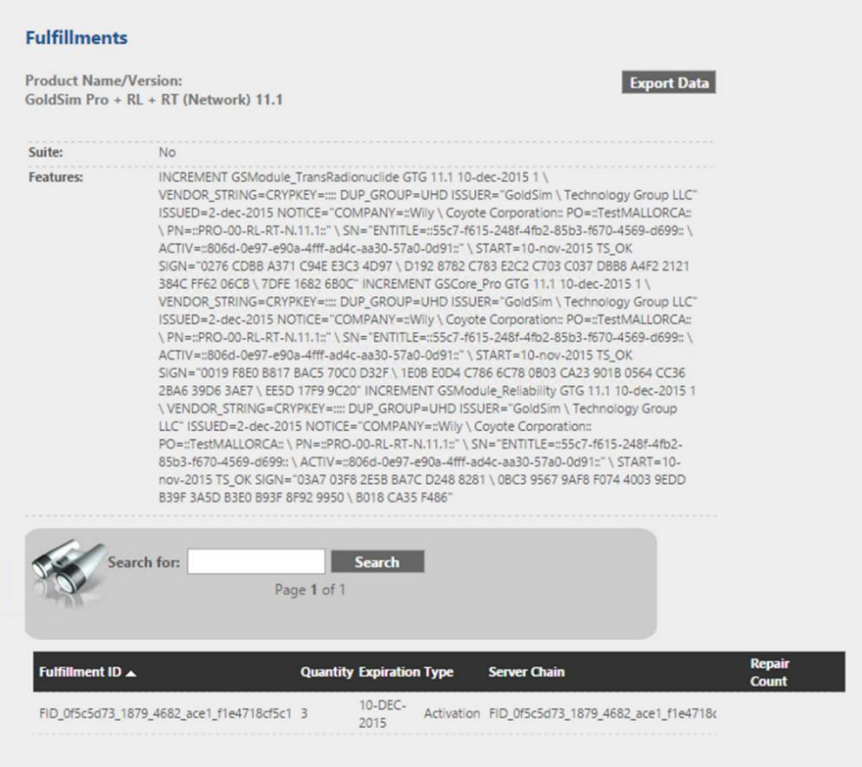

Figure 53: Fulfillments Dialog from "Activatable" Licenses

3. The Licenses Dashboard also has a “Concurrent” Licenses view as shown in **Figure 54**. The concurrent licenses view shows the licenses which are currently checked out from the License Server.
    - There is also a “Hosts” dialog which can be accessed via the “Hosts” link on the “Concurrent” Licenses dashboard view. An example is shown in **Figure 55**, and this dialog shows the host/computer which has checked out a licenses and the computer which has activated a license copy to “Borrow” this license.
    - The “Borrowed” license is denoted with “ACTIVATED LICENSES” in **Figure 55**.

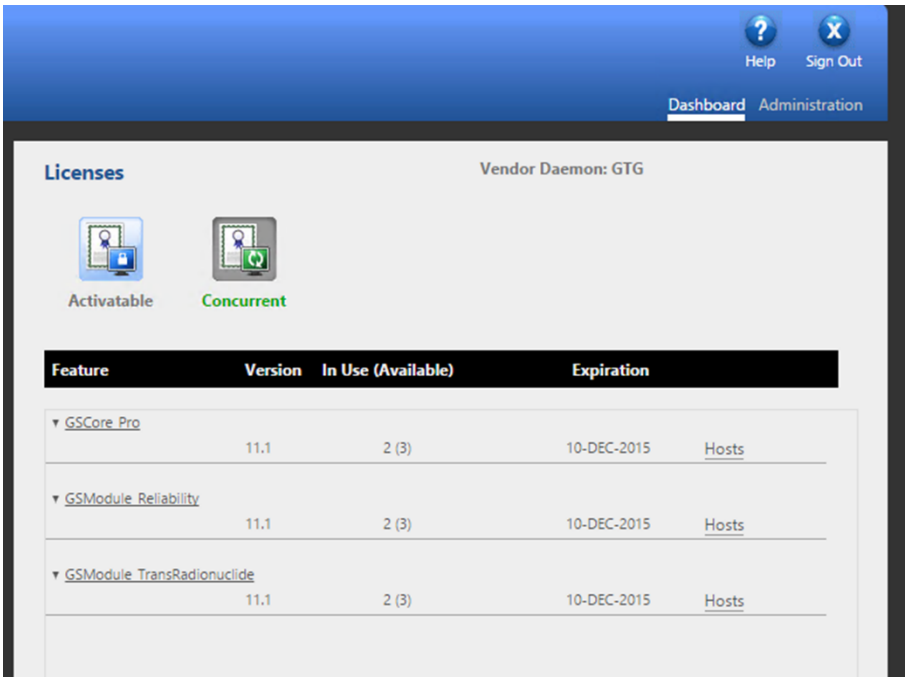

Figure 54: Web GUI "Concurrent" Licenses Dashboard view

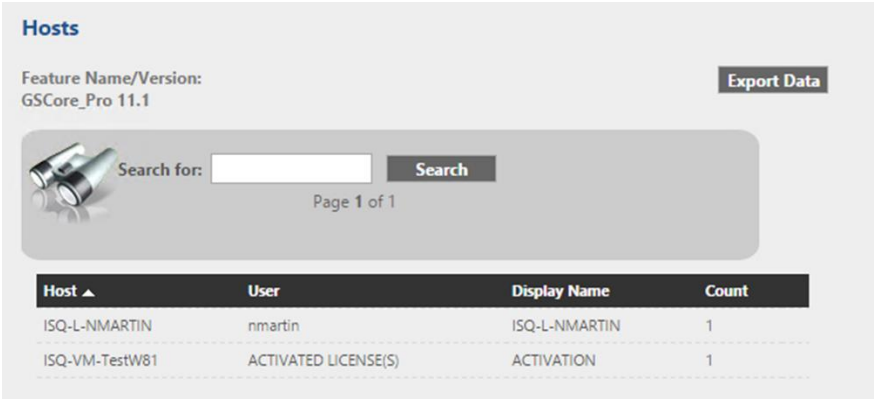

Figure 55: Hosts dialog accessed via link on "Concurrent" Licenses Dashboard view

The other way to check the current status of a license server is to use the command line utilities which are discussed in detail in Section **7.8**.

1. For checking the status, the pertinent command line command is:

   ```
   lmutil.exe lmstat -c port@FQDN -a
   ```

   - The port number here is the port that the license server is listening to (not the port for the web site or the port for the vendor daemon). This means that it will usually be a number in the range 27000 – 27009 per **Figure 21**.
   - FQDN is the fully qualified domain name for the license server.

- Section 7.8 provides additional details of `lmutil.exe` and of the `lmstat` tool.

2. **Figure 56** shows example output from the `lmstat` command. It shows the status of each feature. In the `lmstat` output, "ACTIVATED LICENSES(S)" denote borrowed licenses which are discussed in more detail in Section **6**. In the output provided in **Figure 56** there are no currently borrowed or checked out licenses.

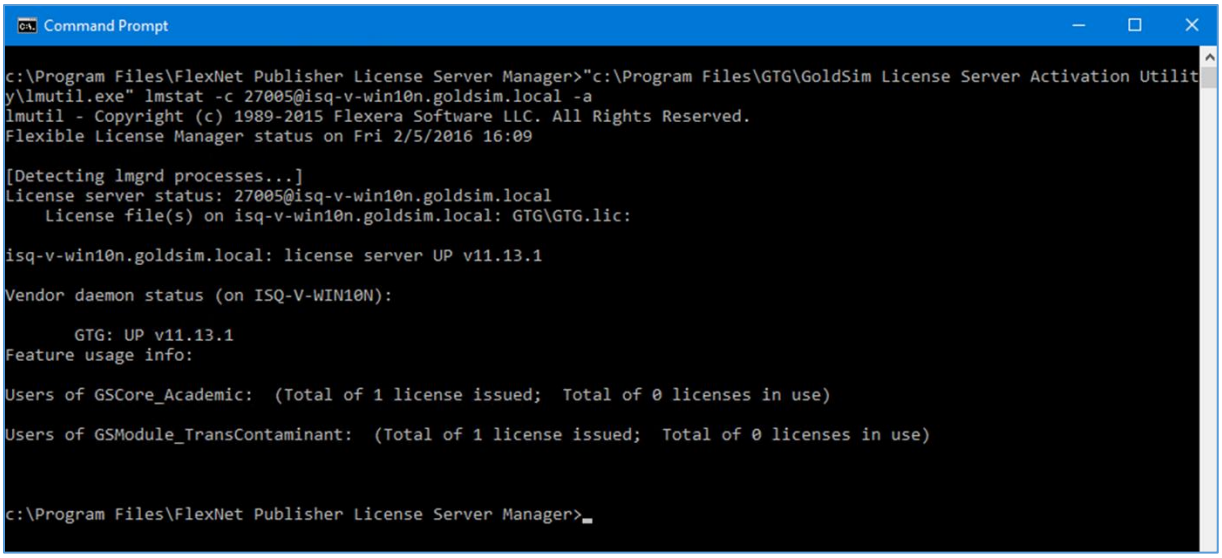

Figure 56: lmstat output for looking at license server status

5.2 License Maintenance

GoldSim license maintenance involves the maintenance and updating of server Trusted Storage for Concurrent Network licenses. Everything to do with server Trusted Storage is handled by ***GLSActUtil***. Consequently, ***GLSActUtil*** will be used for all license maintenance tasks.

- **Always stop all running license server instances (i.e. all *lmadmin* instances) before starting *GLSActUtil*.**
- **Always close *GLSActUtil* before restarting any license server instances.**

GoldSim Concurrent Network licenses are perpetual licenses. However, the fulfillments in Trusted Storage will typically expire after 1 year. This expiration means that the fulfillments need to be renewed each year. A one-year duration is used for fulfillment expiration because GoldSim does not push out updates. As a result, it is a good idea to check-in once a year to make sure that your software is up to date. The fulfillment expiration provides a built-in prompt to check and review your GoldSim software installation.

License maintenance, then, primarily consists of the annual renewal of the fulfillments in trusted storage. But, license maintenance does include the rarer scenarios of moving the license server to a

different machine or upgrading the license server hardware. Both of these scenarios are addressed under Section **5.2.2**: Moving the License to a Different Machine.

5.2.1 Annual Renewal

GTG will send you a renewal Entitlement Certificate each year before your current fulfillments expire. This renewal Entitlement Certificate will have the renewal Activation ID that is required to update or renew the Trusted Storage fulfillments. You can also look up the Activation ID in the GoldSim License Portal.

Use the following steps to renew the Trusted Storage fulfillments each year.

1. Make sure that all license server instances are stopped (i.e. all ***lmadmin*** instances are stopped).

2. Start GoldSim License Server Activation Utility (***GLSActUtil***), see **Figure 7**.

3. The main Network License Management dialog for ***GLSActUtil***, like the one in **Figure 57**, will be shown.
    - Note the Expiration and the existing Activation ID.

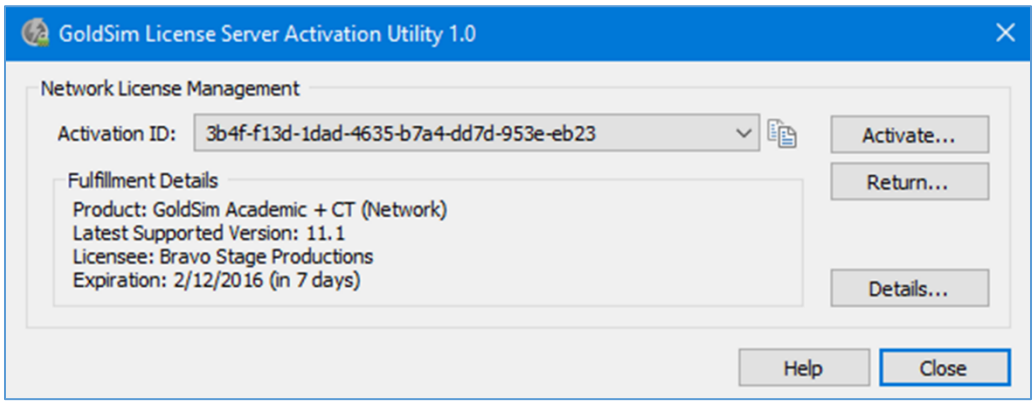

Figure 57: *GLSActUtil* - Main Network License Management dialog

4. Use the “Activate…” button to get the “Network License Activation” dialog like the one shown in **Figure 58**.
    - Enter the Activation ID from renewal Entitlement Certificate and use the “Activate” button.

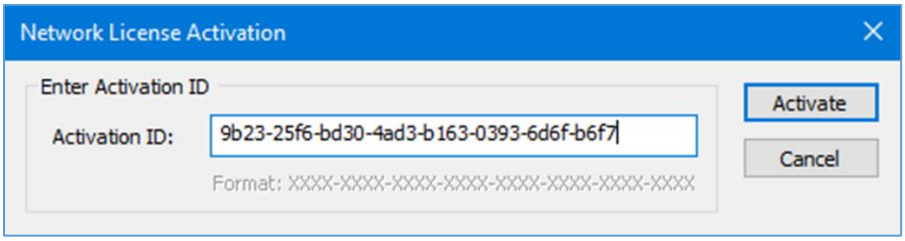

Figure 58: *GLSActUtil* - Network License Activation dialog

5. If the computer is connected to the internet you should get a "License activation successful" notification like **Figure 59**. Hit OK.

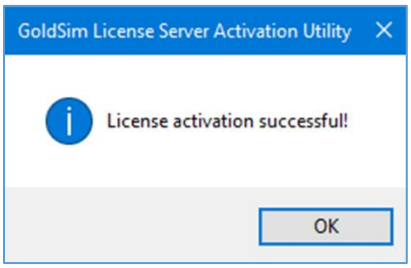

Figure 59: Activation Successful

6. You will be returned to the main Network License Management dialog for ***GLSActUtil*** like **Figure 60**.
    - Note that the Activation ID from **Figure 58** has replaced the original Activation ID and that the Expiration has been extended.

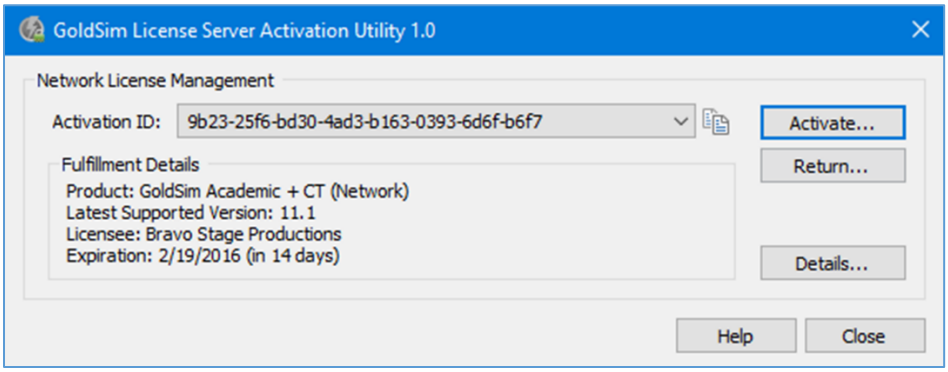

Figure 60: *GLSActUtil* - Main Network License Management dialog with new Activation ID and Expiration

7. Close ***GLSActUtil***.

8. The renewal has changed the "Activation ID", removed the old fulfillment, and created a new fulfillment based on the renewal "Activation ID". If you use an Options File (see Section **7.9**), some of the KEYWORDs in the Options File reference the "Activation ID" which is considered the "Entitlement ID" in server Trusted Storage. This has now changed.
    - If you use an Options File and you use a KEYWORD which requires an Entitlement ID (e.g. EXCLUDE_ENTITLEMENT entitlementId), then edit your Options File so that the new/correct "Activation ID" is used for the Entitlement ID (i.e. entitlementID term) for all KEYWORDs that specify an Entitlement ID.

9. Restart the license server(s).

5.2.2 Moving the License to a Different Machine

Once every two to three years, it is expected that the license server hardware will need to be updated or that the license server will need to be moved to a new or different computer. Moving the license to a different computer is two-step process:

1. Return of the existing fulfillment, and subsequent
2. Activation of the returned license, using the "returned" Activation ID, on the new computer.

Because moving the license to a different machine is expected to be an infrequent process, only two (2) returns per license are allowed per year. Moving the license is a two-step process. Only the "return" step is a "new" procedure. For the second-step (i.e. the activation on the new/different computer), follow the steps for Annual Renewal Activation in Section **5.2.1** or the steps for the initial Entitlement Activation in Section **2.1**.

To return a fulfillment/license so that it is available for activation on a different computer, complete the following steps.

1. Make sure that all license server instances are stopped (i.e. all ***lmadmin*** instances are stopped).

2. Start GoldSim License Server Activation Utility (***GLSActUtil***), see **Figure 7**.

3. The main Network License Management dialog for ***GLSActUtil***, like the one in **Figure 57**, will be shown.

4. Select the Activation ID to be returned using the pull-down just to the right of the Activation ID. If there is only one Activation ID, which is the typical case, then the Activation ID that you want to return will be shown by default. Use the "Return…" button to start the return process.

5. You will get a return confirmation/warning dialog like the one shown in **Figure 61**.

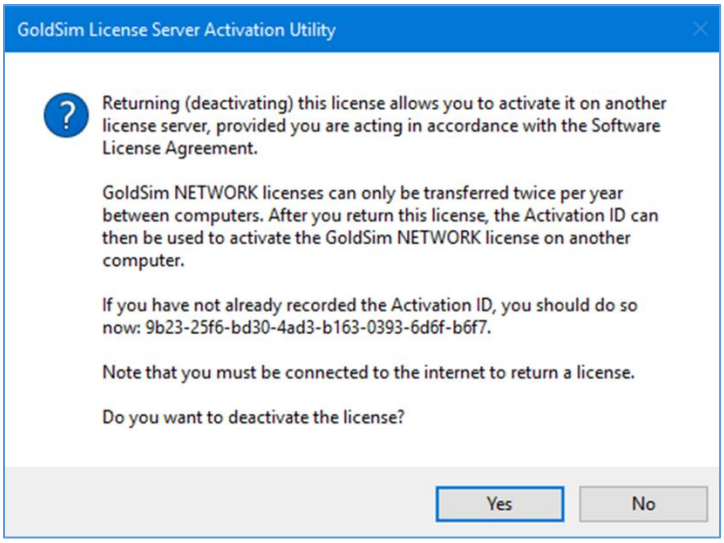

Figure 61: *GLSActUtil* - Return confirmation/warning dialog

6. Hit "Yes" to complete the return. You will receive a success confirmation dialog (or an error message if it was not successful).

7. You will be returned to main Network License Management dialog for ***GLSActUtil***, but now the Activation ID that you returned will have been removed. It has also been removed from server Trusted Storage.
    - If you only had one Activation ID, the typical case, then the main Network License Management dialog will be empty as shown in **Figure 62**.

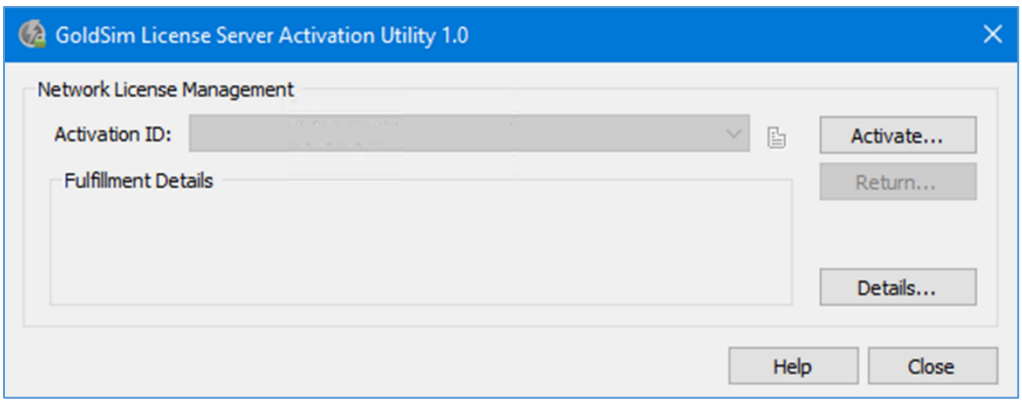

Figure 62: *GLSActUtil* - Main Network License Management dialog, empty after successful return

6 Borrowing

A GoldSim Concurrent Network license is a counted license which is hosted on a license server and which client machines can check out from the license server. This allows this type of license to float from computer to computer on the local area network as available and as requested by client machines. This license is also borrowable.

A floating borrowable license is first activated on a license server machine (see Section **2**). This license or each of the seats or counts included in this license can then be served as a floating license or activated on an end-user computer for use when it is no longer connected to a license server. This process of activating on an end-user machine for use when the computer is no longer connected to the license server is called borrowing.

The key point with borrowing is that it allows a machine to temporarily, locally install or fulfill a license from a license server. This machine can then leave the network and the license will stay with the client computer until the borrowing period is over. At that time, it will be automatically returned to the license server.

Important: If you are going to use borrowing, the following should be kept in mind.

- **Borrowing involves an activation of one of the seats or counts of a Concurrent Network license from a license server on a client machine.**

- **Activation means that the right/entitlement to that count of the Concurrent Network license is removed from the license server and placed on the client computer. This is called fulfillment and activation occurs against the license server and fulfillment occurs on the client computer.**

- **Once there has been a successful activation/fulfillment, the license server cannot get the borrowed license back until the borrowing period has expired or until returned by/from the client computer.**

- **This means that if you lose a client computer which has borrowed a license, you cannot get this license back until the borrowing period is over.**

There are two machines involved in borrowing a license: 1) the license server computer and 2) the client computer. Each machine provides for configuration and control over certain parts of the borrowing process.

6.1 License Server Computer

- The license server machine needs to be configured to allow borrowing.
    - All GoldSim Concurrent Network licenses are configured to permit borrowing.
    - The License Administrator can restrict or control borrowing and override the default settings through the Options file as discussed in Section **7.9**.
- There needs to be an available seat or un-checked out license on the license server.
    - Section **5.1** discusses ways to see the number of available seats on a license server.

- The client computer needs to make the request to borrow using the information from the license server.
    - Only the License Administrator will likely have this information.
    - The Activation ID used to fulfill the Concurrent Network license on the license server needs to be used by the client to complete the borrowing process.
    - The client needs to make the borrowing request to the appropriate vendor daemon using the port@FQDN syntax. In this case, the port value is the vendor daemon port (see the port value in **Figure 41**).

6.2 Client Computer

The client computer is where the "borrowing" request is actually executed. This request will only be successful provided that the correct information, as outlined in Section **6.1**, is available from the license server. In other words, you will not be able to borrow a license from your license server without assistance from, and the express permission of, your License Administrator.

Note: GTG will not have nor will GTG be able to determine all of the information that is required to successfully borrow a license from a license server. Only your License Administrator can do this.

The following steps provide a generic example of the information and process required to successfully borrow a license from a license server.

1. Open GoldSim, go to Help | Licensing to get the "GoldSim Licensing" dialog shown in **Figure 63**. Use the "Borrow…" button to start the process.

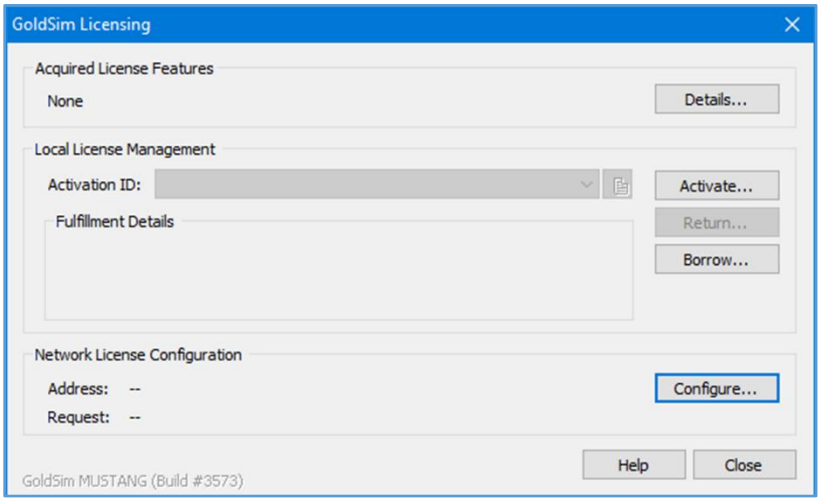

Figure 63: Initiate Borrowing from client computer using "GoldSim Licensing" dialog (Help | Licensing)

2. This will bring up the "Borrow from License Server" dialog as shown in **Figure 64**.

3. Enter the license server address using port@FQDN (see **Figure 41** for where to find this port number).

    a. Enter the Activation ID which was used to fulfill the concurrent, network license on the license server, for example see **Figure 9**.
    b. Enter the "Duration" or borrowing period in days. A counter box is provided for your convenience. However, the acceptable durations for borrowing are only known by your License Administrator.

- You cannot borrow for a duration which exceeds the time to fulfillment expiration on the license server.
- You cannot borrow for a duration which exceeds or contradicts the configuration specified for the vendor daemon (see Section **7.9**).

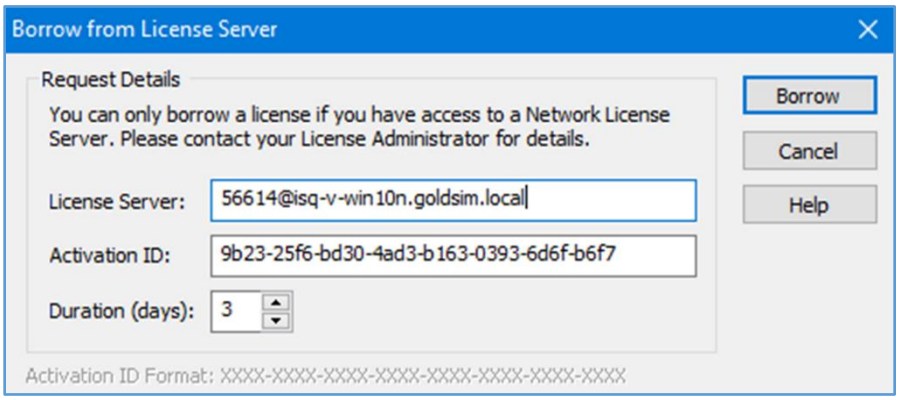

Figure 64: "Borrow from License Server" dialog

c. Use the "Borrow" button in **Figure 64** to submit the borrow request to the license server. If the request is successful, you will get a "success" dialog similar to the one shown in **Figure 65**.

- **If the request is unsuccessful, there is a bug in the Flexera Activation Borrowing API which causes all errors to be returned empty with 0,0,0 for the error designator. Check your settings carefully with your License Administrator.**

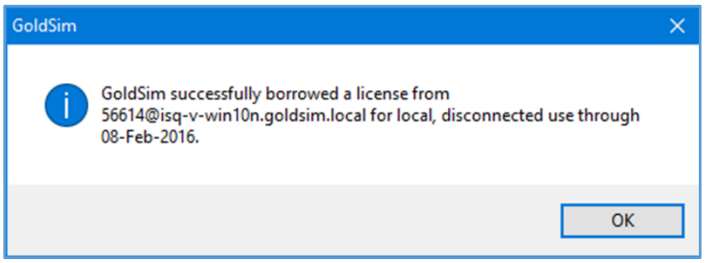

Figure 65: Successful borrow

4. After a successful borrow request, the fulfillment will be written to Trusted Storage on the client computer. The license or fulfillment now resides on the client computer and will only be returned to the license server when the specified borrowing period (see Duration in **Figure 64**) is over or when the borrowed fulfillment is returned from the client using the "Return" button shown in **Figure 66**.
    - Note that **Figure 66** shows the status of the fulfillment which was borrowed as being "borrowed from" the license server machine. The expiration date is also shown which comes from the specified borrowing period (see Duration in **Figure 64**).

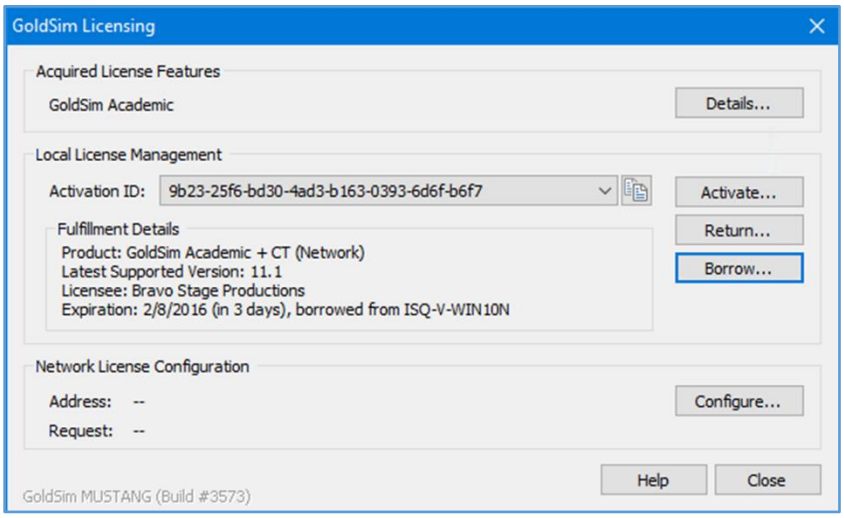

Figure 66: GoldSim Licensing showing successful borrow

5. As a final note, it is instructive to examine Trusted Storage on both the client computer (which now has the borrowed license) and on the license server computer (which has had the borrowed license deducted from the pool of available licenses).
    a. **Figure 67** shows an example of Trusted Storage on a client computer after successfully borrowing a license. A Trusted Storage printout like shown in **Figure 67** can be obtained using the "Details…" button in **Figure 66**.
    - Note that the "Fulfillment Type" is "Served Activation"
    - Also, note that the "Expiration Date" provides the borrowing duration or period expiration.

    b. **Figure 68** displays an example of Trusted Storage on the license server machine after successfully providing a borrowed license to a client. A Trusted storage printout like shown in **Figure 68** can be obtained from the "Advanced…" button in **Figure 11**.
    - Note that you should stop all running instances of ***lmadmin*** before running ***GLSActUtil***.
    - Note that the "Deductions" section at the bottom, which starts with "Deduction count: 1" provides the information on the license which has been given to the client machine for the borrowing period/duration.

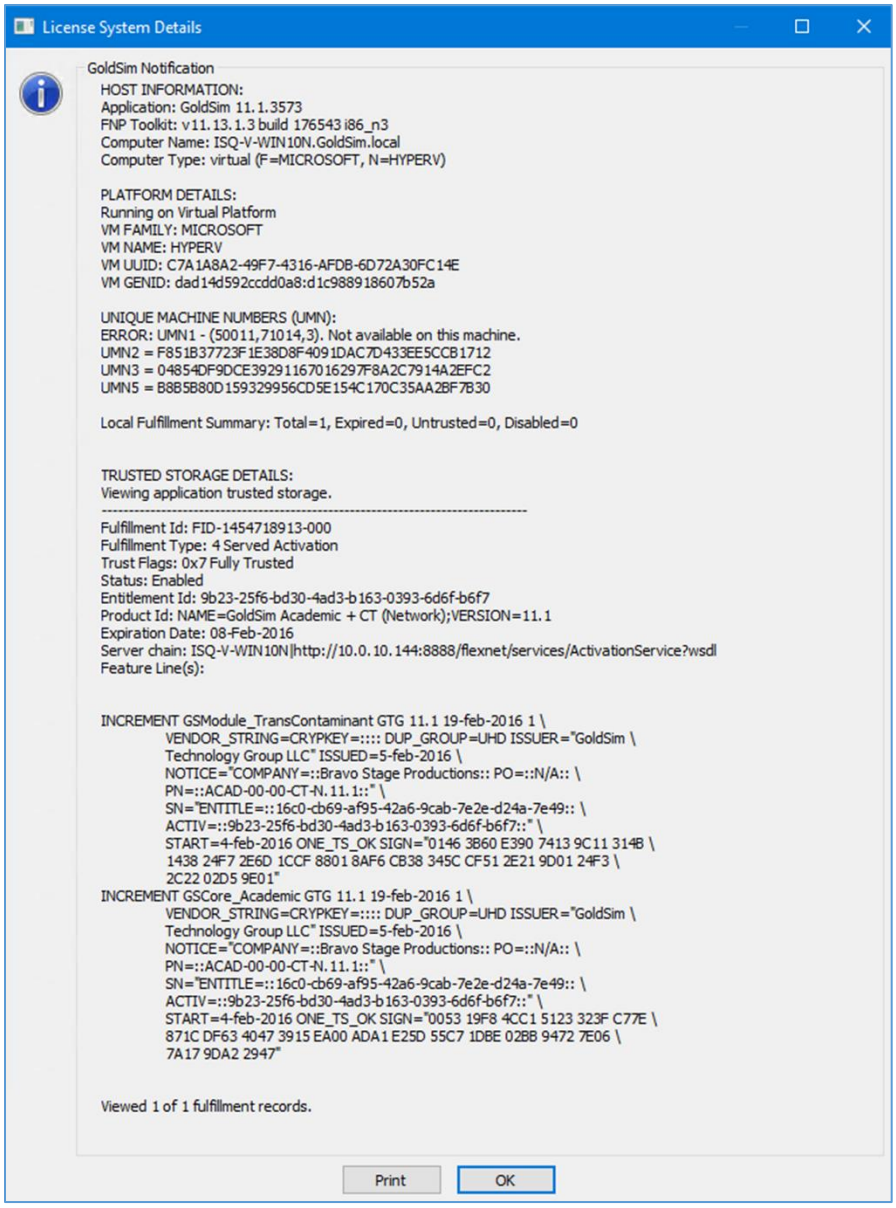

Figure 67: Trusted storage on the client which shows the successful borrow

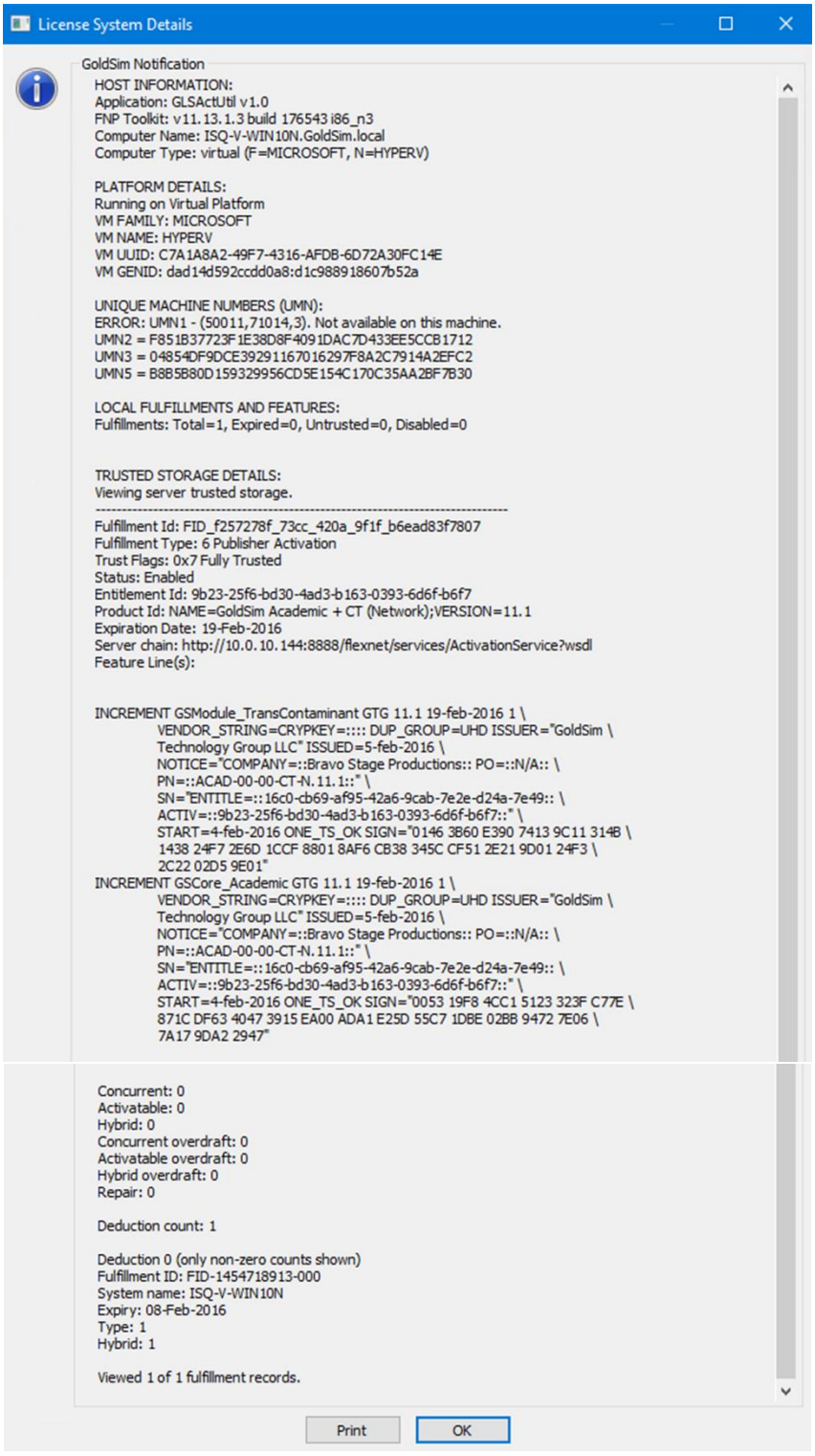

Figure 68: Trusted Storage excerpt from License Server showing a borrowed license (i.e. a deduction)

6.2.1 Returning a Borrowed License

A borrowed license can be returned to the license server pool early if a “Return” action is initiated from the client computer which has the borrowed license.

- **If the client computer does not return the license early, then there is no way to get the borrowed license back to the license server until the borrowing period is over and the borrowed license expires on the client computer.**

Use the following steps to return a borrowed license from the client machine which currently has the borrowed license in Trusted Storage.

1. Open “GoldSim Licensing” dialog from Help | Licensing. Select the “Activation ID:” for the borrowed license.
    - Note that it will say “borrowed from” as in **Figure 69**.
    - Use the “Return” button to initiate the return process.

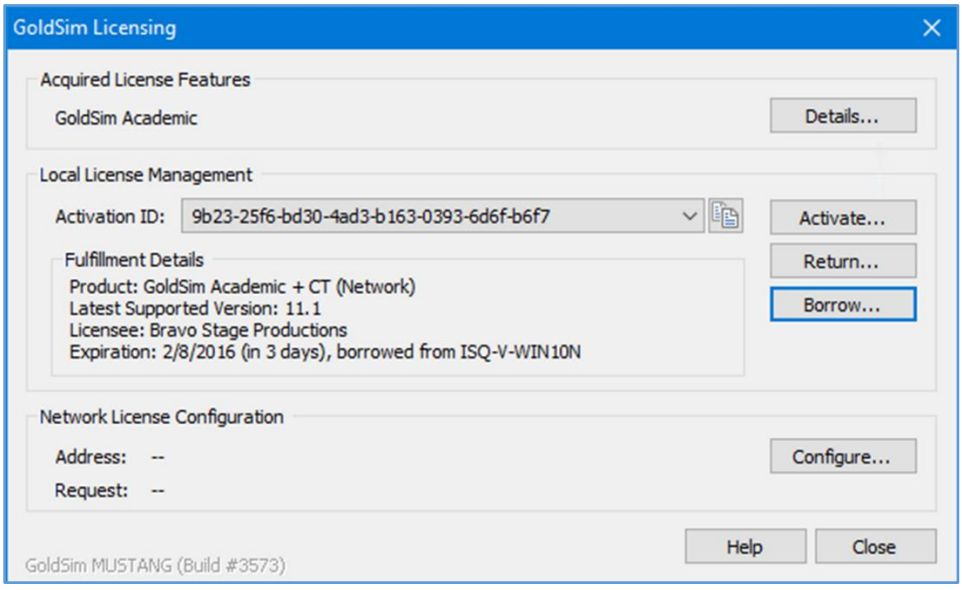

Figure 69: GoldSim Licensing dialog showing a borrowed license

2. Assuming that you want to complete the return, say “Yes” to the return the borrowed license confirmation dialog shown in **Figure 70**.

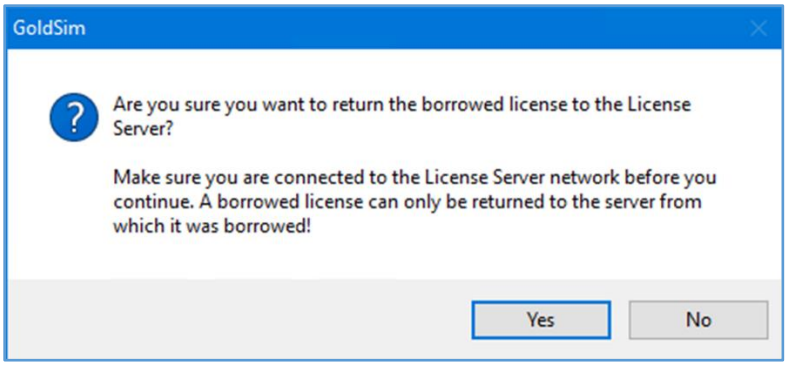

Figure 70: Return of borrowed license confirmation dialog

3. In the "Return Borrowed License" dialog enter the "License Server:" address in port@FQDN format as depicted in **Figure 71**.
    - Note that this address needs to be identical to the borrowing address specified when the license was borrowed (i.e. see **Figure 64**).

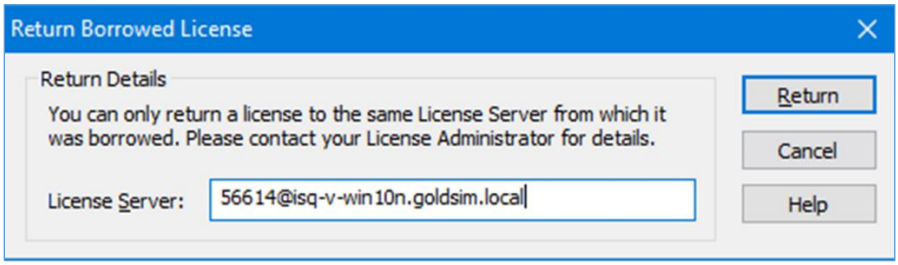

Figure 71: Return Borrowed License dialog

4. If everything was entered correctly, then you will see the return success dialog shown in **Figure 72**.

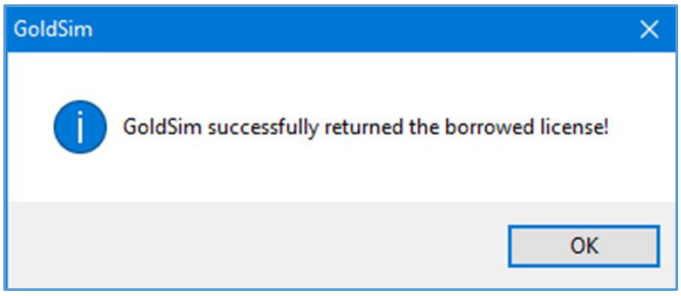

Figure 72: Return successful

7 Advanced Configuration Considerations

Numerous advanced configuration options are available for a GoldSim License server. Most of these options are provided by Flexera for the FNPLS product. Some of these FNPLS advanced features will be discussed briefly in the following sub-sections. The **FlexNet Publisher: License Administration Guide** provides the authoritative reference for all things pertaining to the FNPLS. It can be obtained from the GoldSim website Network License Downloads section and should be examined for additional details and instruction.

7.1 Installing and running *lmadmin* as a Windows Service

While it is possible to manually start and stop the ***lmadmin*** license server manager, it is recommended that you install it as a service on the operating system so that it will automatically start whenever the operating system restarts. Complete details of this configuration are provided in ***Chapter 9 - lmadmin License Server Manager*** of **FlexNet Publisher: License Administration Guide**. A brief overview is provided in the following to get you started.

To install ***lmadmin*** as a Windows Service with the service having the name *lmadmin*, use the following ***lmadmin*** command from an Administrator command prompt.

```
lmadmin -configDir "C:\ProgramData\FLEXlm\lmadmin\conf" -
installService lmadmin
```

Important: it is good idea to stop all running ***lmadmin*** processes or services before running the command above.

All of the command-line arguments used to configure ***lmadmin*** as a Windows service require that the user has administrator privilege. (Vista and later Windows versions enforce administrator privileges for installation or removal of a service.) Therefore, to use these ***lmadmin*** arguments you must do the following:

- Sign in as an administrator before running ***lmadmin*** with these arguments.
- Start the command prompt using the option Run as Administrator.

Figure 73 shows an example of running this command from the Administrator command prompt. Note that the command responds with a success message which has some additional hints for usage of the service. The result of this command is that a Local Windows Service is added called lmadmin as shown in **Figure 74**. This service is not yet started but is configured to start automatically when the computer starts. If you examine the properties of this service, then you will see something similar to **Figure 75**.

The "Start" button in either **Figure 74** or **Figure 75** can be used to start ***lmadmin***, manually, as a Windows Service.

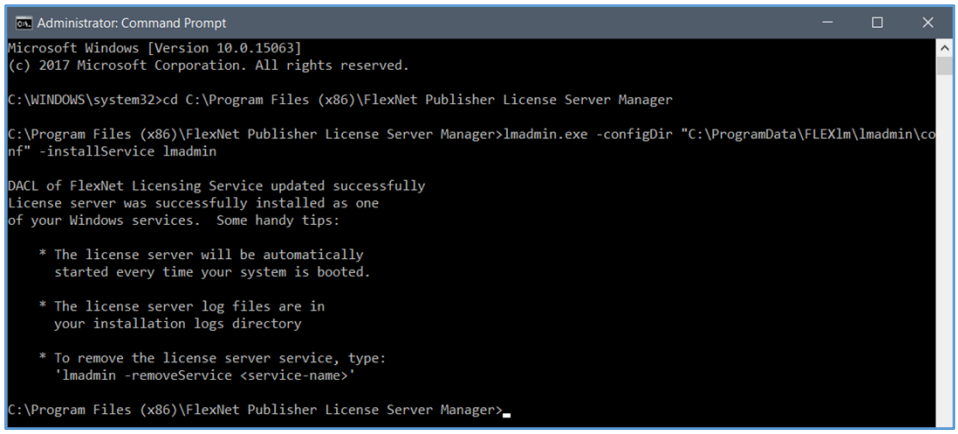

Figure 73: Install *lmadmin* as a Windows Service

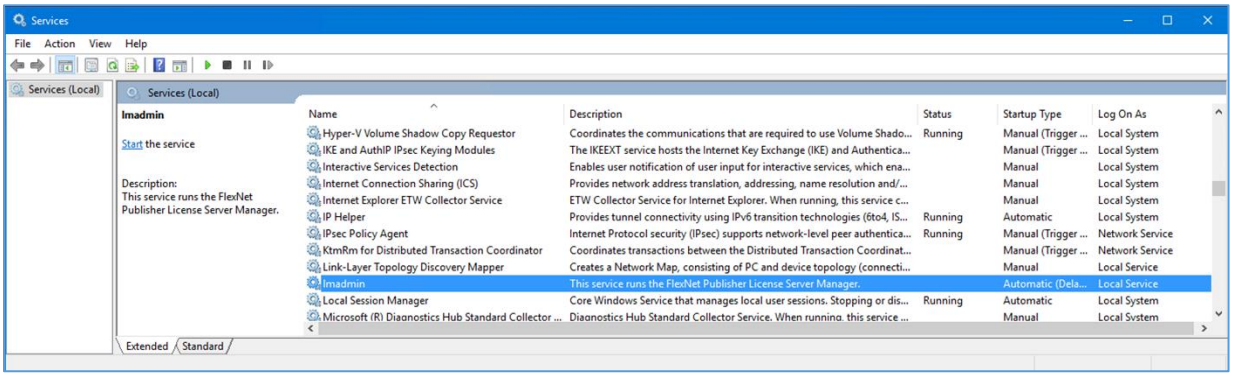

Figure 74: *lmadmin* added as a local Windows Service

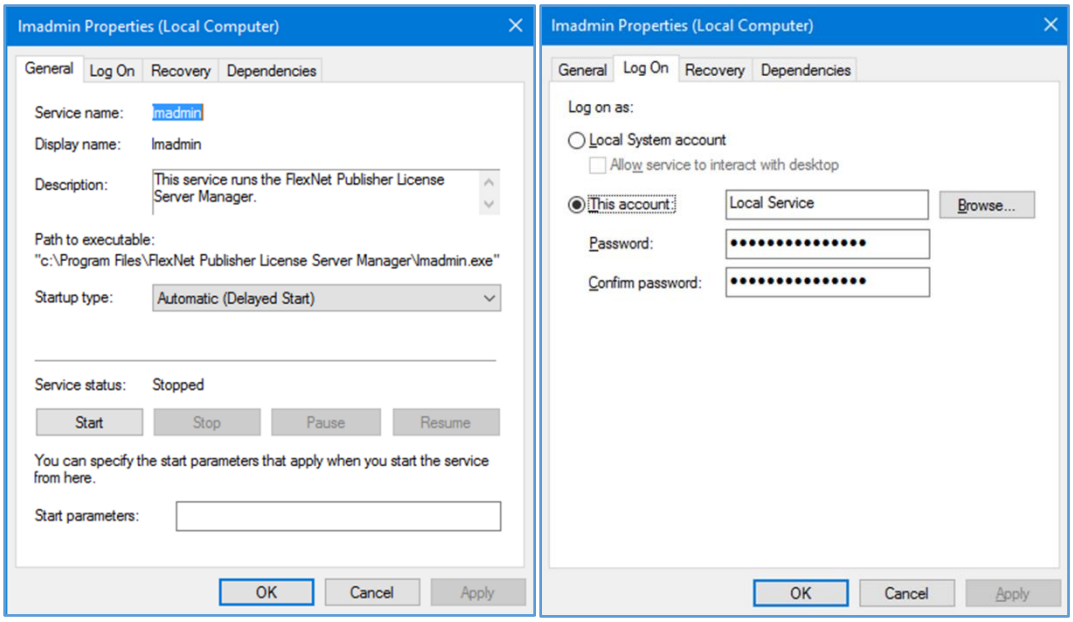

Figure 75: New *lmadmin* Windows Service properties

7.1.1 Running FNPLS as a System Service with Non-Elevated Permissions

Note: "For security reasons, Flexera Software recommends that the license server be run with non-elevated user privileges (which, in turn, the vendor daemon inherits). See the later section {***Chapter 9 - lmadmin License Server Manager*** of **FlexNet Publisher: License Administration Guide**}, Running FlexNet Publisher License Server as a System Service With Non-Elevated Privileges, for details on enabling the ***lmadmin*** operating-system service to run under a non-Root or non-administrator user account. (Flexera Software (March 2017) p. 90)"

Running ***lmadmin*** with non-elevated permissions ensures that any security vulnerabilities exploited by malicious users with access to the corporate network will have minimal impact beyond the licensing services. The following is an overview of the process required to run ***lmadmin*** with Non-Elevated Permissions. For complete details see ***Chapter 9 - lmadmin License Server Manager*** of **FlexNet Publisher: License Administration Guide**.

1. Install the license server as a system service. This step typically requires elevated privileges.

2. Identify or create a user account with non-elevated privileges. You should create a user account (either a domain account or a local account) that is dedicated to running the license server system service. In the instructions that follow, this user account is referred to as the Service User account. Make sure that this Service User account has sufficient permissions to read the license files and write the log files in the designated folders.

3. Configure the installed license server system service to use the Service User account. This step requires elevated privileges as well.

7.2 *lmadmin* Command Line Management

As discussed in Sections **4.1**, and **7.1** ***lmadmin*** can be run from the command prompt using various options or commands to complete certain configuration tasks. Generally, these tasks require elevated privileges but not always. **Figure 76** shows the complete list of command line options. ***Chapter 9 - lmadmin License Server Manager*****, lmadmin Command-line Arguments** Section of the **FlexNet Publisher: License Administration Guide** provides additional details of the ***lmadmin*** command line arguments.

```
lmadmin [-version] [-config <configFile>] [-configDir <configFileDirectory>] [-cacheDir
<cacheDirectory>][-root <lmadmin_install_dir>] [-force] [-giveaccess <service name>] [-import
<licenseFileList>]
[-importInstallation <oldInstallDirectory>[-config <configFileForImport>][-configDir
<configDirForImport>]] [-licPort <licenseServerPort>][-webPort <httpPort>]
[-allowStopServer <yes|no>] [-allowRemoteStopServer <yes|no>][-allowLicenseReclaim <yes|no>]
[-installService <servicename>] [-delay <seconds>] [-removeService <serviceName>]
[-defaultAdminUser <domain\username>] [-defaultAdminGroup <domain\groupname>]
[-uploadDir <uploadDirectory>] [-useradd <userid> -Pass <password> -Role <roleType> [-FirstName <name>]
[-LastName <name>]] [-usermod <userid> [-Pass <password>] [-Role <role_type>] [-FirstName <name>] [-
LastName <name>]] [-userdel <userid>] [-foreground] [-adminOnly <yes|no>] [-logDir <logDirectory>]
```

Figure 76: lmadmin command line options

Three options that may be of interest which deal with control permissions for the license server are listed below.

- -adminOnly <yes|no>: restricts command-line access to lmadmin commands to lmutil command line utilities. If –adminOnly yes is used when starting lmadmin, no user on Windows can shut down the license server with lmdown, nor can they use the lmswitch, lmswitchr, and lmnewlog command-line utilities.
- -allowStopServer <yes|no>: Configures how the license server can be stopped. If set to yes, local clients can stop the license server using either lmdown or the Stop Server button (see **Figure 34**) in the UI.
- -allowRemoteStopServer <yes|no>: Configures whether the license server can be stopped from a remote location. If set to yes, then you can stop the license server from a remote location and local clients can stop the license server using either lmdown or the Stop Server button (see **Figure 34**) in the UI.

Additionally, the “configDir” command line option is a new option as of FNPLS 11.14.1.1 which is required to successfully implement many commands. Explanation of this command line option is provided in ***Chapter 9 - lmadmin License Server Manager*** of the **FlexNet Publisher: License Administration Guide** and is reproduced below in **Figure 77**.

Specifying the “conf” Folder

In a default `lmadmin` installation on a Windows platform, the **conf** folder is installed in the runtime data directory under **ProgramData** (that is, not in the same location where **lmadmin.exe** is installed). Therefore, for all operations that involve updates to files located in the **conf** folder (for example, **server.xml**), you need to specify the location of **conf** using the `-configDir` command:

```
lmadmin.exe -configDir <conf_path>
```

where *<conf-path>* is the path to the **conf** folder (for example, `C:\ProgramData\FLEXlm\lmadmin\conf`).

For command-line examples listed within this chapter, it is assumed that the **conf** folder is not installed in the same location as **lmadmin.exe**.

In installations on non-Windows platforms, and in Windows installations where the **conf** folder is installed in the same location as **lmadmin.exe**, using the `-configDir` command is not required.

Figure 77: Explanation of the new "conf" folder command line switch

7.3 Adding Users and Administrators to the License Server

Users and Administrators can be added to a license server using either the command line ***lmadmin*** commands discussed in Section **7.2** or the ***lmadmin*** web GUI discussed in Section **5.1.1**.

- **Users and Administrators only need to be added to the *lmadmin* web GUI in order to give these individuals access to the *lmadmin* web GUI license server configuration settings. In other words, only those who need to login to the *lmadmin* web GUI Administration dashboard need a user or Administrator account.**

- **License Server status can be viewed as shown in Figure 54 without logging into the *lmadmin* web GUI Administration dashboard. Consequently, you do not need to be a designated user/administrator in order to check License Server status.**

- **Licenses can be checked out from the license server without logging into the *lmadmin* web GUI Administration dashboard. Consequently, you do not need to be a designated user/administrator in order to check out a license from a license server.**

To add users/administrators through the ***lmadmin*** web GUI, login to the Administration dashboard as an existing administrator (license server administrator). Navigate to the "User Configuration" tab and use either the "Locally Managed Users" view (see **Figure 78**) or the "Domain Users / Groups" view (see **Figure 79**) and the "New" button. Please use the built-in Help Library (via the "? – Help" button) for additional information on adding users (see **Figure 48**).

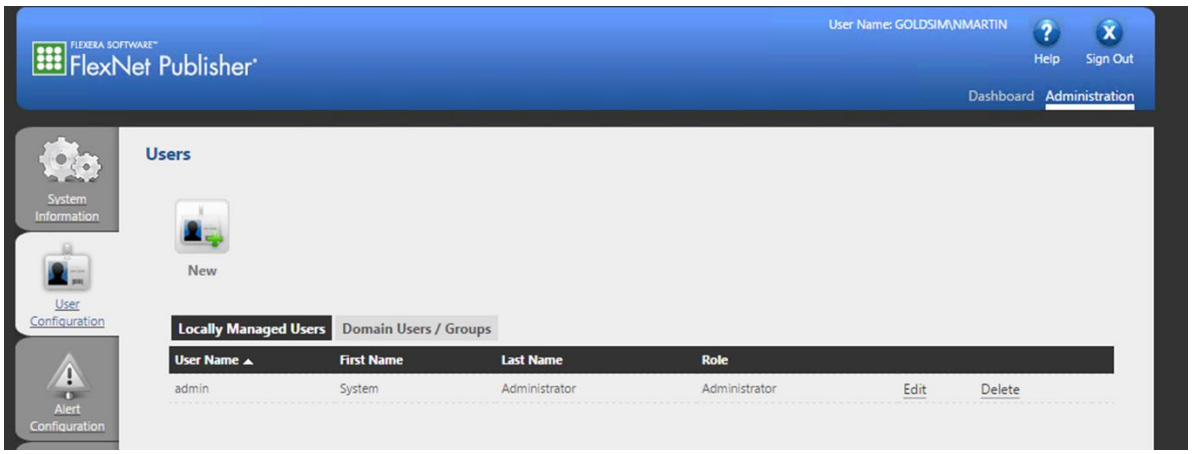

Figure 78: *lmadmin* web GUI Administration dashboard, User Configuration, Locally Managed Users

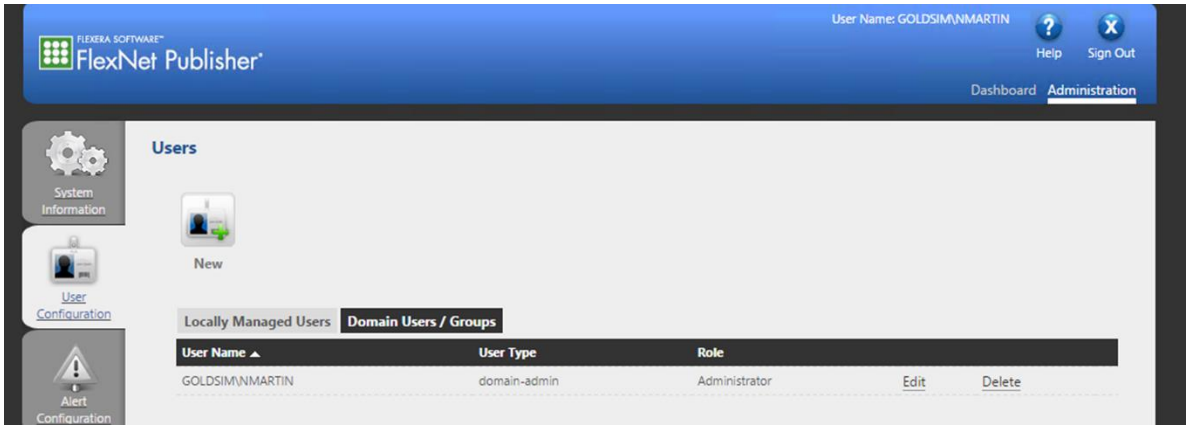

Figure 79: *lmadmin* web GUI Administration dashboard, User Configuration, Domain Users / Groups

7.4 *lmadmin* Log Files

A "logs" sub-directory is created in the FNPLS data directory. Typically, the path to this logs sub-directory is something like:

- "C:\ProgramData\FLEXlm\lmadmin\logs".

There are three "standard" or default logs which are related to FNPLS function and operation. These log files and their descriptions are provided in **Figure 80**. Additionally, there will be a log for each vendor daemon served by the license server. For GoldSim, the vendor daemon log is called GTG.log. The vendor daemon log(s) file contains information recorded by the corresponding vendor and this file is sometimes referred to as the debug log file.

Log File Name	Description
access.log	Contains information recorded about access to the license server management interface.
lmadmin.log	Contains information recorded by the license server.
web.log	Contains information recorded by the license server management interface. This file does not contain information about login events. See the `access.log` file for that information.

Figure 80: Standard FNPLS logs from FlexNet Publisher: License Administration Guide

7.4.1 Optional Report Log

There is a fifth, optional log file which is available through FNPLS. This optional log file is called the "Report Log" and is written in a binary format. This log is a separate log file that needs to be enabled for

each vendor daemon to record information about features that have been checked out by users. The "Report Log" is enabled using the options file discussed in Section **7.9**.

An add-on product, "FlexNet Manager for Engineering Applications", needs to be purchased from Flexera in order to process or use this "Report Log". FlexNet Manager for Engineering Applications is a reporting tool which is designed to enable organizations to efficiently manage high spend technical applications to reduce licensing costs, improve productivity and more accurately forecast future software needs. This tool provides the packaged solution for generating and analyzing statistics of license server usage.

7.5 *lmadmin* Web Services

lmadmin provides a Web services interface that exposes certain APIs that can be called from a custom-built utility. These services enable you to extend the core license server capabilities. Please see ***Chapter 9 - lmadmin License Server Manager*, Extending lmadmin License Server Capability Section** of the **FlexNet Publisher: License Administration Guide** for additional information.

7.6 *lmadmin* Alerter Service

The ***lmadmin*** license server installation provides a way to implement an email alerter service. This service will poll for alerts and then send a user an email when an alert has been triggered. Details of implementing and using this alerter service are provided in ***Chapter 9 - lmadmin License Server Manager*, Extending lmadmin License Server Capability Section** of the **FlexNet Publisher: License Administration Guide**.

7.7 FNPLS Firewall Considerations

In the installation of FNPLS in Section **3.2.1**, choices were made for two network port settings. These port settings are:

1. The HTTP Port Number for the ***lmadmin*** web GUI. By default, this port number is 8090 but can be set to custom values.
2. The License Server Port Number, which is the port for the ***lmadmin*** service. The default is a Port Number automatically selected in the range 27000 – 27009. But a custom value can be set for this as well.

There was a third port setting specified as part of the vendor daemon configuration in Section **4**.

3. The Vendor Daemon Port which was set to 51288 in the example installation guide in **Figure 42**. A custom value can be set for this port.

It is likely that Inbound firewall rules will need to be created to allow access to all three of these ports. However, depending on your network configuration and security policies this may or may not be the case. Furthermore, it may or may not be desired to provide access to the ***lmadmin*** web GUI from client machines or from elsewhere on the LAN. Only if it is desired to permit access to this web site should a

firewall rule be created for the HTTP Port Number. Finally, it is also possible to use the ***lmadmin*** web GUI/web site as an https-only site. This configuration will introduce another port number, and an Inbound firewall rule will also be required to provide access to the https site.

In terms of Inbound firewall rules, the following can be specified.

- An Inbound rule (i.e. allow) can be created for TCP and UDP protocol access to ***lmadmin.exe*** executable or Inbound rules (i.e. allow) can be created for TCP and UDP protocol access to the License Server Port(s) and the Vendor Daemon Port.
- An Inbound rule (i.e. allow) can be created for TCP protocol access to the HTTP Port Number and or the HTTPS Port Number depending on if this option is configured or not.

7.8 *lmutil* Command Line Utilities

Flexera provides a generic set of license server command line utilities which are packaged into a single executable called lmutil.exe. This executable is installed as part of the GoldSim License Server Activation Utility installation, see Section **2.1** and **Figure 12**. A listing of this generic set of utilities is provided in **Figure 81** as taken from **FlexNet Publisher: License Administration Guide**.

These utilities are by design generic so that they apply in some cases to only certain flavors of FlexNet Publisher implementations. **Table 2** provides a summary of the utilities that will work with the GoldSim License Server. Note that all of the utilities are executed as options to the lmutil.exe package using the following syntax.

```
lmutil.exe {utility name} {options}
```

Utility	Description	lmadmin Function
lmborrow	Supports license borrowing.	None
lmdiag	Diagnoses license checkout problems.	None
lmdown	Gracefully shuts down selected vendor daemons on the license server (or on all three systems in the case of three-server redundancy).	Vendor Daemon Configuration - Administer - Stop
lmhostid	Reports the hostid of a system.	System Information displays hostids for the license server.
lminstall	Converts license files between different formats.	None
lmnewlog	Moves existing report log information to a new file name and starts a new report log file with existing file name.	None
lmpath	Allows users direct control over license file path settings.	None
lmremove (in License-File-Based Licensing)	Releases a hung license to the pool of free licenses.	None. Note `lmadmin` default setting disables `lmremove`.
lmremove (in Trusted-Storage-Based Licensing)	Releases a hung license to the pool of free licenses in trusted storage.	None
lmreread	Causes the license daemon to reread the license file and start any new vendor daemons.	Vendor Daemon Configuration - Administer - Reread License Files
lmstat	Displays the status of a license server.	Dashboard - Licenses
lmswitch	Controls debug log location and size.	None
lmswitchr	Switches the report log to a new file name.	Vendor Daemon Configuration - Administer - Rotate Report Logs
lmver	Reports the version of a library or binary file.	None
lmvminfo	Returns the environment of the system used as to virtual or not.	None

Figure 81: Complete listing of Flexera license server utilities

The details of the options available for each utility as well as complete details of all of the utilities are available in **FlexNet Publisher: License Administration Guide**. All of these utilities are distributed and maintained by Flexera and the **FlexNet Publisher: License Administration Guide** should be considered the authoritative reference on these utilities.

- **Note that the *lmadmin –adminOnly* command-line argument restricts usage of the lmdown, lmreread, lmremove, lmswitch, lmswitchr, and lmnewlog utilities. If you set *–adminOnly no*, command-line access to these utilities is unrestricted. On Windows, command-line access to these utilities is completely restricted with *–adminOnly yes*; in this case, no user on Windows can shut down the license server with lmdown nor can they use the lmswitch, lmswitchr, and lmnewlog command-line utilities.**

Table 2: Flexera License Server Utilities which work with GoldSim License Server

Utility	Example Usage	Discussion
lmdiag	**Figure 82**	Helpful for diagnosing license check-out issues. In **Figure 82**, the diagnosis shows no issues.
lmdown	**Figure 83**	Can do equivalent from the ***lmadmin*** web GUI interface.
lmhostid	**Figure 84**	Shows hostids. Numerous options here; the default for a GoldSim License Server is a MAC address.
lmnewlog	(not shown)	Moves report log (old report log) to a new file name and start new report log. Only applicable for FlexNet Manager for Engineering Applications, see Section **7.4.1**.
lmreread	**Figure 85**	Can do equivalent from the ***lmadmin*** web GUI interface.
lmstat	**Figure 86** **Figure 87**	Similar information is available from ***lmadmin*** web GUI interface
lmswitch	(not shown)	Controls debug log options
lmswitchr	(not shown)	Can do equivalent from the ***lmadmin*** web GUI interface.
lmver	**Figure 88**	The version is important for compatibility between vendor daemons and FNPLS versions
lmvminfo	**Figure 89**	The example case is running on a virtual platform

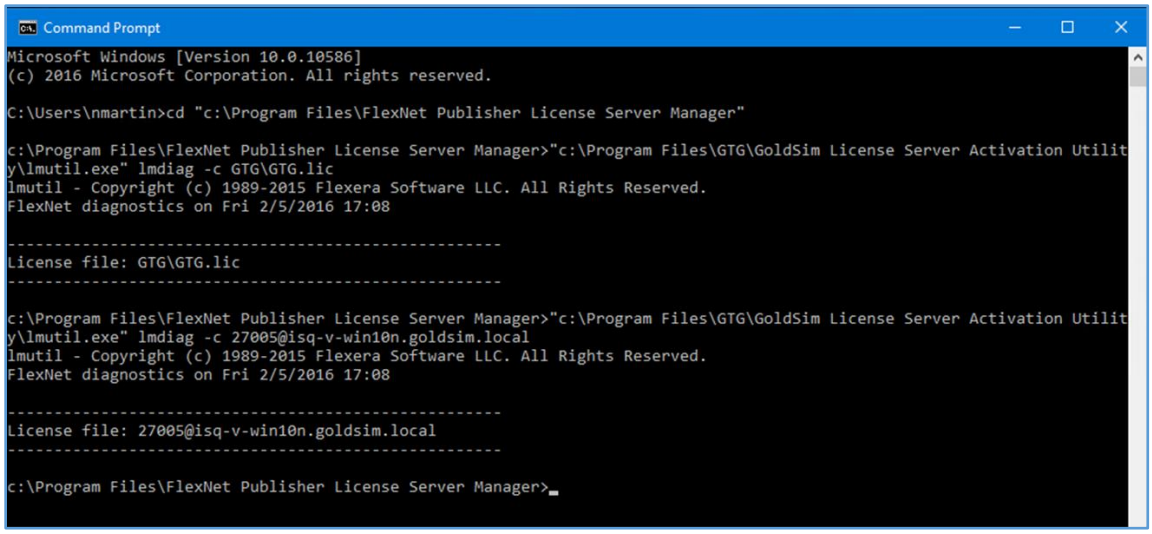

Figure 82: Example of `lmutil.exe lmdiag` usage

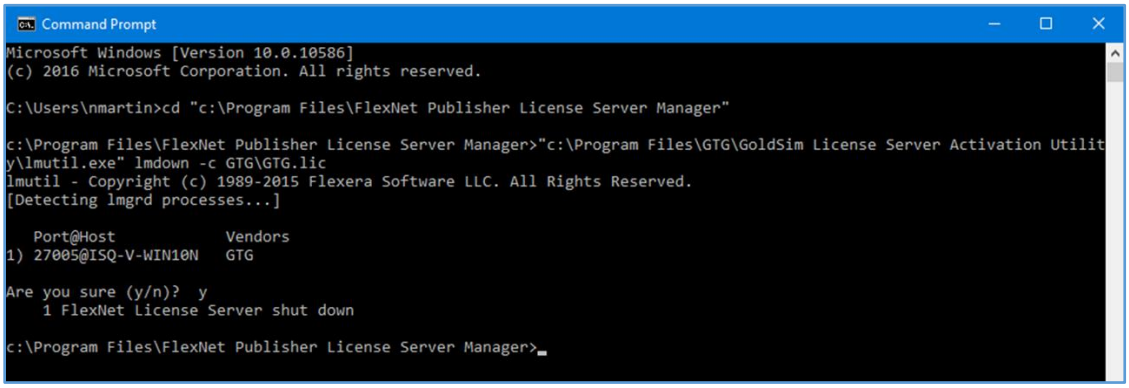

Figure 83: Example of `lmutil.exe lmdown` usage

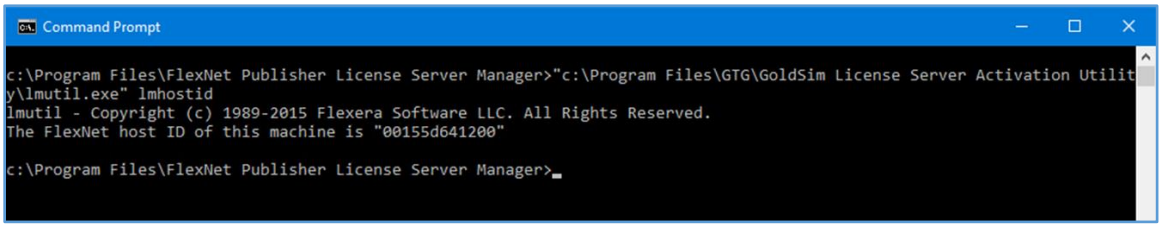

Figure 84: Example of `lmutil.exe lmhostid` usage

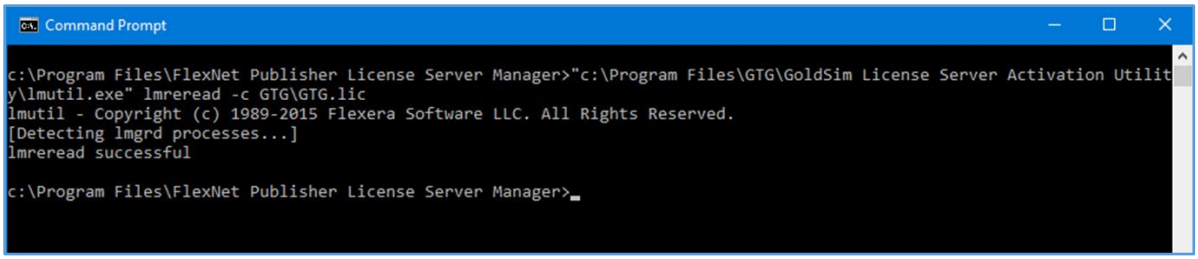

Figure 85: Example of `lmutil.exe lmreread` usage

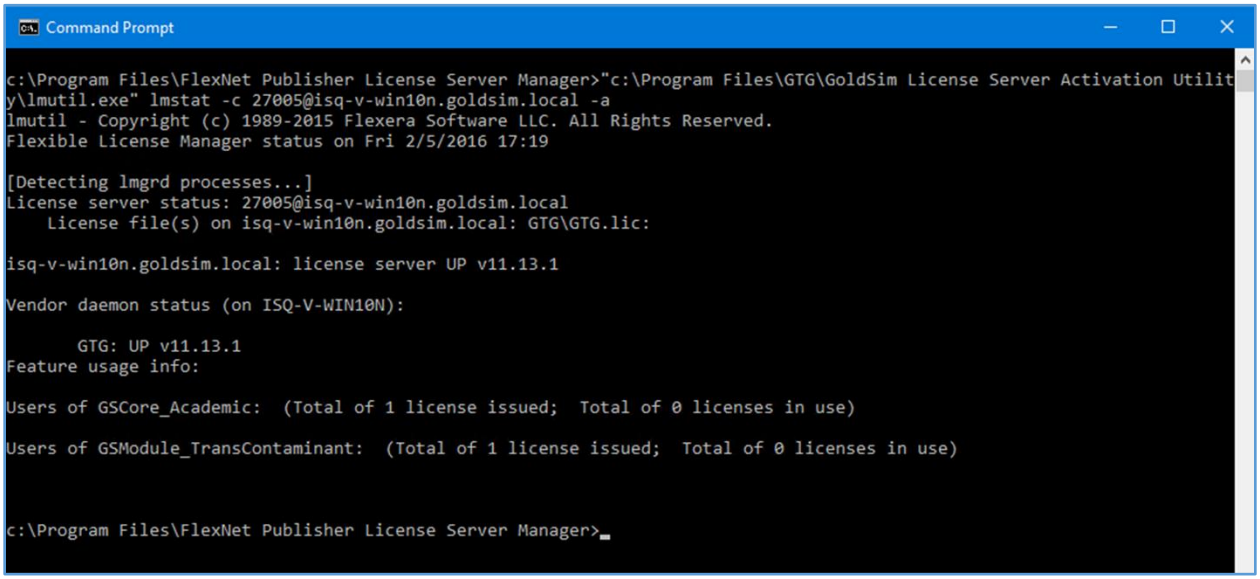

Figure 86: Example of `lmutil.exe lmstat` usage with port@FQDN syntax

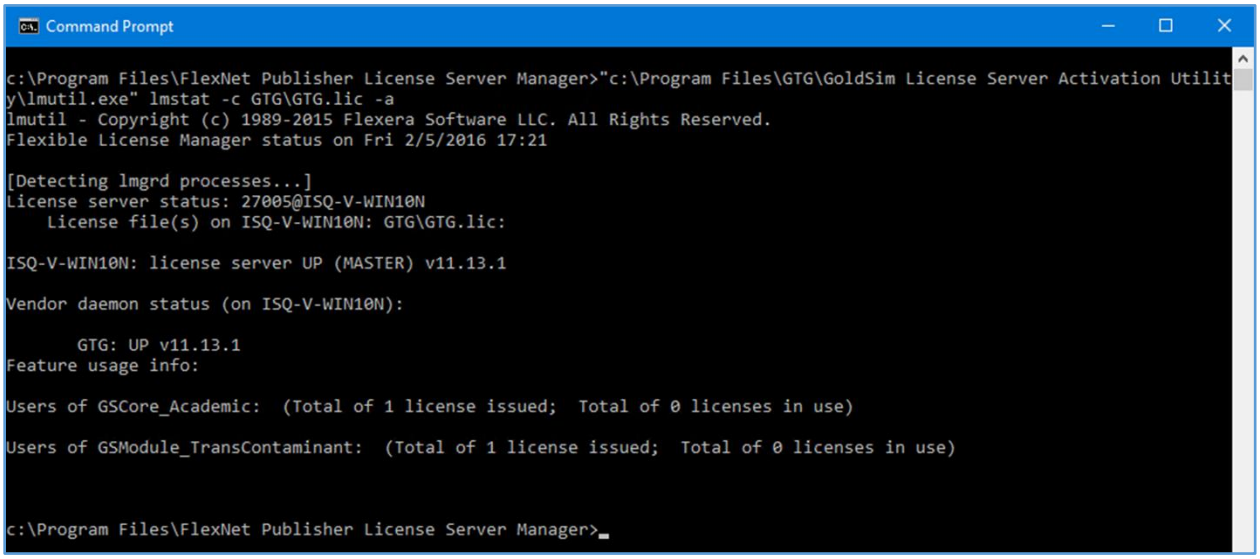

Figure 87: Example of `lmutil.exe lmstat` usage, referencing license file

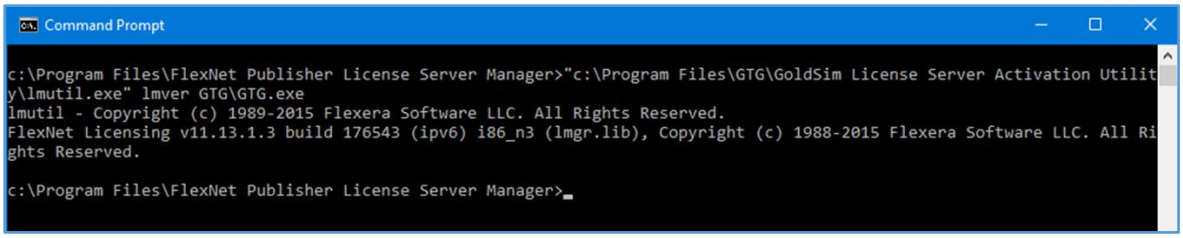

Figure 88: Example of `lmutil.exe lmver` usage

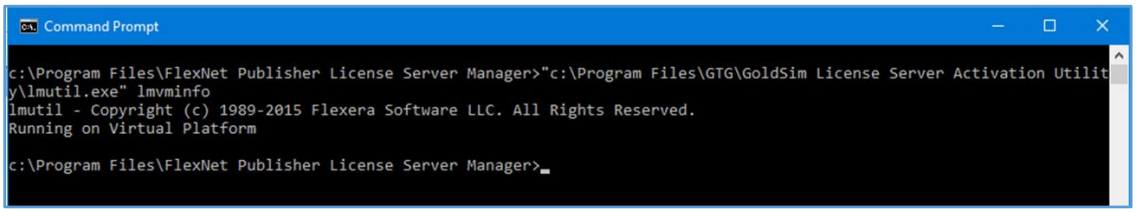

Figure 89: Example of `lmutil.exe lmvminfo` usage

7.9 Options File

The options file allows the License Administrator to control various operating parameters within the constraints of the license model. The items/configurations set in the options file are completely under the control of the License Administrator. These configurations/options only apply to Concurrent Network licenses (i.e. floating licenses) and borrowed fulfillments of this type of license.

In the options file, the License Administrator can:

- Allow the use of features,
- Deny the use of features,
- Reserve licenses,
- Allow activation of licenses in a specific fulfillment record,
- Deny activation of licenses in a specific fulfillment record,
- Restrict the number of licenses available,
- Control the amount of information logged about license usage,
- Enable a report log file, and
- Control the automatic rereading of licenses.

Options file syntax is created and maintained by Flexera. As a result, **FlexNet Publisher: License Administration Guide** provides the definitive reference on the options file. In the following sub-sections, some simple options file example implementations are illustrated.

7.9.1 Creating an Options File

An options file is just a text file with keyword value pairs. The file can be created in any text editor using the accepted keywords and values which are documented **FlexNet Publisher: License Administration Guide**. An example options file is shown in **Figure 90**. The keywords and values, used in this example options file, are described in **Table 3**. To enable an options file, the following items need to be completed.

1. The full path to the options file needs to be added to the second line of the license file (i.e. the VENDOR line in GTG.lic), in the fourth field of the line as shown in **Figure 91**.
2. The vendor daemon needs to be stopped and restarted so that the options file is read.

The complete list of supported Options File keywords is available in ***Chapter 13 – Managing the Options File*** of the **FlexNet Publisher: License Administration Guide**. **Figure 91** and **Table 3** only provide an arbitrarily selected subset of keywords.

- **Note:** that FNP has both certificate-based and trusted storage-based licensing libraries. GoldSim only uses the trusted storage-based licensing libraries. Consequently, only a subset of the Options File keywords available in ***Chapter 13 – Managing the Options File*** of **FlexNet Publisher: License Administration Guide** will work with the GoldSim License Server.
    - Typically, any Options file keyword with "BORROW" in it will NOT work and those with "ENTITLEMENT" or "ACTIVATION" will work.
- A License Administrator should test all of the Options file syntax thoroughly before deployment in the "wild".

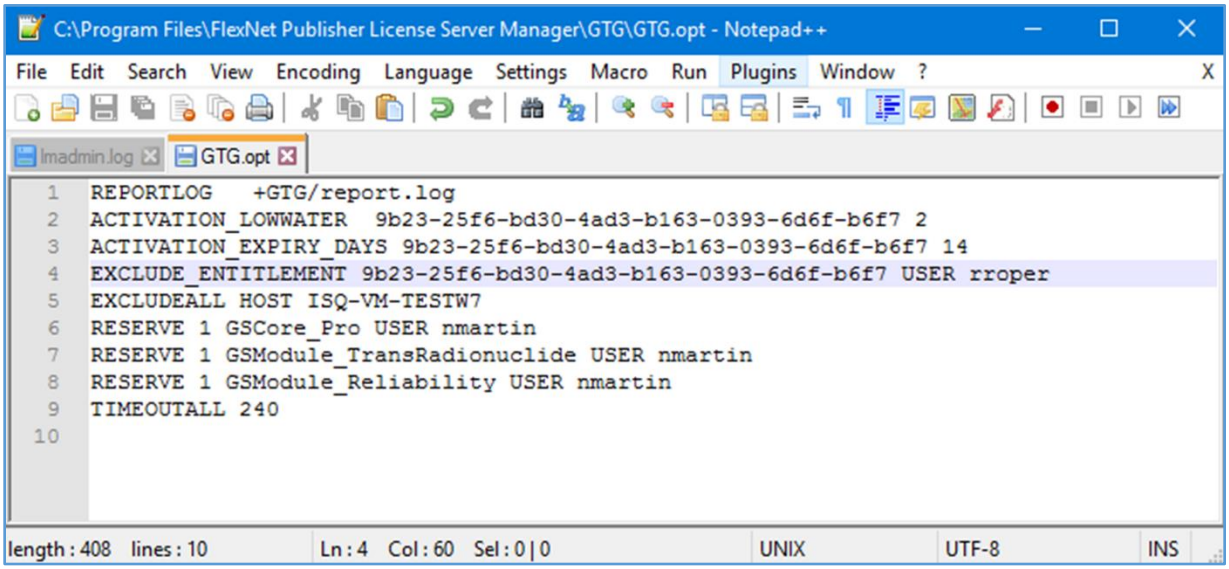

Figure 90: An example options file

Table 3: Description of Options Keywords used in example options file

Options Keyword	Description	Example Notes
ACTIVATION_LOWWATER	Controls the number of licenses that cannot be borrowed or transferred.	In **Figure 90**, this means that only 1 license/seat can be borrowed at a time because there are 3 seats total in this license.
ACTIVATION_ EXPIRY_DAYS	Controls the activation request based on the expiration dates mentioned in options file during activation.	In **Figure 90**, this means that a license cannot be borrowed for more than 14 days. A longer borrowing request will result in an error.
EXCLUDEALL	Deny a user access to all features served by this vendor daemon.	In **Figure 90**, this means that all users from computer ISQ-VM-TESTW7 cannot borrow or check-out a license.
REPORTLOG	Specify that a report log file suitable for use by the FlexNet Manager license usage reporting tool be written.	The FlexNet Manager license usage reporting tool is an add-on product sold by Flexera, called FlexNet Manager for Engineering Applications (see Section **7.4.1**).
RESERVE	Reserve licenses for a user or group of users/hosts.	In **Figure 90**, this means that user "nmartin" always has one copy of each of the three features in the license reserved. Note that the feature names are the first word after "INCREMENT" in trusted storage (see **Figure 67**).
TIMEOUTALL	Set idle timeout on all features.	In **Figure 90**, this means that all features timeout after 4 minutes of no connection between the client and the license server.

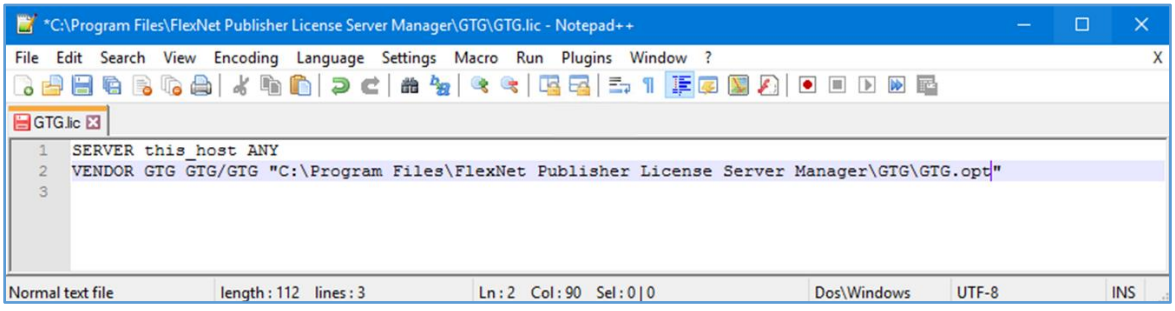

Figure 91: License file with options file path in fourth entry on VENDOR line

7.10 Environment Variables

"Every process has an environment block that contains a set of environment variables and their values. There are two types of environment variables: user environment variables (set for each user) and system environment variables (set for everyone) (Microsoft, 2016)." Environment variable settings are not required to use GoldSim or to use FNPLS. However, environment variables can be used for debugging or for changing license default location.

The most commonly employed environment variables related to the GoldSim License Server are listed in **Table 4**. The complete reference on FNPLS-related environment variables and suggested settings is provided in ***Chapter 24: Environment Variables*** of **FlexNet Publisher: License Administration Guide**.

Table 4: Common Environment Variables

Environment Variable	Definition
FLEXLM_TIMEOUT	(Windows only) Sets the timeout value a FlexEnabled application uses when attempting to connect to a license server. Values are in microseconds, within the range of 200000 through 2,0000000. The default value is 300,0000 microseconds (that is 3 seconds).
LM_LICENSE_FILE	Reset path to license file. Can be a license search path, separated by ":" on UNIX and ";" on Windows. If VENDOR_LICENSE_FILE used, VENDOR is the vendor daemon name used by this application. For example, Flexera Software products use MVSN_LICENSE_FILE. Can be a file name, or port@host. See also "Setting the License Search Path Using an Environment Variable" (VENDOR_LICENSE_FILE requires version 6.0 and later clients) in **FlexNet Publisher: License Administration Guide**.

8 Troubleshooting

The standard troubleshooting approach follows the installation and configuration sequence of Sections **2.1**, **3**, and **4.1**.

1. Check that ***lmadmin*** is running (see Sections **4.1**, **5.1.3**, and **7.1**).
    - If not, check the lmadmin.log file (see Section **7.4**).

2. Check that there is a "fully trusted" and valid fulfillment (i.e. license) in server Trusted Storage (see Sections **2.1** and **5.2**).
    - **Note** that you need to stop ***lmadmin*** before running ***GLSActUtil***.

3. Check that the vendor daemon, ***GTG.exe***, is up and running (see Sections **4.1**, **5.1.3,** and **7.8**).
    - If not, check the GTG.log file (see Sections **4.1** and **7.4**).
    - If nothing else makes sense or seems to be working, you can always:
        i. Delete the vendor daemon GTG from the ***lmadmin*** web GUI using the "Delete" button/option shown in **Figure 41**.
        ii. If an Options File exists, check the Options file for syntax issues like an incorrect/old entitlementID term. Fix any syntax issues.
        iii. Redo the GTG vendor daemon install (into ***lmadmin***) as shown in **Figure 38**, **Figure 39**, and **Figure 40**.
        iv. Re-start the vendor daemon as discussed in Section **4.1**, Item #**8**.
    - If the vendor daemon deletion does not work, it is possible that the ***lmadmin*** service start-up has become corrupt, **if and only if**, you are starting ***lmadmin*** as a Windows service as discussed in Section **7.1**.
        i. Delete the vendor daemon GTG from the ***lmadmin*** web GUI using the "Delete" button/option shown in **Figure 41**.
        ii. Then, stop ***lmadmin***.
        iii. Remove the ***lmadmin*** Windows Service using the ***lmadmin*** command line options discussed in Section **7.2**.
        iv. Start ***lmadmin*** from the command line using the "-foreground" switch.
            1. `lmadmin.exe -configDir "C:\ProgramData\FLEXlm\lmadmin\conf" -foreground`
        v. Open the ***lmadmin*** web GUI (see Section **5.1.1**) to confirm that ***lmadmin*** has started.
        vi. Stop ***lmadmin*** (use Ctrl+C on the command window or use Task Manager).
        vii. Redo the GTG vendor daemon install (into ***lmadmin***) as shown in **Figure 38**, **Figure 39**, and **Figure 40**.
        viii. Start ***lmadmin*** using the "-foreground" switch again.
            1. `lmadmin.exe -configDir "C:\ProgramData\FLEXlm\lmadmin\conf" -foreground`
        ix. Open the ***lmadmin*** web GUI (see Section **5.1.1**) to confirm that ***lmadmin*** and the GTG vendor daemon have started.

x. Stop ***lmadmin*** (use Ctrl+C on the command window or use Task Manager).
xi. Reinstall the ***lmadmin*** Windows Service using the ***lmadmin*** command line options discussed in Section **7.2**.
xii. Start the ***lmadmin*** Windows Service (see **Figure 25**).
xiii. Open the ***lmadmin*** web GUI (see Section **5.1.1**) to confirm that ***lmadmin*** and the GTG vendor daemon have started and that licenses are available.

4. Check out a license from a client running on the same machine as the license server.

5. Check out a license from a client running on the same local area network and a machine that is part of the same domain as the license server.
    - If your failure is at this point, then check the firewall settings (see Section **7.7**).

If you require assistance from GTG, please send an email to support@goldsim.com.

- Provide a clear description of your issue with copies of all log files (see Section **7.4**) and screen shots of all error messages.

- Additionally, please use the "Advanced…" button in ***GLSActUtil*** and the "Copy to Clipboard" option (see **Figure 11**) to include a detailed fulfillment/license listing. An example listing is shown below in **Figure 92**.

- GTG will analyze your submission and assist you to get your GoldSim License Server up and running again.
    - The support restrictions noted in Section **1.3** will apply.
    - GTG reserves the right to require the purchase of "Advanced Support" time as a requirement for advanced assistance.

```
HOST INFORMATION:
Computer Name: ISQ-V-SRV2012R2.GoldSim.local
Computer Type: virtual (F=MICROSOFT, N=HYPERV)

PLATFORM DETAILS:
Running on Virtual Platform
VM FAMILY: MICROSOFT
VM NAME: HYPERV
VM UUID: E1D3758C-8709-40D8-B67A-5B0E741C6B40
VM GENID: 1cca05e6b359f4ac:21d46390951386f9

UNIQUE MACHINE NUMBERS (UMN):
ERROR: UMN1 - (50011,71014,3). Not available on this machine.
UMN2 = 1CCFA652F1CC63B050E89E604B6D782098B9340B
UMN3 = D551D220B4BF6B6A194B322C357E860358CF9182
UMN5 = ABA412872783A5F280B3BCED8B7A8EA3A7208F56

LOCAL FULFILLMENTS AND FEATURES:
Fulfillments: Total=1, Expired=0, Untrusted=0, Disabled=0


TRUSTED STORAGE DETAILS:
Viewing server trusted storage.
--------------------------------------------------------------------------------
Fulfillment Id: FID_fc8e0fd6_52f2_4fef_85ca_4b196984e1f9
Fulfillment Type: 6 Publisher Activation
Trust Flags: 0x7 Fully Trusted
Status: Enabled
Entitlement Id: d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05
Product Id: NAME=GoldSim Pro + RL + RT (Network);VERSION=11.1
Expiration Date: 31-Dec-2015
Server chain: http://10.0.10.145:8888/flexnet/services/ActivationService?wsdl
Feature Line(s):


INCREMENT GSModule_TransRadionuclide GTG 11.1 31-dec-2015 1 \
    VENDOR_STRING=CRYPKEY=:::: DUP_GROUP=UHD ISSUER="GoldSim \
    Technology Group LLC" ISSUED=15-dec-2015 \
    NOTICE="COMPANY=::Wily Coyote Corporation:: PO=::TestSRV2:: \
    PN=::PRO-00-RL-RT-N.11.1::" \
    SN="ENTITLE=::ee58-8d2f-5220-44b9-91f7-4a0d-b5af-b4ec:: \
    ACTIV=::d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05::" \
    START=14-dec-2015 TS_OK SIGN="0052 C3FC 92BC 30EE 5BF4 A003 \
    AEB3 4EAB 50C3 8468 7302 FABD 9DEB 1534 7917 EE2C A5E5 DAF7 \
    D781 108A C16B"
INCREMENT GSCore_Pro GTG 11.1 31-dec-2015 1 \
    VENDOR_STRING=CRYPKEY=:::: DUP_GROUP=UHD ISSUER="GoldSim \
    Technology Group LLC" ISSUED=15-dec-2015 \
    NOTICE="COMPANY=::Wily Coyote Corporation:: PO=::TestSRV2:: \
    PN=::PRO-00-RL-RT-N.11.1::" \
    SN="ENTITLE=::ee58-8d2f-5220-44b9-91f7-4a0d-b5af-b4ec:: \
    ACTIV=::d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05::" \
    START=14-dec-2015 TS_OK SIGN="0235 D155 07D2 189D BC47 1E22 \
    3D89 57DD 9085 5074 2503 7F44 01EA 9137 5B7D B6BF 706A F4CD \
    D1B6 53D4 94D8"
INCREMENT GSModule_Reliability GTG 11.1 31-dec-2015 1 \
    VENDOR_STRING=CRYPKEY=:::: DUP_GROUP=UHD ISSUER="GoldSim \
    Technology Group LLC" ISSUED=15-dec-2015 \
    NOTICE="COMPANY=::Wily Coyote Corporation:: PO=::TestSRV2:: \
    PN=::PRO-00-RL-RT-N.11.1::" \
    SN="ENTITLE=::ee58-8d2f-5220-44b9-91f7-4a0d-b5af-b4ec:: \
    ACTIV=::d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05::" \
    START=14-dec-2015 TS_OK SIGN="02DC DA84 EBB3 C190 41D1 5EF4 \
    CBCB C21C AD77 48A3 2003 7198 982B 7D80 CE17 B539 1752 C51E \
    2332 27D7 C062"


Concurrent: 0
Activatable: 0
Hybrid: 5
Concurrent overdraft: 0
Activatable overdraft: 0
Hybrid overdraft: 0
Repair: 0

Deduction count: 0

```

Figure 92: *GLSActUtil* - Example of "Advanced...", "Copy to Clipboard" output (continued)

```
Viewed 1 of 1 fulfillment records.


Transaction Log Details:
Viewing server trusted storage.
--------------------------------------------------------------------------------
Fulfillment Id: FID_fc8e0fd6_52f2_4fef_85ca_4b196984e1f9
Fulfillment Type: 6 Publisher Activation
Trust Flags: 0x7 Fully Trusted
Status: Enabled
Entitlement Id: d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05
Product Id: NAME=GoldSim Pro + RL + RT (Network);VERSION=11.1
Expiration Date: 31-Dec-2015
Server chain: http://10.0.10.145:8888/flexnet/services/ActivationService?wsdl
Feature Line(s):


INCREMENT GSModule_TransRadionuclide GTG 11.1 31-dec-2015 1 \
    VENDOR_STRING=CRYPKEY=:::: DUP_GROUP=UHD ISSUER="GoldSim \
    Technology Group LLC" ISSUED=15-dec-2015 \
    NOTICE="COMPANY=::Wily Coyote Corporation:: PO=::TestSRV2:: \
    PN=::PRO-00-RL-RT-N.11.1::" \
    SN="ENTITLE=::ee58-8d2f-5220-44b9-91f7-4a0d-b5af-b4ec:: \
    ACTIV=::d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05::" \
    START=14-dec-2015 TS_OK SIGN="0052 C3FC 92BC 30EE 5BF4 A003 \
    AEB3 4EAB 50C3 8468 7302 FABD 9DEB 1534 7917 EE2C A5E5 DAF7 \
    D781 108A C16B"
INCREMENT GSCore_Pro GTG 11.1 31-dec-2015 1 \
    VENDOR_STRING=CRYPKEY=:::: DUP_GROUP=UHD ISSUER="GoldSim \
    Technology Group LLC" ISSUED=15-dec-2015 \
    NOTICE="COMPANY=::Wily Coyote Corporation:: PO=::TestSRV2:: \
    PN=::PRO-00-RL-RT-N.11.1::" \
    SN="ENTITLE=::ee58-8d2f-5220-44b9-91f7-4a0d-b5af-b4ec:: \
    ACTIV=::d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05::" \
    START=14-dec-2015 TS_OK SIGN="0235 D155 07D2 189D BC47 1E22 \
    3D89 57DD 9085 5074 2503 7F44 01EA 9137 5B7D B6BF 706A F4CD \
    D1B6 53D4 94D8"
INCREMENT GSModule_Reliability GTG 11.1 31-dec-2015 1 \
    VENDOR_STRING=CRYPKEY=:::: DUP_GROUP=UHD ISSUER="GoldSim \
    Technology Group LLC" ISSUED=15-dec-2015 \
    NOTICE="COMPANY=::Wily Coyote Corporation:: PO=::TestSRV2:: \
    PN=::PRO-00-RL-RT-N.11.1::" \
    SN="ENTITLE=::ee58-8d2f-5220-44b9-91f7-4a0d-b5af-b4ec:: \
    ACTIV=::d543-4168-ffae-4300-9f58-c6f8-0ea6-ef05::" \
    START=14-dec-2015 TS_OK SIGN="02DC DA84 EBB3 C190 41D1 5EF4 \
    CBCB C21C AD77 48A3 2003 7198 982B 7D80 CE17 B539 1752 C51E \
    2332 27D7 C062"


Concurrent: 0
Activatable: 0
Hybrid: 5
Concurrent overdraft: 0
Activatable overdraft: 0
Hybrid overdraft: 0
Repair: 0

Deduction count: 0

Viewed 1 of 1 fulfillment records.
```

Figure 92: *GLSActUtil* - Example of "Advanced...", "Copy to Clipboard" output

9 References

Flexera Software LLC. (2014). *UNDERSTANDING VIRTUALIZATION FEATURES IN FLEXNET PUBLISHER.* Flexera Software LLC.

Flexera Software. (March 2017). *FlexNet Publisher 2016 R2 SP1 (11.14.1.1): License Administration Guide.* Flexera Software LLC.

Microsoft. (2016). *Environment Variables*. Retrieved Sep 27, 2016, from Windows Dev Center: Developer Resources: https://msdn.microsoft.com/en-us/library/windows/desktop/ms682653(v=vs.85).aspx