Version 15.02

Hands-On Workshop

Set up, Deploy, and Manage Licenses

with

NI Volume License Manager

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NATIONAL INSTRUMENTS

Introduction

The **NI Volume License Manager Hands-On** addresses many of the responsibilities of a software adminstrator, such as setup, deployment, and management of software licenses for users throughout an organization that uses National Instruments software, such as **LabVIEW**, **TestStand**, and **DIAdem**. The optimal tool for assigning licenses, creating software distributions, and reporting usage is NI Volume License Manager 3.x.

The following exercises will allow for several PCs to be attached to NI Volume License Manager via a network.

Server
NI Volume License Manager 3.x
Windows 7
Simulated DHCP Server

Ethernet switch
Unmanaged
5-port

Client A
Windows 7
"Stand-alone ATE"

Requires:
TestStand (Full-time)

Client B
Windows 7
"In-house Developer"

Requires:
TestStand (Part-time)
LabVIEW (Full-time)

Client C
Windows 7
"In-house Developer" and "Data Analyzer"
Requires:
TestStand (Part-time)
LabVIEW (Full-time)
DIAdem (Full-time)

Client D
Windows 7
"Short-term Contractor"
Requires:

Multisim (Full-time)

Exercise 1: Setup License on NI VLM

Goal: Setup NI Volume License Manager (NI VLM) on the server PC with a pre-configured NI License File.

1. Launch **NI Volume License Manager**.

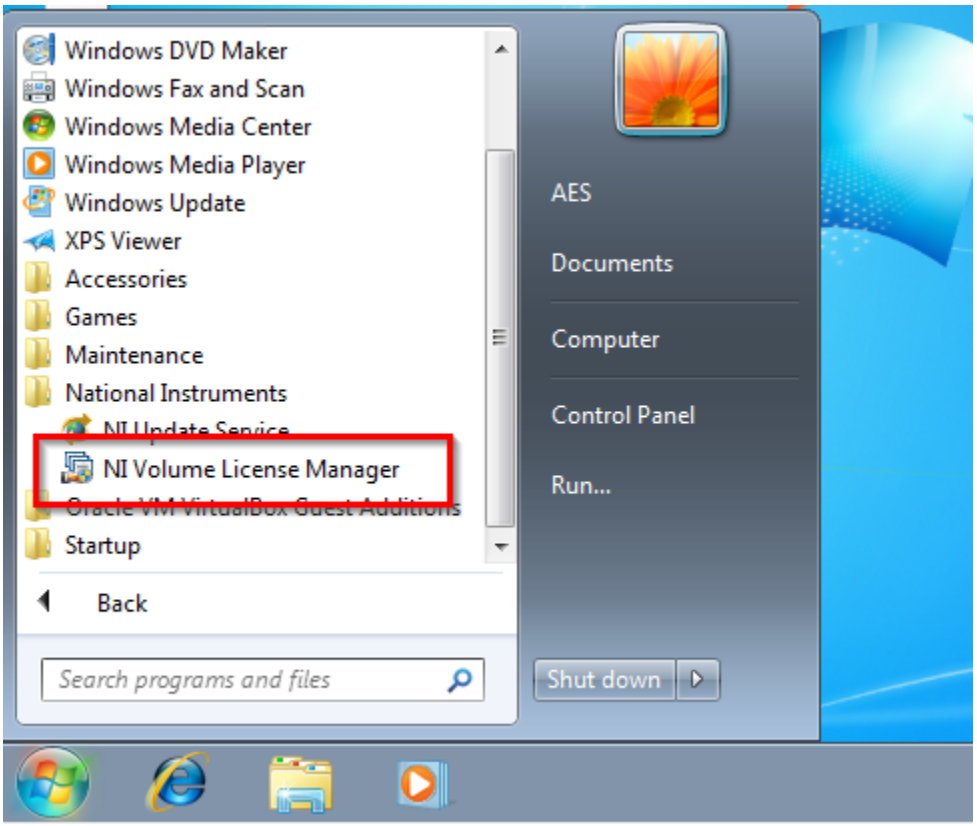

Figure 1

2. The first time NI VLM is launched, the NI VLM Getting Started Window is presented. The window provides links to the help files describing the new features of the latest version of NI VLM. Click **Next**.

3. Select **I have an agreement license file for this computer** and click the **[…]** to select the file **NIHandsOn01.lic** from the directory `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Exercise 1`.

4. **Note:** If you did not already have the license file, you would have to first select **I do not have an agreement license file for this computer**, to be guided through creating an email to agreements@ni.com which contains all the necessary details to build a license, such as Server name, Computer ID, Service ID, and license types.

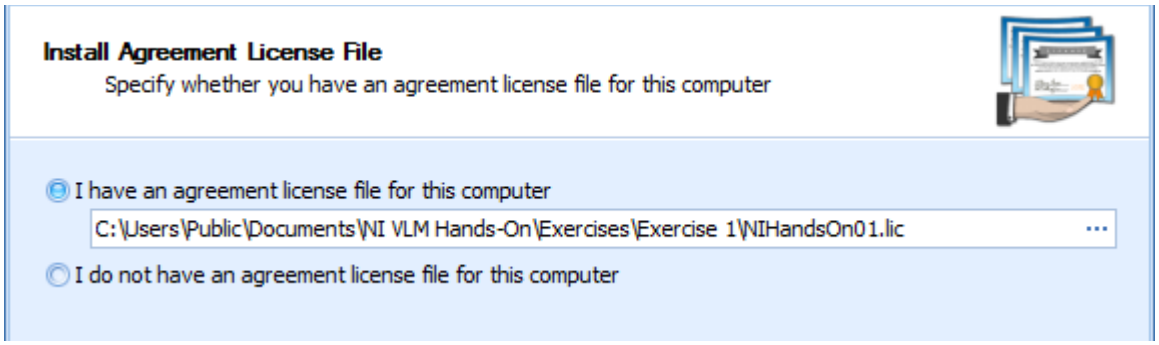

Figure 2

5. Select **Do not import settings** and click **Next**. If upgrading from a previous installation of NI VLM, the other options in this window are used to import licensing settings and existing user permissions that had been backed up or exported.

6. Enter representative data under **Administrator Information**. Keep the default settings for **Ports**. Click **Next**.

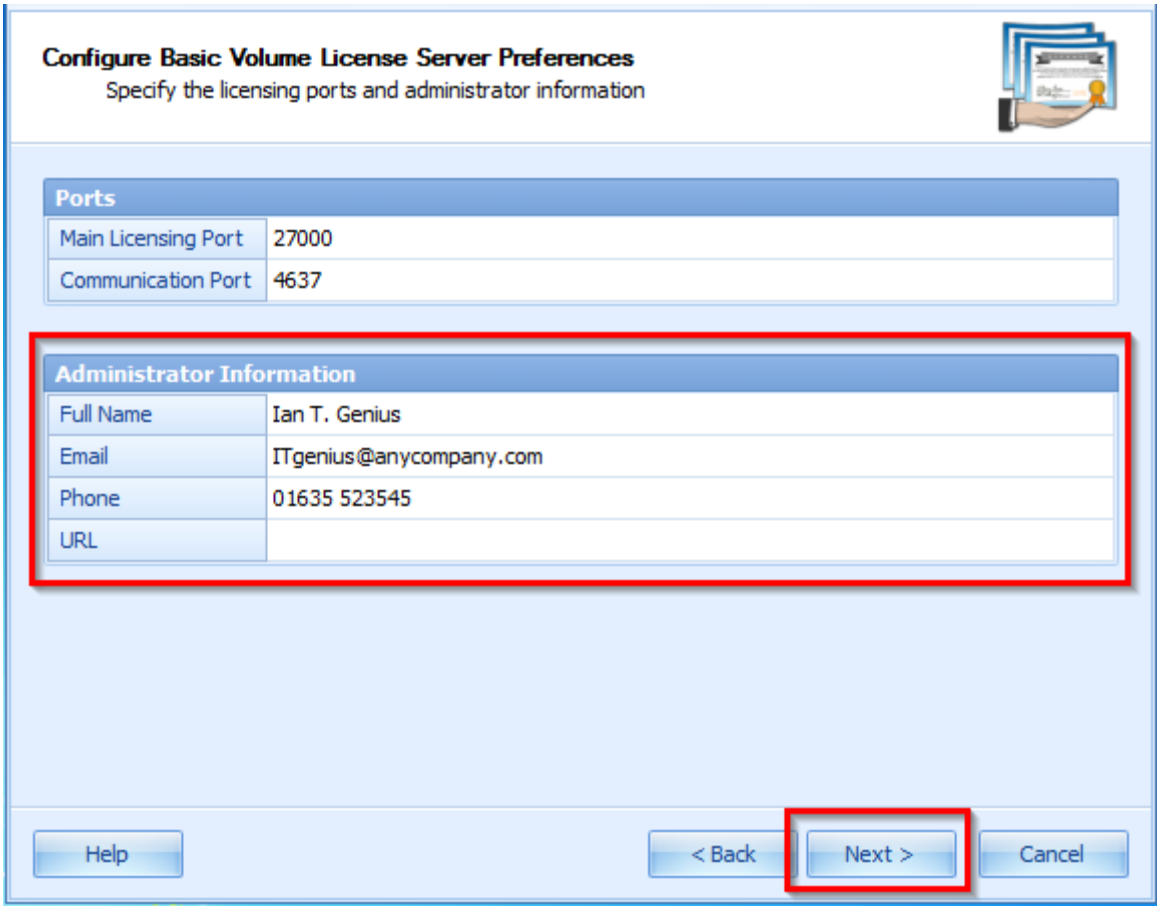

Figure 3

7. Select **Allow NI VLM to send my VLA Log to National Instruments automatically**. Click **Next**. The VLA Log stores usage information of NI VLM-controlled software, along with client information. NI uses this information during the renewal of the VLA and is required.

8. The **Configure Email Preferences** window can assist in connecting to your local mail server to send secure emails containing the VLA Log, receive Administrator Notifications, or email users their license files. During this exercise, leave all fields as **default** and click **Next**.

9. Click **Finish**. NI VLM now contains the following licenses:

Software	Version	Number of Licenses	License Model
Developer Suite	Core	2	Computer-Based
DIAdem	Professional	2	Computer-Based
Multisim	Power Pro	2	Computer-Based
TestStand	Development System	2	Managed Concurrent Computer-Based

10. The NI VLM service is not running yet on the volume license server and no users have been allocated licenses. Before moving further, best practice is to first edit the system-wide preferences. Navigate to **Tools»Preferences** from the main menu.

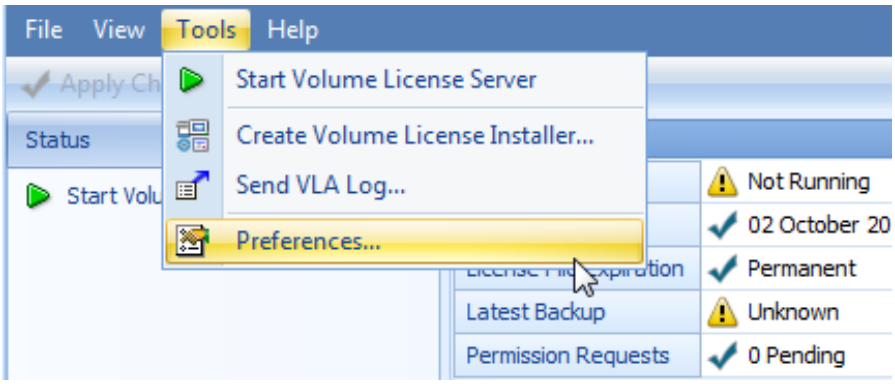

Figure 4

11. In the **General** tab, set the fields as shown in the following figure.

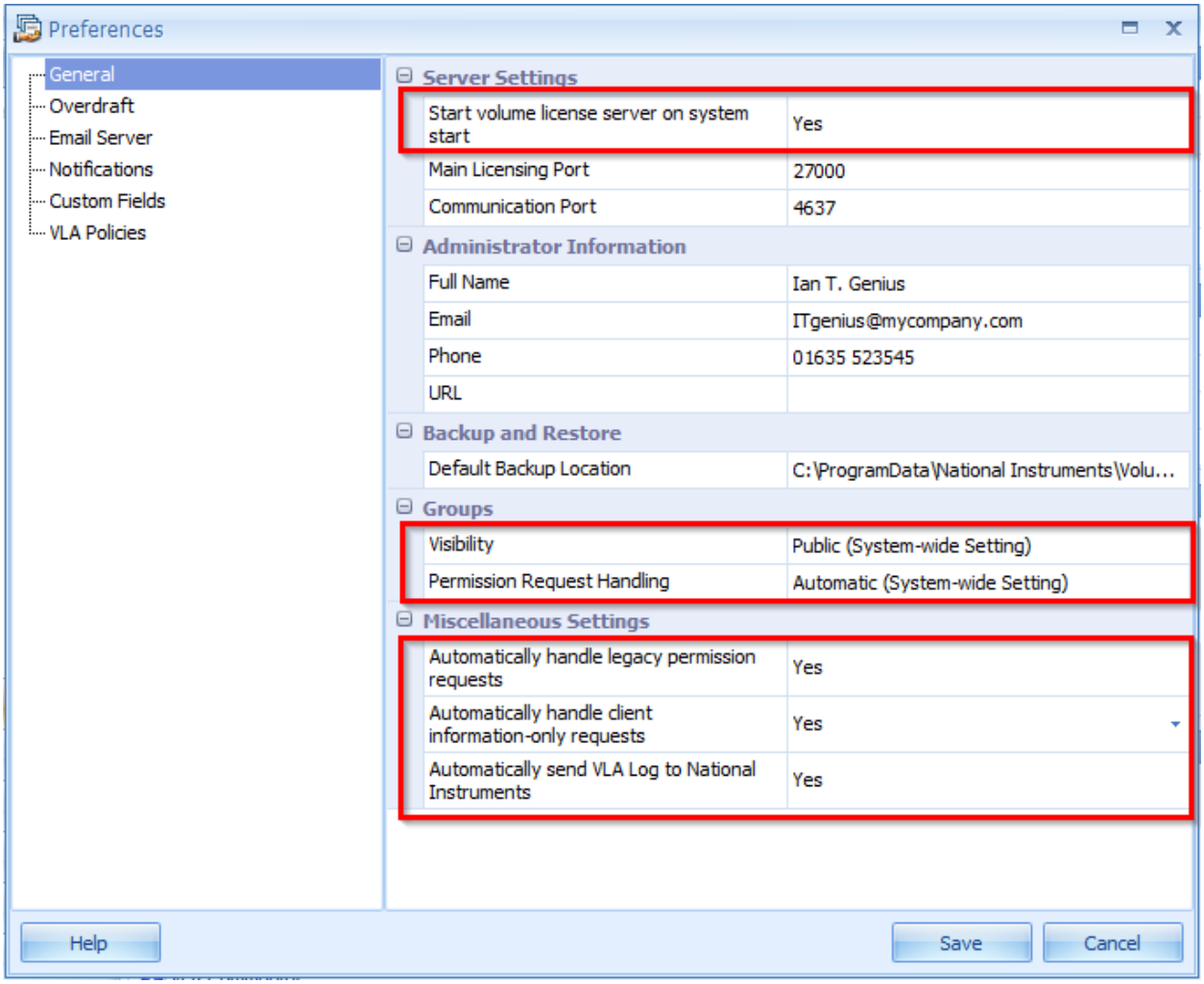

Figure 5

12. In the **Custom Fields** tab, set all to **Optional** for the purpose of this exercise. **Read** the pop-up message and click **OK** to ignore the message.

13. **Note:** In your organization, select **Required** for the fields that are required for reporting and billing to cost centers. The **Full Name** and **Email address** are required by NI when reporting software users who require access to the Standard Service Program.

14. Explore the **Notifications** tab to learn more about this feature of the latest version of NI VLM. When an email server is set up in NI VLM, notifications can be automatically sent to the administrator's inbox as reminders for critical events, such as a license nearing expiration, or to create a backup of the user database for safe keeping. Clicking **Help** on the bottom-left will explain these features further. During this exercise, leave all fields as **default**.

15. In the **VLA Policies** tab, set the fields as in the following figure. These settings allow administrators to implement NI Update Service policies to all client installations. This can help ensure a level of software conformity across an organization.

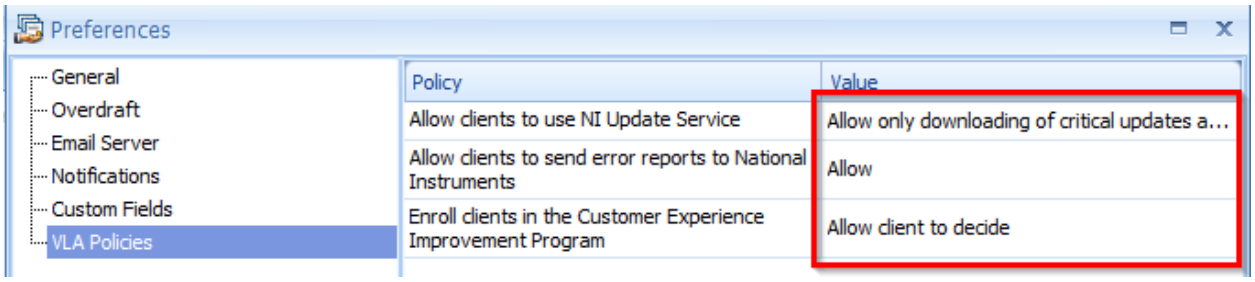

Figure 6

16. Click **Save** to close the **Preferences** window.

17. Click **Apply Changes**. **Apply Changes** must always be clicked when any change is made to NI VLM before it is visible to the network.

18. Click **Start Volume License Server** if it has not already been started.

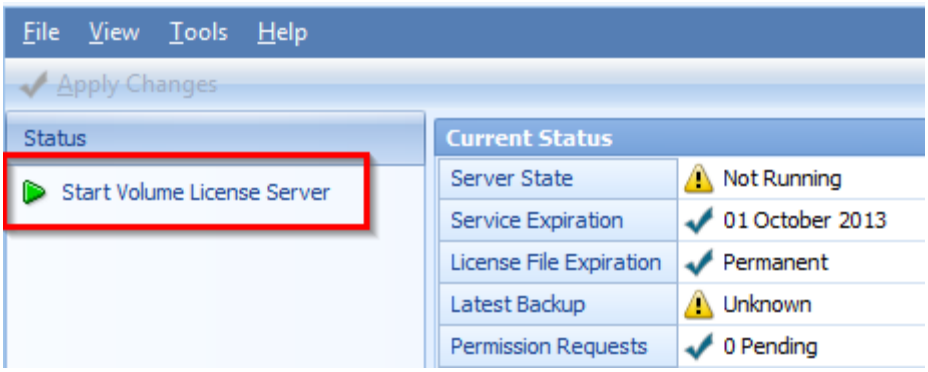

Figure 7

19. **Continue** to Exercise 2.

End of Exercise 1

Exercise 2: Managing Groups with NI VLM

Goal: Manage users and licenses effectively with Groups in NI VLM.

Groups are a collection of licenses and clients. Every client in a given group has permission for each license in that group. You can use groups to define a set of clients that use the same set of software, according to the roles played by engineers in your organization.

1. Review the **Introduction** section of this document to understand the organization's license requirements.
2. In the main NI VLM window, select the **Groups** view.
3. Click **Add Computer Group**.

Figure 8

4. Set the **Name** to **Production Test**. Set the **Description** to **Machines that run Test Sequences**.
5. Click **Add** to the right of the **Licenses** field.
6. Check **TestStand Development System** and click **Add**. Click **Save**.
7. Click **Add Computer Group**.
8. Set the **Name** to **Test Developer**. Set the **Description** to **Machines for Developing Tests**.
9. Click **Add** to the right of the **Licenses** field.
10. Check **Developer Suite** and **TestStand Development System** and click **Add**. Click **Save**.
11. Click **Apply Changes**. **Apply Changes** must always be clicked when any change is made to NI VLM before it is visible to the network.
12. **Continue** to Exercise 3.

End of Exercise 2

Exercise 3a: Configure Clients for NI VLM

Goal: Inspect the client PCs, prepare them for installing software, and link them to the NI VLM server.

Option I: If you have access to client hardware

1. Log into Windows on **all** client PCs.

2. Navigate to **Start»All Programs»National Instruments»NI License Manager.**

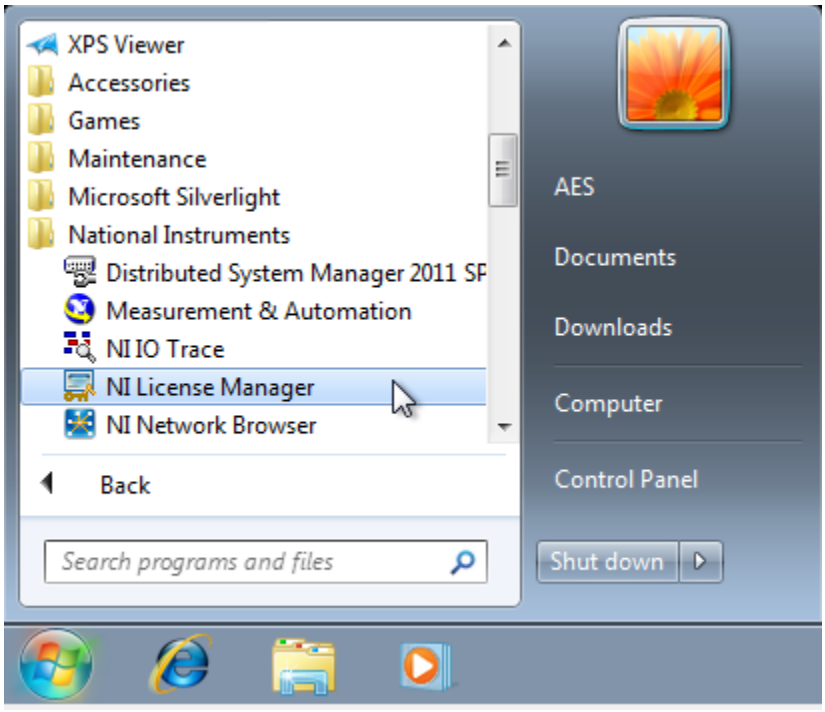

Figure 9

3. Click on **Display Computer Information** or press **F7**.

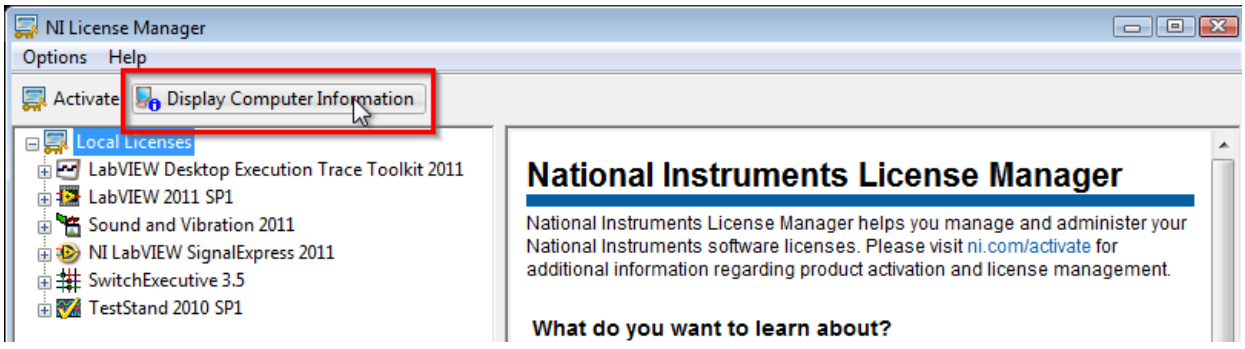

Figure 10

4. Record the **Computer Name** and **Computer ID** of every client on a sheet of paper or in Notepad. **Decide** which machine will be client A through D, as described in the **Introduction**.

5. Clients can be added to NI VLM in the following three ways:

    a. Manually, as part of a group. (ClientA)

    b. Manually, without being assigned to a group. (ClientD)

    c. Automatically, via a distributed Volume License Installer (VLI). (ClientsB and C)

Note: The clients will be added using the above methods in the **following** exercises.

6. **Continue** to the next part of Exercise 3.

Option II: If you do not have access to client hardware

1. **Review** the client PC information that has already been collected using the method in **Option I**.

Computer Name	**Computer ID**
ClientA	JKBL-Y54Q-PD7Z-2CBP
ClientB	R8PD-NKC7-GLW8-Q2VX
ClientC	Y2VB-YY7S-9VCR-B8DB
ClientD	Y2V5-7S7M-TH6M-X6BD

2. Clients can be added to NI VLM in the following three ways:

    a. Manually, as part of a group. (ClientA)

    b. Manually, without being assigned to a group. (ClientD)

    c. Automatically, via a distributed Volume License Installer (VLI). (ClientsB and C)

Note**:** The clients will be added using the above methods in the **following** exercises.

3. **Continue** to the next part of Exercise 3.

Exercise 3b: Manually adding Clients to NI VLM

Goal: Use NI VLM to add two of the client machines manually.

For networks with a small number of machines, it may be faster to manually add machines to NI VLM, either within an existing group, or standalone with an explicit license. For larger networks, Exercise 3c explores automating the addition of clients to NI VLM.

1. On the NI VLM server, navigate to the **Computers** view of the main NI VLM window.
2. Click **Add Computer**.

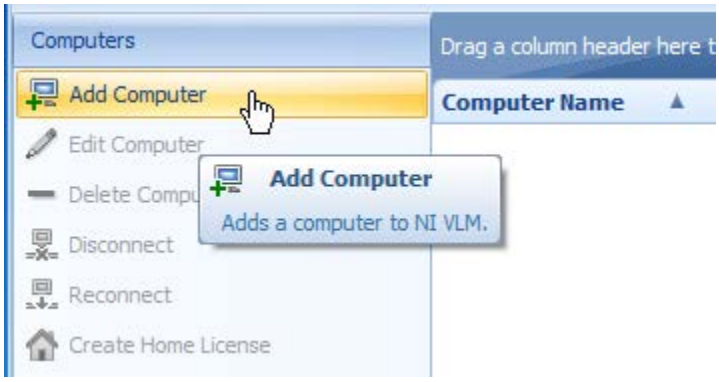

Figure 11

3. Set the **Computer Name** and **Computer ID** to the values logged in **Step 4** for **ClientA**. Be sure to use computer names without spaces, as Windows and NI VLM do not support computer names with spaces.
4. Click **Add** to the right of the **Groups** field.
5. Check **Production Test** and click **Add**. Click **Save.**
6. On the NI VLM server, navigate to the **Computers** view of the main NI VLM window.
7. Click **Add Computer**.

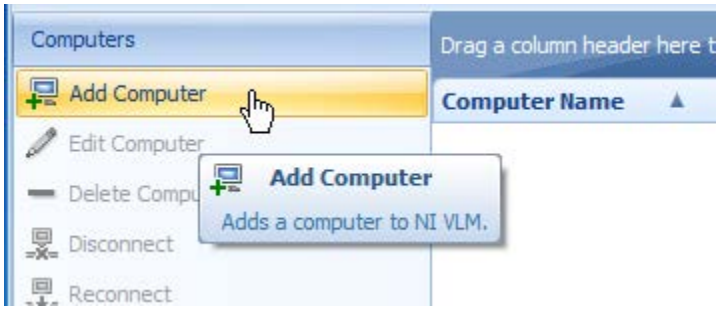

Figure 12

8. Set the **Computer Name** and **Computer ID** to the value logged in **Step 4** for ClientD.

9. Click **Add** to the right of the **Explicit Licenses** field.

10. Check Multisim Power Pro Edition and click Add. Click Save.

11. Click **Apply Changes**. **Apply Changes** must always be clicked when any change is made to NI VLM before it is visible to the network.

Option I: If you have access to client hardware

12. **Log** into Windows onto the **ClientA** and **ClientD** PCs.

13. Navigate to **Start»All Programs»National Instruments»NI License Manager.**

14. In the main menu, navigate to **Optons»Preferences**.

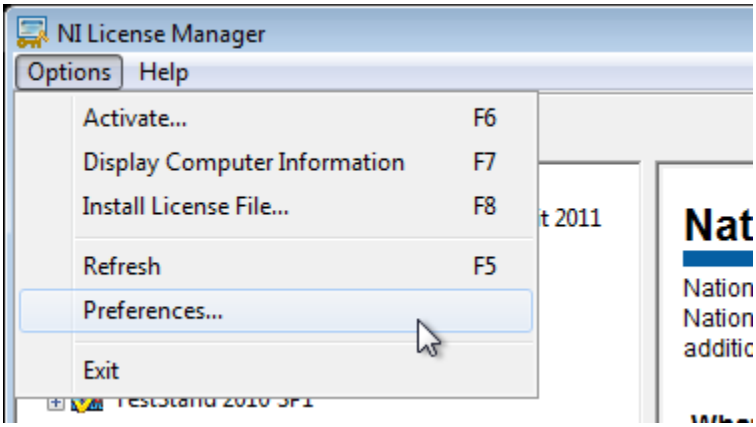

Figure 13

15. Check the box for **Use Volume License Servers** and enter the **Server Name** or **IP Address**.

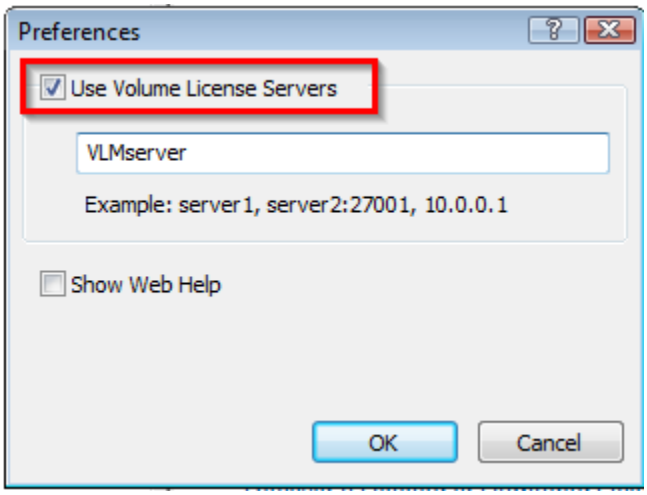

Figure 14

16. Click **OK**. **Expand** the **[+]** next to the server name to inspect whether the server and clients are communicating. **ClientA** should have a **green box** next to the **Product Test** group and the **TestStand** volume license. **ClientD** should only have a **green box** next the **Multisim** volume license.

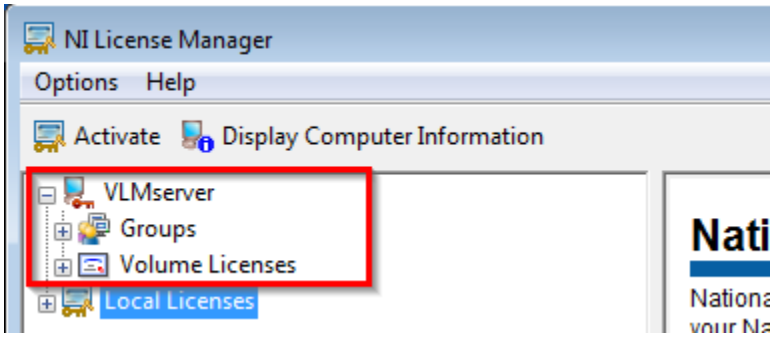

Figure 15

17. **Close** the NI License Manager.

18. **Run** TestStand on **ClientA** or Multisim on **ClientD**. If licensing has been negotiated correctly with NI VLM, then the application should **start immediately**. If a licensing **error** has occurred with NI VLM, you should see a message similar to the figure. Click **more details...** to learn more about the error.

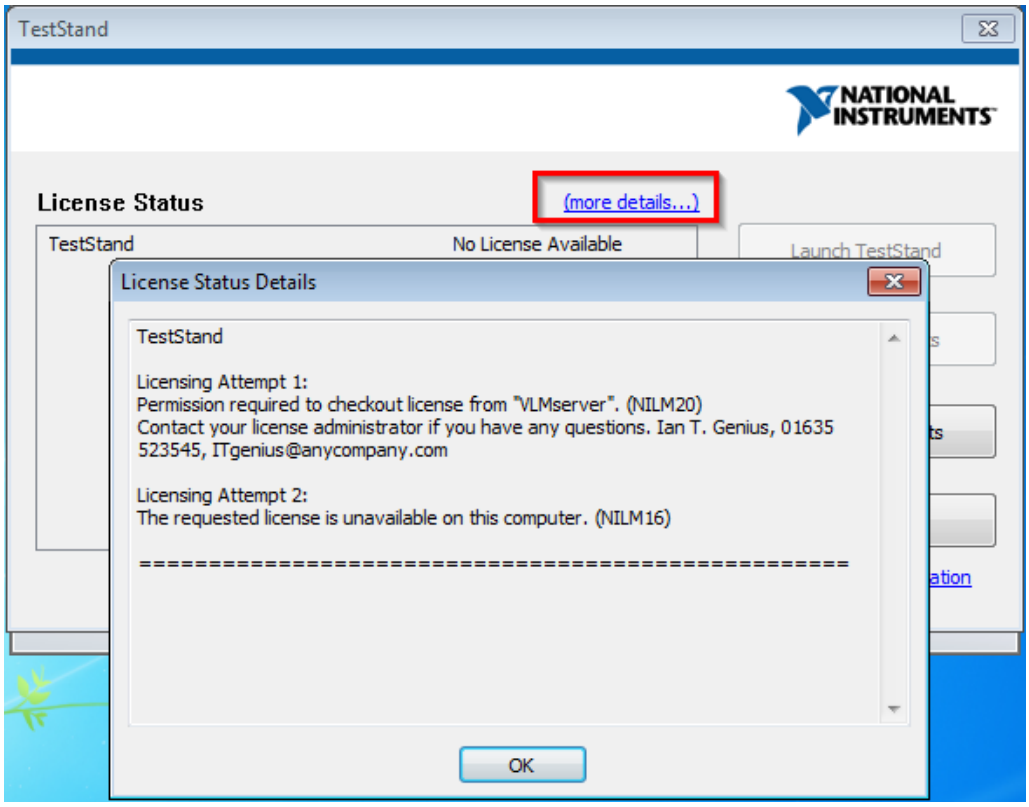

Figure 16

19. **Continue** to the next part of Exercise 3.

Option II: If you do not have access to client hardware

12. Assume that the required clients have been configured as in **Option I**.

13. **Continue** to the next part of Exercise 3.

Exercise 3c: Automatically adding Clients to NI VLM with a silent VLI

Goal: Automate the process of installing NI software on multiple machines and distributing licenses with a Volume License Installer (VLI).

ClientB and **ClientC** are similar machines which both require access to the NI VLM group named **Test Developer**. A VLI automates the process of ensuring several clients **install the same NI software, link to the correct license server, and request a license** from the appropriate group. Several command line switches exist for the VLI to assist the administrator in reducing human error among clients.

1. On the NI VLM server, navigate to **Tools»Create Volume License Installer...**.

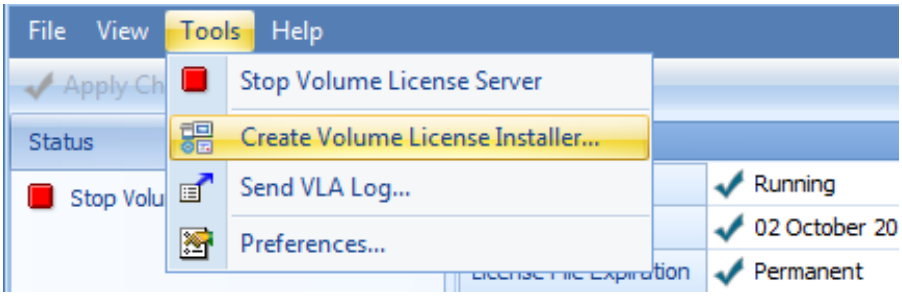

Figure 17

2. Click **Next**.
3. Set the **Source** to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\TestStand 201#`.
4. Set the **Destination** to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\VLI`.
5. Enter **TestStand_VLI** as the **Installer Name**. Click **Next**.

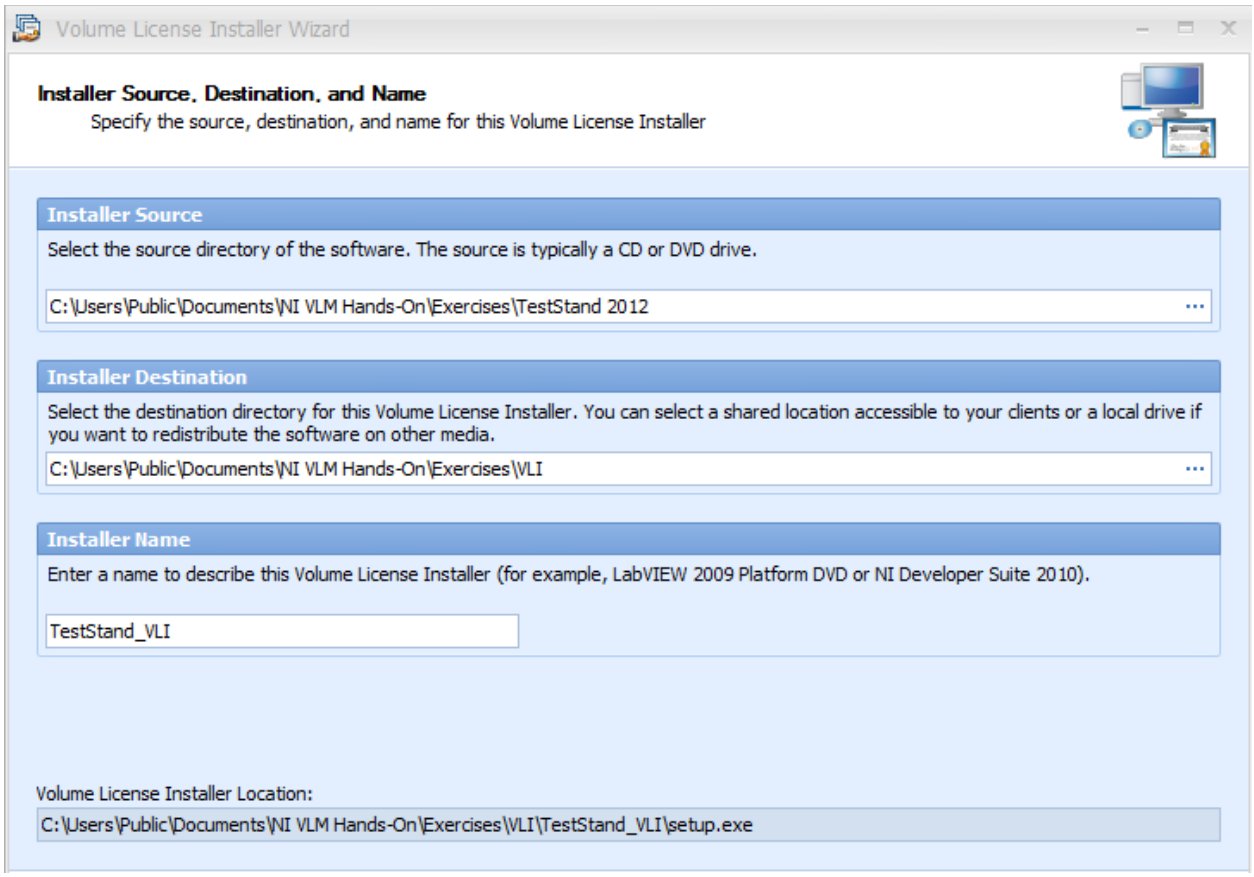

Figure 18

6. Select **Configure Clients to connect to volume license server to check out licenses** and allow the **default** server name. Click **Next**.

7. Select **Do not allow clients to request permission to join any groups** and check **Collect client information and send it to NI Volume License Manager**. These settings are necessary to disable a dialog box for users to choose groups.

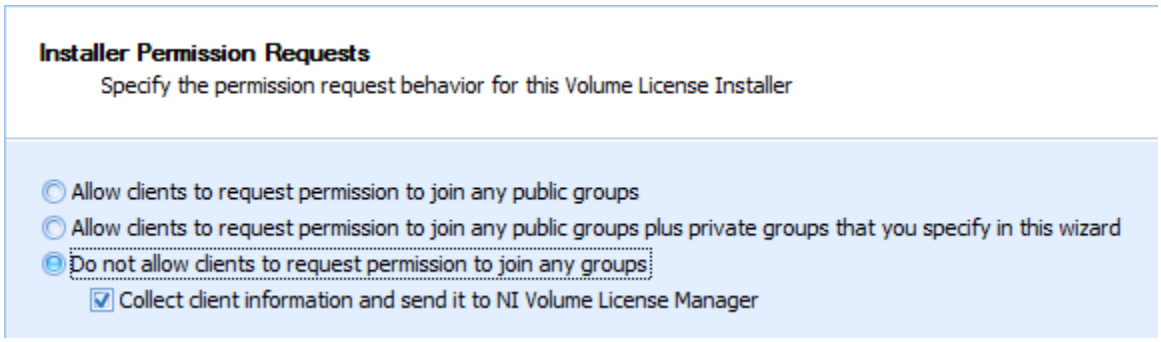

Figure 19

8. Click **Next** and **Build**. **Wait** for the build to complete and click **Finish**.

9. In Windows, **navigate** to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\VLI\TestStand_VLI`.

10. **Note:** The folder now has the **TestStand DVD** contents in **_Src**. A special utility, called **vlmclient.exe**, which is used to automatically configure the client with the server, is stored inside **Client**. **Setup.exe** in the top-level folder would install TestStand on the client and then configure NI License Manager to communicate with the NI VLM server. If software is already installed on the client, it is advised you **only run vlmclient.exe** to configure the NI License Manager. This feature can also be used help migrate several users to a server with a new name on the network.

11. **Navigate** to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Batch Files` to find a pre-made batch file. For a completely **silent** client experience, vlmclient.exe must be run in a Batch file (.bat) with command line switches `/q` for **quiet** and `/groups` to add ClientB and ClientC to the **Test Developer** group.

12. **Right-click** on `VLMclientwithGroups.bat` and select **Edit**.

13. **Above** the text `Pause`, **type** the command `Client\vlmclient.exe /q /groups {GUID}`. The Group Unique ID (GUID) can only be found through NI VLM by following the next three steps.

14. **Note:** Do not use `/q` if you would like users to enter their Full name and email address for NI Technical Support through the Standard Service Program.

15. In NI VLM, navigate to the **Groups** view.

16. Click on the **Test Developer** group and click **Edit**.

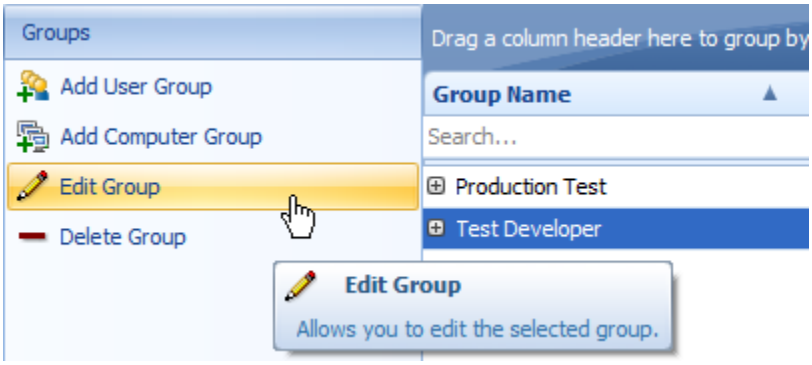

Figure 20

17. **Right-click** on the icon in the top left corner and select **Copy Group Unique ID**.

Figure 21

18. In the batch file, **double-click** on `{GUID}`, **right-click** and select **Paste**.

```
echo and click Send.
client\vlmclient.exe /q /groups {7038ACD4-C67A-44E8-AB1C-91EC7AA1717F}
Pause
```

Figure 22

19. Navigate to **File»Save** and **Close** the batch file.

20. **Close** all open NI VLM windows. The Automatic Permission Handling about to be tested requires that the NI VLM window is not running on the network in order to work as expected.

21. **Copy** the **Batch file** to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\VLI\Installer for Clients`. **Copy** the folder **Client** from `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\VLI\TestStand_VLI` to the same location so it has the same structure as the figure.

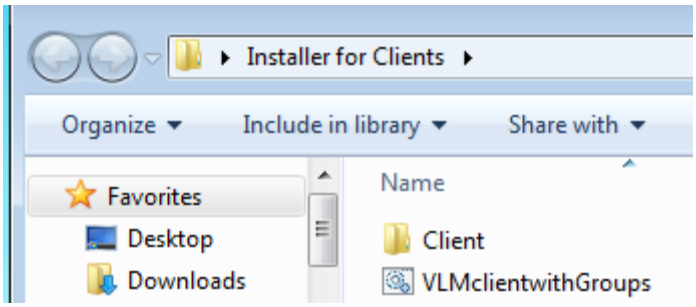

Figure 23

Option I: If you have access to client hardware

22. **Distribute** the folder, **Installer for Clients**, via USB stick or the network to **ClientB** and **ClientC**. Paste the folder in the location of your choice on both client PCs.

23. **Verify** that the NI VLM window is closed on the volume license server.

24. **Note:** Automatic permission request handling is **disabled** while the user interface is open. Requests are stored in the Permission Queue, and you can either approve or deny requests while using NI VLM.

25. **Double-click** `VLMclientwithGroups.bat` on the clients and follow the instructions.

26. Navigate to **Start»All Programs»National Instruments»NI License Manager.**

27. **Expand** the **[+]** next to the server name to inspect whether the server and clients are communicating. **ClientB** and **ClientC** should have a **green box** next to the **Test Developer** group and both the **Developer Suite** and **TestStand** Volume License.

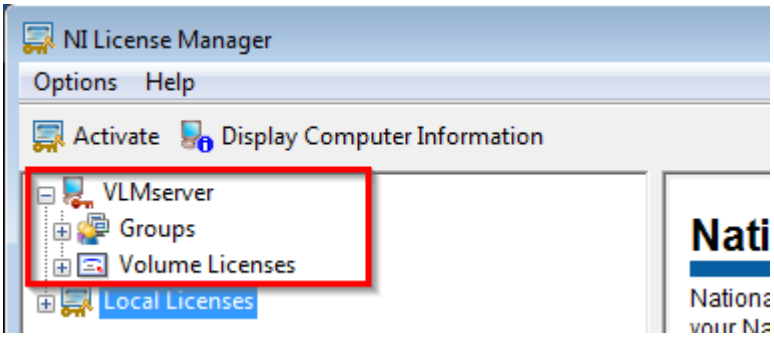

Figure 24

28. **Close** the NI License Manager.

29. **Continue** to Exercise 4.

Option II: If you do not have access to client hardware

22. **Continue** to Exercise 4.

End of Exercise 3

Exercise 4: Disconnecting licenses from NI VLM

Goal: Disconnect licenses from NI VLM to permanently reserve a license for a client or to allow a client to use software without network access.

Option I: If you have access to client hardware

1. **Run** the TestStand Sequence Editor on ClientA, B, and C by navigating to **Start»All Programs»National Instruments»TestStand 201#»Sequence Editor**. NI VLM contains two concurrent licenses, however three machines are trying to access the licenses. One of the three clients will be denied a license until an existing user stops running TestStand.

2. In your organization, **ClientA** represents a piece of Automated Test Equipment that must never be denied a license when it performs a production run. In response to your client's request, as an Administrator, you can investigate which machines are using the concurrent licenses. In NI VLM, navigate to **Licenses**.

3. **Expand** the **[+]** next to **Development System**, under the category **TestStand 201#**. Click the **In Use** tab to view the current usage of this license. You have decided that the best way to assist your client is to permanently reserve a single license from the concurrent pool for ClientA. ClientA will also be able to use software without a network connection.

4. Navigate to the **Computers** view in **NI VLM** on the server.

5. Click once on **ClientA** under Computer Name and select **Disconnect**.

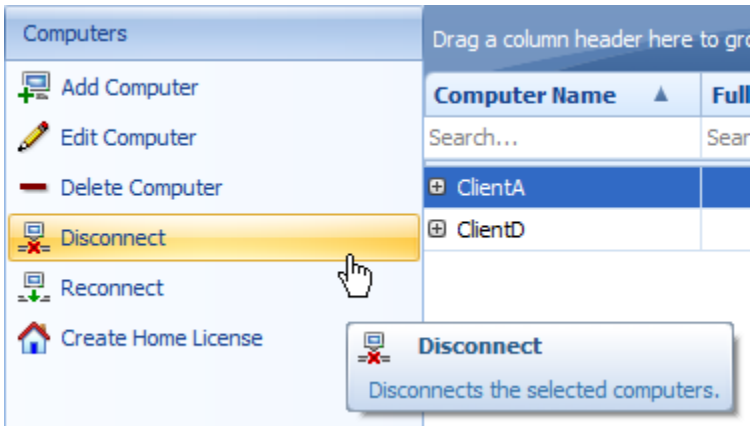

Figure 25

6. Click **Next**.

7. Select **Save disconnected license file** and click on the **[...]** to navigate Windows Explorer to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Disconnected Licenses` and click **OK**.

8. Click **Next**.

9. Select **Never Expire**. Click **Disconnect**.

10. Click **Apply Changes**.

11. **Note:** When the disconnected license file is applied to ClientA, it will be able to always use TestStand without the chance of its license being borrowed by another computer on the network.

12. **Optional**: **Test** the configuration by **copying** the disconnected license file to ClientA via a USB stick. **Install** the license file by pressing **F8** in **NI License Manager**. Notice that ClientB and ClientC negotiate the remaining license between themselves, however, ClientA always has a TestStand license.

13. **ClientD** represents a contractor who will be joining your organization for 3 months as a **temporary circuit designer**. ClientD will not be allowed access to the network and also cannot be given serial numbers for a standalone software seat of Multisim. ClientD will be given a three-month license from the **Computers** view of NI VLM.

14. Click once on **ClientD** under Computer Name and select **Disconnect**.

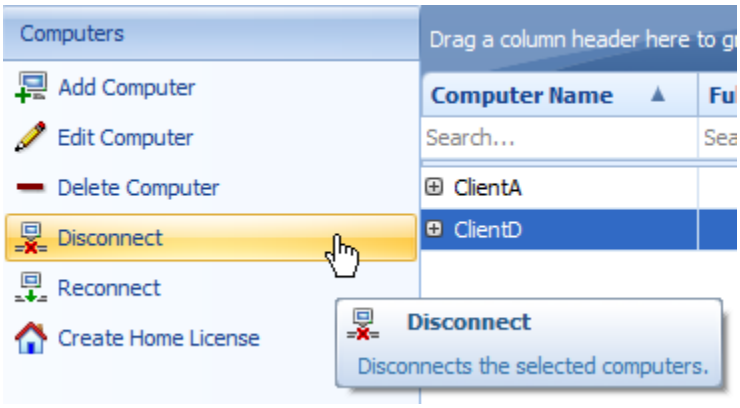

Figure 26

15. Click **Next**.

16. Select **Save disconnected license file** and click on the **[...]** to navigate Windows Explorer to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Disconnected Licenses` and click **OK**.

17. Click **Next**.

18. Select **Expire on a specific date** and select a day 3 months from today. Click **Disconnect**. Click **Finish.**

19. Click **Apply Changes**.

20. **Note:** When the disconnected license is applied to ClientD, it will be able to run Multisim for the period of time the contractor is working with your organization. When the license expires, the risk

of abuse of your organization's licenses is reduced. The license is automatically reconnected to NI VLM on the same date.

21. **Optional**: **Test** the configuration by **copying** the disconnected license file to ClientD via a USB stick. **Install** the license file by pressing **F8** in **NI License Manager**. Notice that ClientD can run Multisim even when disconnected from the Ethernet network. The expiration date is also listed on the right-hand side of the NI License Manager window.

22. **Continue** to Exercise 5.

Option II: If you do not have access to client hardware

1. In your organization, **ClientA** represents a piece of Automated Test Equipment that must never be denied a license when it performs a production run. In response to your client's request, as an Administrator, you can investigate which machines are using the concurrent licenses. In NI VLM, navigate to **Licenses**.

2. **Expand** the **[+]** next to **Development System**, under the category **TestStand 201#**. Click the **In Use** tab to view the current usage of this license. You have decided that the best way to assist your client is to permanently reserve a single license from the concurrent pool for ClientA. ClientA will also be able to use software without a network connection.

3. Navigate to the **Computers** view in **NI VLM** on the server.

4. Click once on **ClientA** under Computer Name and select **Disconnect**.

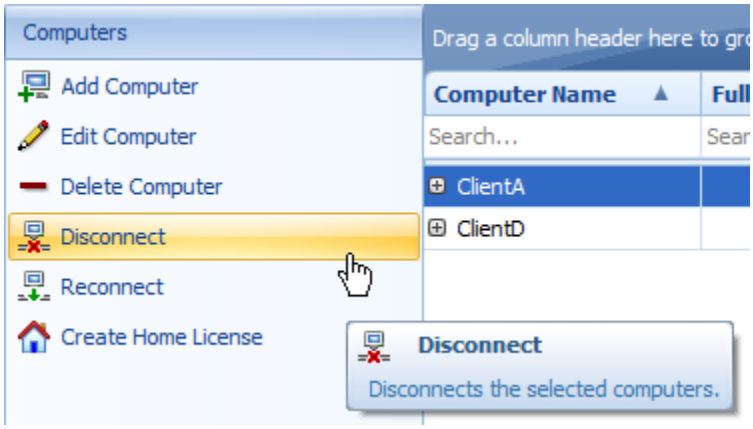

Figure 27

5. Click **Next**.

6. Select **Save disconnected license file** and click on the **[...]** to navigate Windows Explorer to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Disconnected Licenses` and click **OK**.

7. Click **Next**.

8. Select **Never Expire**. Click **Disconnect**.

9. Click **Apply Changes**.

10. **Note:** When the disconnected license file is applied to ClientA, it will be able to always use TestStand without the chance of its license being borrowed by another computer on the network.

11. **ClientD** represents a contractor who will be joining your organization for 3 months as a **temporary circuit designer**. ClientD will not be allowed access to the network and also cannot be given serial numbers for a standalone software seat of Multisim. ClientD will be given a three-month license from the **Computers** view of NI VLM.

12. Click once on **ClientD** under Computer Name and select **Disconnect**.

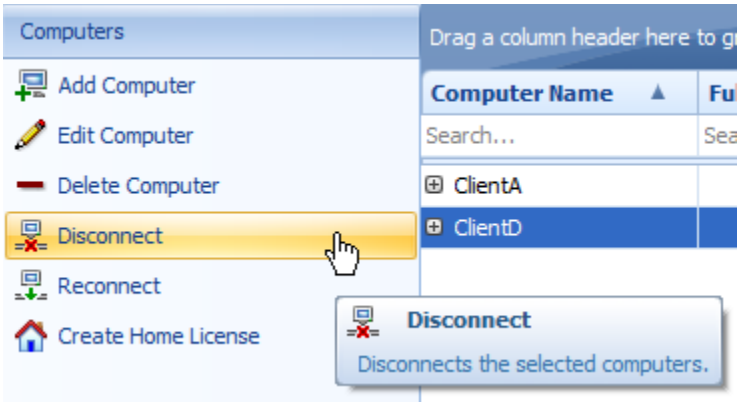

Figure 28

13. Click **Next**.

14. Select **Save disconnected license file** and click on the **[...]** to navigate Windows Explorer to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Disconnected Licenses` and click **OK**.

15. Click **Next**.

16. Select **Expire on a specific date** and select a day 3 months from today. Click **Disconnect**. Click **Finish.**

17. Click **Apply Changes**.

18. **Note:** When the disconnected license is applied to ClientD, it will be able to run Multisim for the period of time the contractor is working with your organization. When the license expires, the risk of abuse of your organization's licenses is reduced. The license is automatically reconnected to NI VLM on the same date.

19. **Continue** to Exercise 5.

End of Exercise 4

Exercise 5: Generate report with NI VLM usage data

Goal: Create a visual representation of the check-out and check-in operations on the NI VLM server in order to improve license management.

1. The latest version of NI VLM includes built-in report generation based on the usage data logged over the volume license period. Due to the fact that there has not been enough client activity during the exercises, NI VLM's configuration will be reset, and a file of simulated data will be loaded.

2. In NI VLM, in **Status**, click **Stop Volume License Server**.

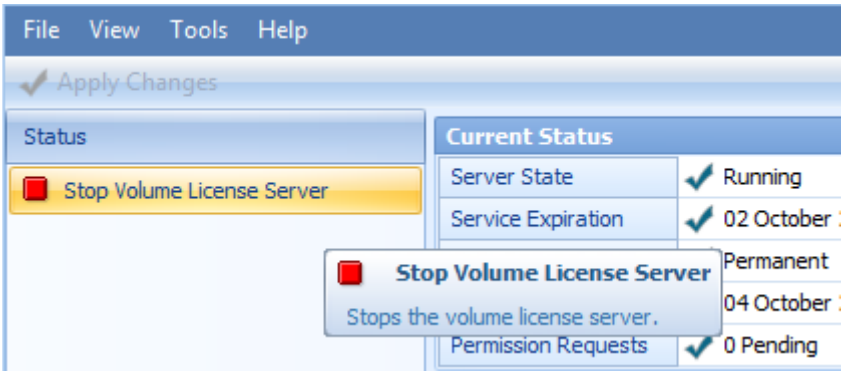

Figure 29

3. **Close** the NI VLM window.

4. In Windows Explorer, navigate to `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\CleanUp` and run the batch file `Run this to Clean VLM 3.1 and make it like a Fresh Install.bat` by **right-clicking** and selecting **Run as Administrator.**

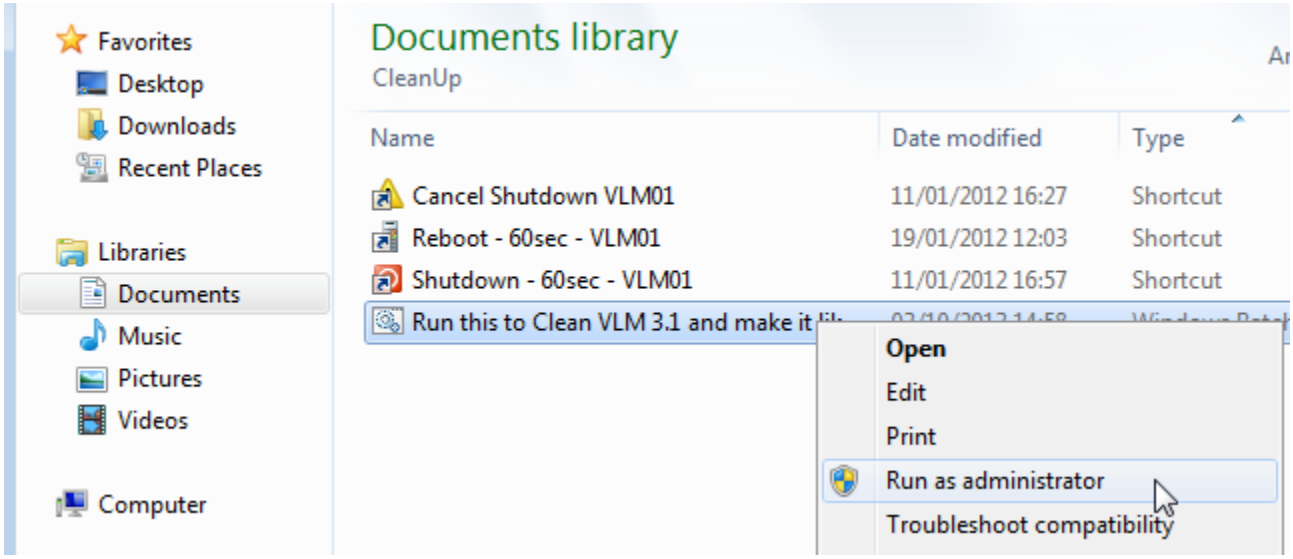

Figure 30

5. Click **OK** on the Windows UAC dialog box. Answer **Y** for every question in the NI VLM cleaner tool to delete all configuration files.

6. Launch **NI Volume License Manager**.

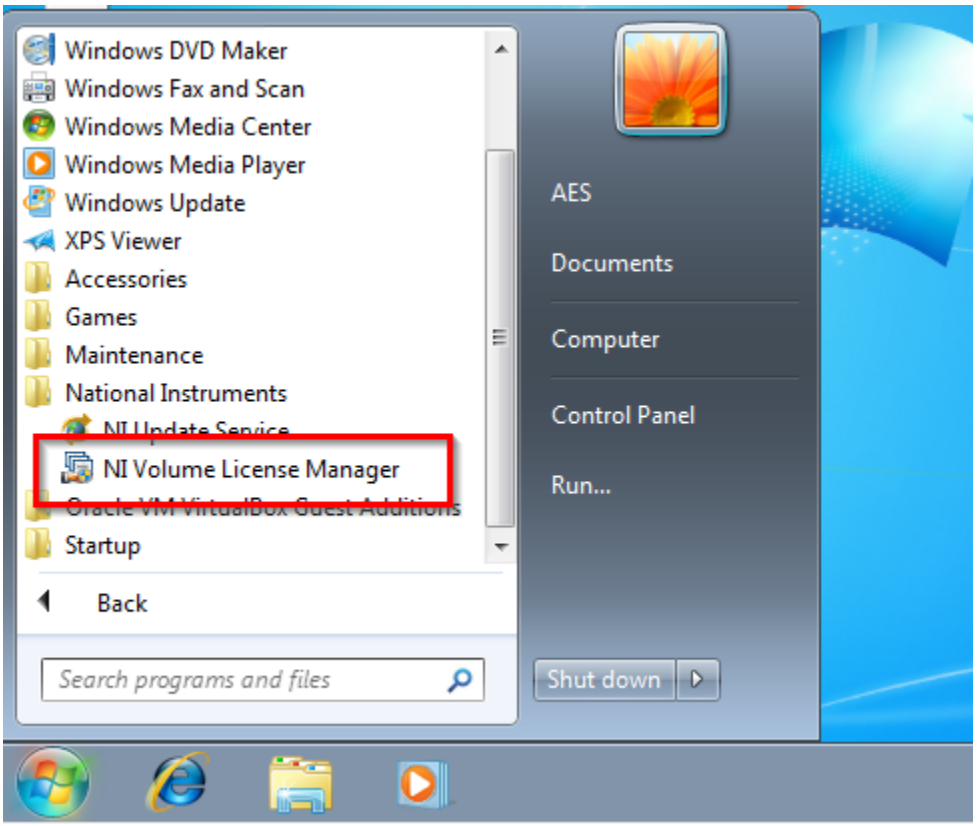

Figure 31

7. Click **Next**.

8. Select **I have an agreement license file for this computer** and click the **[…]** to select the file **NIHandsOn01.lic** from the directory `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Exercise 1`.

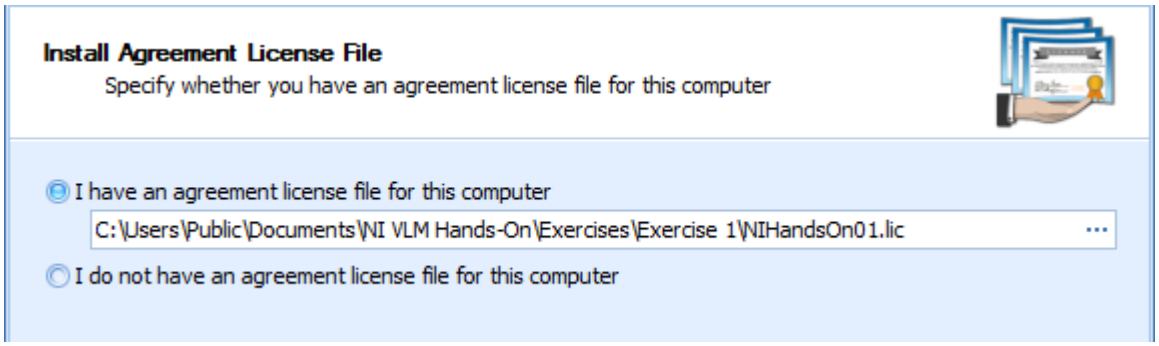

Figure 32

9. Select **Import settings from a previous NI VLM 3.x installation** and click **Next**. .

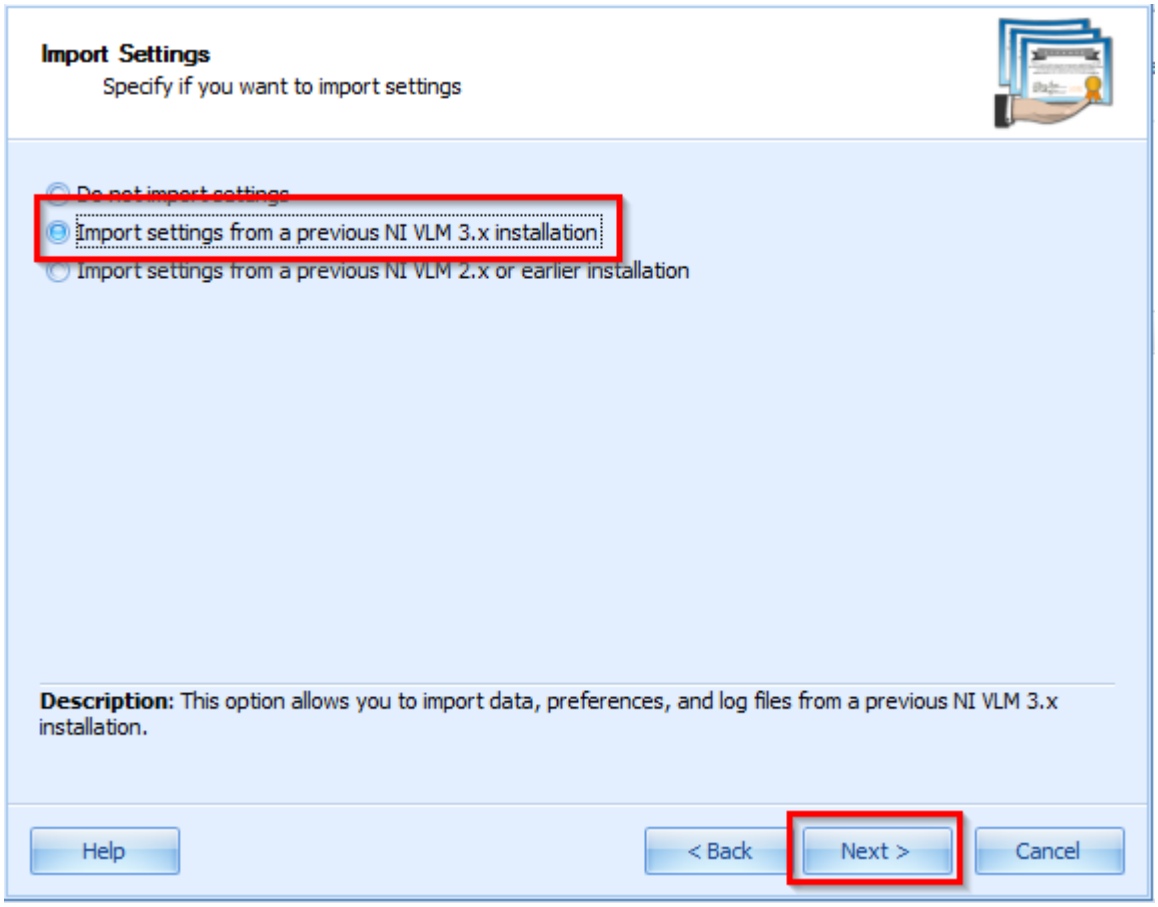

Figure 33

10. Load the file `ReportingTesting.vlmbak` from `C:\Users\Public\Documents\NI VLM Hands-On\Exercises\Reporting` and click **Import**.

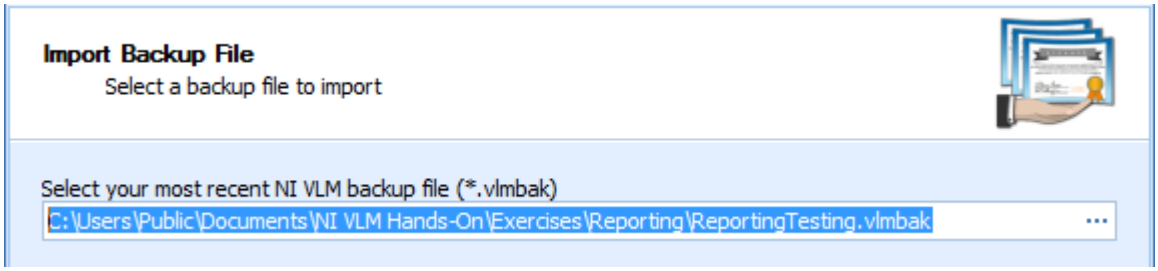

Figure 34

11. Click **Next**, **Next**, and **Finish**.

12. In the main NI VLM window, select the **Reports** view.

Note: NI VLM Reports view can be used to create the following reports:

- *License Activity* shows how many hours each client used the specified license.
- *Client Activity* shows how many hours a specified client used each license.
- *Seat Utilization* shows how many seats of a specified license each client used over time and provides detailed information about any overdrafts.
- *Seat Utilization (Concurrent)* shows how many seats of a specified license each client used over time and whether any clients were unable to check out the license because no seats were available.
- *License Allocation* shows, over time, how many seats each portion of your organization used, so that you can allocate costs accordingly.
- *License Allocation (Concurrent)* shows how many hours each portion of your organization used each license, so that you can allocate costs accordingly.
- *Named-User EULA Compliance* shows any instances of a client using a named-user license on more than three computers.

13. Select **Seat Utilization**. Configure the dates of interest, the license to inspect, and click **Generate Report**. Recommended values are in the figure below.

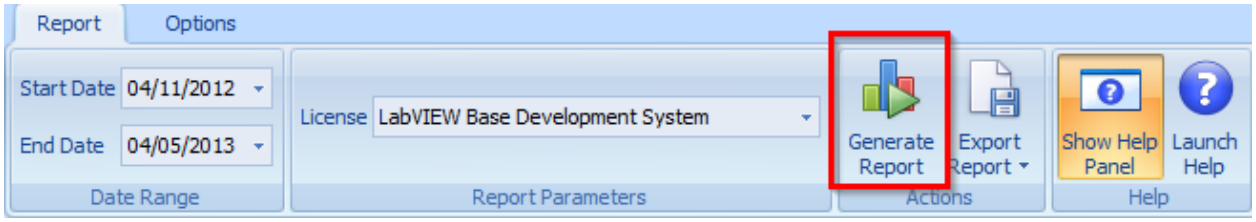

Figure 35

14. **Review** the report. The solid line represents the number of licenses available. The report shows that between January and March, more licenses were used than expected, via the overdraft system. This could indicate an unplanned trend in your organization, which implies that more licenses are needed that time of year.

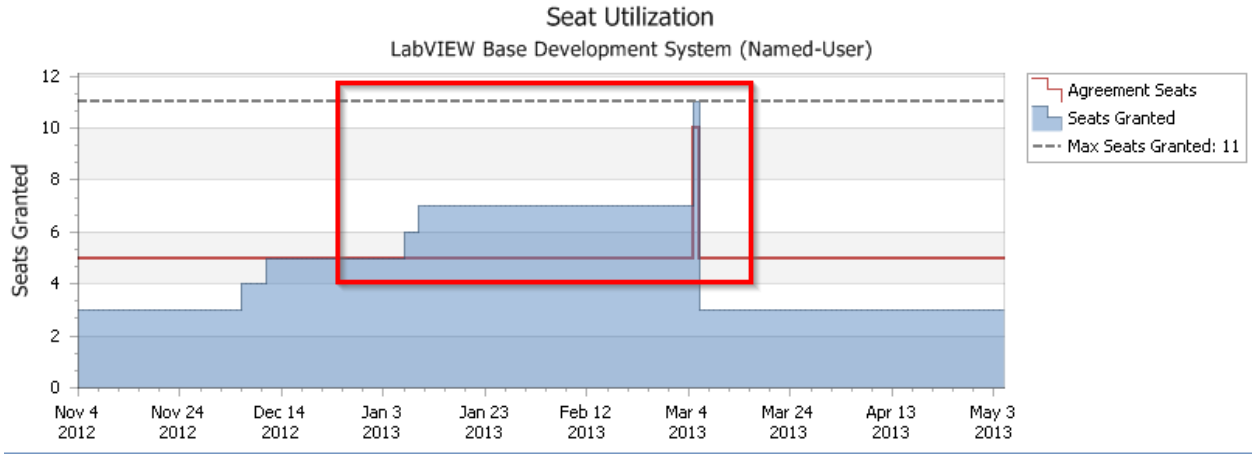

Figure 36

15. Select **Seat Utilization (Concurrent)**. Configure the dates of interest, the license to inspect, and click **Generate Report**. Recommended values are in the figure below.

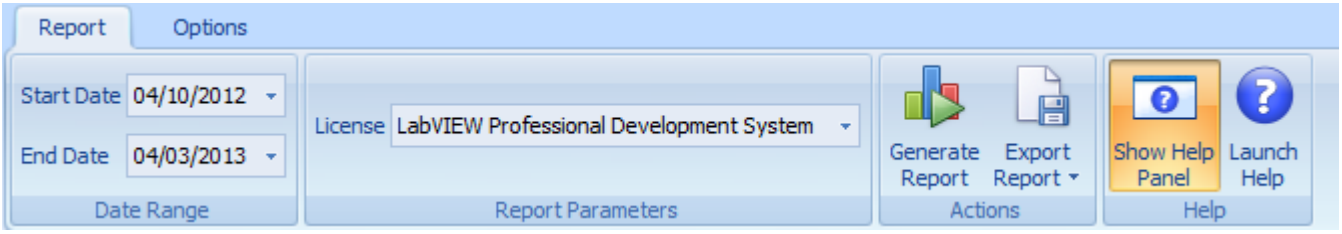

Figure 37

16. **Review** the report. The top graph indicates the Seats in Use per day. The bottom graph indicates when more seats than available were requested. The clients requesting above the inclusive amount were denied, and logged. If the list is long, that could indicate that the organization should acquire more licenses.

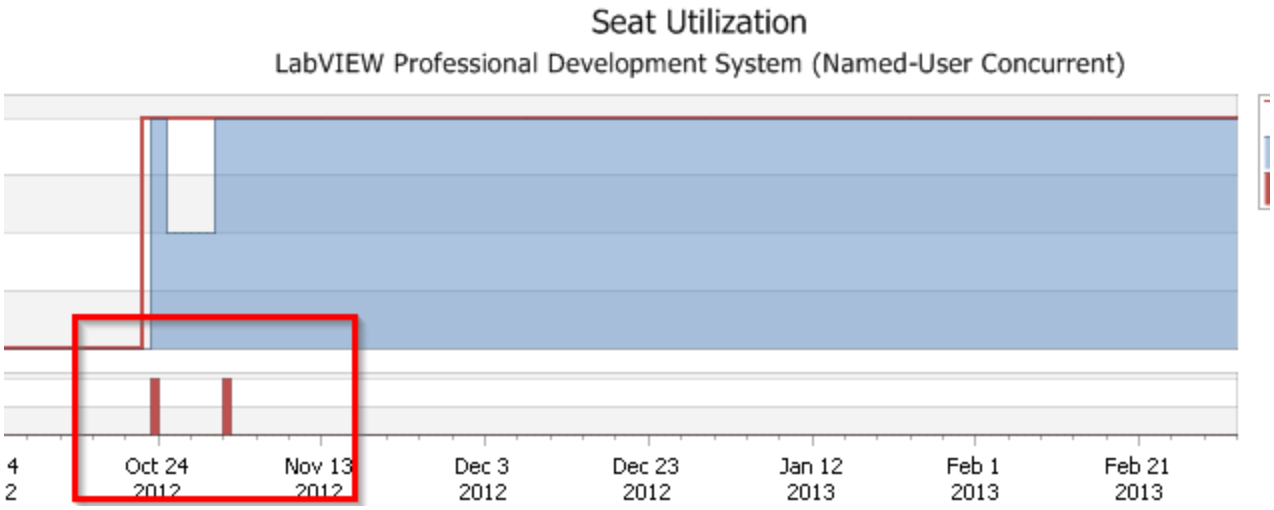

Figure 38

17. Select **License Allocation**. Choose any parameters and click **Generate Report**. This report can help classify usage in your organization. This tool can help when allocating cost to different Cost Centers, Projects, or Departments.

18. Continue to explore additional reporting features.

End of Exercise 5