**UPL09 – Reporting on Software License Compliance**  
**Hands-On Lab**

| Description | Explore various methodologies that can be utilized to extend the out-of-the-box supported software license compliance and tracking capabilities in Asset Management Suite.  
This lab will teach techniques to accommodate new license types, separate multiple editions of applications & operating systems, associate license keys to software licenses, and the manipulation of software compliance data within the CMDB. |

| At the end of this lab, you should be able to |  
|-----------------------------------------------|--------------------------------------------------|
| ▪ Identify methods to accommodate licensing types for specific products within Asset Management Suite |  
| ▪ Understand how to extend the data available to software licensing information and compliance. |  
| ▪ Understand how to create Custom Data Classes and CMDB Rules that manipulate data elements within the CMDB. |  
| ▪ Use Targeted Software Inventory to be able to bring Software Editions and Operating Systems into the Software catalog for auditing and licensing. |  

| Notes |  
|------|--------------------------------------------------|
| ▪ This is an advanced lab for experienced users. This step by step guide has been created for those who are not as familiar with the processes found in Asset Management Suite. |  
| ▪ A brief presentation will introduce this lab session and discuss key concepts. |  
| ▪ The lab will be directed and provide you with step-by-step walkthroughs of key features. |  
| ▪ Feel free to follow the lab using the instructions on the following pages. You can optionally perform this lab at your own pace. |  
| ▪ Be sure to ask your instructor any questions you may have. |
Lab Exercise 1: Managing Software Product Editions

By using the Targeted Software Inventory (TSI) function you can identify and create products that can be attached to configured licenses to present compliance data in a consistent fashion. Compliance data for the software installation can be reviewed holistically and contract and license key data associated with software installations can be recorded in a standardized way.

In this exercise we will walk through the steps that can be taken to concisely locate and track true installations of Microsoft SQL Server 2008 R2 Enterprise without using the Software Data Provider and Inventory Data Classes that only represent MS SQL 2008 Server editions into a single product. With this software product item we can then apply software asset management associations to ensure the proper accounting of this specific version & edition of MS SQL. This method can apply to any edition or version of software you wish to track and apply to software license compliance details.

**IMPORTANT:** Pay attention to the text you are typing in this exercise – All items must be typed exactly as shown

Create the Software Release You Wish To Track

1. Make sure the DC, NS75, SD7 and WIN7 VM’s are powered up.
2. Switch to the NS75 VM
3. Double click the Symantec Management Console Icon on the Desktop
4. Select Manage | Software Catalog in the main menu
5. Under the Newly Discovered\undefined software pane, choose +ADD then select Software Release
6. Replace the Untitled Name with TEST – Microsoft SQL Server 2008 R2 Enterprise in the top left section
7. Under the Properties tab, Enter 10.50 in the Version field
8. Press the Browse link, the Select Company window appears
9. Type Microsoft in the search field on the right, select Microsoft, and press OK
10. Under the Rules Tab, in the Detection Rule area, press the *New* link. The Create Rule window appears
11. Enter Microsoft SQL Server 2008 R2 Enterprise Reg Rule in the Name field
12. Press the + button and select Standard Rule ➔ Registry Key Value. The registry key value window opens
13. Enter the following values:
   a. Registry Key Path: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\CurrentVersion
   b. Registry Entry: CurrentVersion
   c. Registry value: 10.50.
   d. Match: Substring
14. Press OK
15. Press the + button and select **Standard Rule ➔ Registry Key Value**. The registry key value window appears.

16. Enter the following values:
   a. **Registry Key Path:**
      HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\MSSQL10_50.MSSQLSERVER\Setup
   b. **Registry Entry:** Edition
   c. **Registry value:** Enterprise
   d. **Match:** Substring

17. Press **OK**

18. The completed rule should look like this:

19. Press **OK** to close the Create Rule window

20. Press **OK** to close the Software Release window

21. Press **Close** to close the Software Catalog window.

At this point, the **TEST – Microsoft SQL Server 2008 R2 Enterprise** software release is not manageable within the Software Catalog. A policy must be created and run on a system for the Detection Rule to apply.

**Create the Targeted Software Inventory Policy**

1. Select **Manage | Policies** in the main menu
2. Expand the **Discovery and Inventory** Folder in the right pane
3. Right Click on the **Targeted Software** Inventory folder and choose **New ➔ Targeted Software Inventory**. It may take a few seconds to load
4. Name the policy **Detection check for TEST – Microsoft SQL Server 2008 R2 Enterprise**
5. Press the **Select Software** button in the **Software to inventory** section
6. Enter **TEST** in the search box in the left pane
7. Choose the **TEST – Microsoft SQL Server 2008 R2 Enterprise** software from the left pane (This is the one you created), then press the Right arrow (>) to put it in the Right Pane

8. Press **OK**
9. Expand the **Schedule Section** by pressing the **Down Arrow** at the right side of the section
10. Press the **Add Schedule** button and select **scheduled time**
11. Enter a time that is within the next 5 minutes (The Notification Server Time)
12. Scroll to the **Applied To** section
13. Select the **Windows Computers with Inventory Plug-in** entry and press the **edit (pencil)** icon
14. Press the **Update Results** button
15. Press **Cancel**

Because this is a Lab environment we will choose to keep the “**Windows Computers with Inventory Plug-in**” target. The Detection Rule will run on all computers in your test environment. If this was a production environment then you may wish to delete the “**Windows Computers with Inventory Plug-in**” target and create a new target that may be appropriate to the scope of endpoints you wish this policy to run on (i.e., Windows Servers.)

16. Enable the policy by scrolling to the top and selecting the **OFF** button in red and choosing **ON**. It should turn green.
17. Press **Save Changes** (At the bottom of the policy)
18. We will now run a Policy Update to speed up the process... In the Main Menu, select **Settings ➔ Notification Server ➔ Resource Membership Update**
19. Under **Policy Update Schedule**, Press the **Run** button on the right side. You should see “**Policy Update Schedule has Completed**” at the top of the window when it completes.
Execute the Targeted Software Inventory Policy

1. **Switch to the SD7 VM.**
2. Open the Symantec Management Agent on the task bar by double clicking it
3. Press the **Settings** icon in the top right
4. Press the **Update** button. Notice that the Requested and Changed times change.

5. Go to the other Symantec Management Agent Window and select the **Task Status** Tab. You can press the **“Check for Tasks”** button if the policy has not run after the specified time.

6. Wait for the Targeted Software Inventory policy to execute successfully at the time you set. You should see **“Success – return code 1”** if it completes successfully.
   
   **NOTE:** If it displays **“Success – return code 0”**, return to your Software Release detection rule and check the text in the rule entries, then run the Targeted Software Inventory again on a new scheduled time.

7. Close the Symantec Management Agent Windows

8. **Switch to the NS75 VM.**
9. Repeat steps 2 – 7 on the NS75 VM to complete the TSI process on NS75. You should see **“Success – return code 1”**

10. **Switch to the WIN7 VM.**
11. Repeat steps 2 – 7 on the WIN7 VM to complete the TSI process on NS75. Notice that in this case, the policy returns **“Success – return code 0”** because the WIN7 VM does not have an installation of MS SQL Server 2008 Server R2 Enterprise

Manage the Newly Detected Software Component

1. **Switch to the NS75 VM**
2. Select **Manage | Software Catalog** in the main menu
3. Under the **Newly Discovered\undefined software** pane, enter **TEST** in the search field
4. You should now see your **“TEST – Microsoft SQL Server 2008 R2 Enterprise”** software release
5. Select the **Right Arrow (>)** beside the **Managed Software Products** pane. The Software Product window appears.

6. Select the **Identify Inventory Tab**

7. Under the **Identify Inventory** tab, delete the **10.50** text in the **Version** field, then retype **10.50** back into the field – This will refresh the view and display 2 installations of SQL Server Enterprise in your environment (From NS75 and SD7)

8. **To change the Icon to reflect SQL 2008 Server Enterprise:**
   a. Press the **Change** link under the icon in the top right of the window
   b. Browse to: *C:\Program Files\Altiris\ActivityCenter\Web\ClientBin\img\product*
   c. Choose the *file7405eb3dd4df4adcb6574428b8acbebc.png*. You can enter *7405* in the search.
   d. Press **Open**

9. Press **OK** to close the software product. Notice how Your Managed Software Product is now listed in the Software Catalog with the proper icon.

10. Press **Close**. The software catalog is closed.

11. In the console, choose **Manage ➤ Software**

12. Select **Installed Products** in the Left Pane

13. Select the **TEST – Microsoft SQL Server 2008 R2 Enterprise** product in the Installed Products Pane

14. Notice that **NS75** and **SD7** show up as installations of **Microsoft SQL Server 2008 R2 Enterprise**
INFORMATIONAL: Other Uses for Targeted Software Inventory

Single Compliance Entry

There may be cases where you are dealing with a Microsoft Agreement that states that all versions of MS SQL Server are covered under a particular contract (known as downgrade). In this case you would need to find all versions of Microsoft SQL Server covered by this contract and represent them as a single software product so that you can associate a Software License and Software Purchases to it. In the end, this process would provide you with a single line entry that can be added to a Master Software Agreement found in the Asset Management Suite.

To accomplish this you may consider the following method:

- Create a New Software Release called Microsoft MSA – SQL Server
  - Create a Detection rule in this Software Release that detects Version 10.00. OR Version 11.00 OR Version 11.50 OR Version 12.00...

- Create and Enable a TSI (Targeted Software Inventory) policy called Microsoft MSA – SQL Server - TSI that references the Microsoft MSA – SQL Server software release and applies to the target of your choice (Like “All Windows Servers”)

- Let the TSI run on a good portion of the target machines

- Once the TSI has run on a few machines Make it a managed software product in the Software Catalog

- Clear out the version from the product.

- All editions will show in the search query.

- This will allow the total count of all SQL Server installs to be to be calculated properly in the newly created Microsoft MSA – SQL Server Software Product

- From this point a Software License, Software Purchase(s) can be associated to it as designed

- Once the associations are made, it can be added to a Master License Agreement as a single line item (Microsoft MSA – SQL Server) with a summed count of all SQL Versions on a single line.
Lab Exercise 2: License Type Accounting Through Non-Inventoried Installs

Now that we have a concise way of tracking Microsoft SQL Server 2008 R2 Enterprise installations, we can now use Asset Management Solution to associate Software Licenses and Purchases to them. We do however have a problem when it comes to the License Model for Microsoft SQL Server 2008 R2 Enterprise – it is not licensed as a Per Installed Node, but a Per Core or Per Processor scheme. The install count of 2 does not account for this and we will cover this scenario in the next exercise.

The Symantec Asset Management Suite (AMS) enables customer organizations to effectively manage software asset license entitlements and associated reconciliation activities.

AMS supports ‘per installed node’ and Concurrent license calculations only. The solution records the number of purchases against a configured software product. Inventory information is then compared to the software product definition and the compliance count is decremented by one, for each distinct computer device that posts inventory data that matches the product definition.

This approach works well for the majority of licensable applications where there is a one to one relationship between installation count and license consumption, however, certain products, for example, Microsoft SQL Server R2 Enterprise, may require a ‘per processor’ approach, where the AMS default calculations may present an inaccurate compliance position, consuming only a single license where multiple processors are tied to the product.

Symantec has traditionally provided instructions and custom report syntax to present ‘per processor’ license information in the form of a custom report. This Lab will build on the concepts of the traditional solution referenced above and will place the additional license calculations for various license types into the ‘Non-Inventoried Installs’ attributes within the AMS license configuration.

This approach enables software asset administrators to present license compliance data using the default reports available within the console or made available via IT Analytics configuration. In this Lab we will demonstrate how the following license types can be added to the license type attributes and how they can be reported on:

- **Per Processor**: A license priced according to the number of processors running on each machine where the application is installed. Microsoft SQL Server is a common example of this license type.
- **Per Core**: A license priced according to the number of processor cores in the computer(s) on which the software will run. VMware is an example of a publisher that utilizes this license model
- **Processor Point**: A license priced on the number of processors with a factor value that calculates points-based licenses that consumes different numbers of points according to the type of processors in the computers. Sun Sparc 6 CPU’s x .25
- **Core Point**: A license priced on the number of cores with a factor value that calculates points-based licenses that assigns different numbers of points according to the type of processors on the computers. i.e., Sun Sparc 6 cores x .25
- **Site / Enterprise**: A site license allows ALL users, on a given network, execute copies of software products on ANY adequately configured and supported platform type server at one site.
- **Per Device**: A license for software that is delivered with the hardware and is only for use on that piece of hardware. These licenses are tied to the lifecycle of the hardware and typically cannot be transferred to other hardware. OEM and Named Server license types apply to this model. This differs from “Per Installed Node” as it is applied to the particular device.

<table>
<thead>
<tr>
<th>License Type</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Processor</td>
<td>$\sum_{cpu} - \sum_{installed}$</td>
</tr>
<tr>
<td>Per Core</td>
<td>$\sum_{cores} - \sum_{installed}$</td>
</tr>
<tr>
<td>Processor Point</td>
<td>$(\sum_{cpu} \times n_{factor}) - \sum_{installed}$</td>
</tr>
<tr>
<td>Core Point</td>
<td>$(\sum_{cores} \times n_{factor}) - \sum_{installed}$</td>
</tr>
</tbody>
</table>
Modify the Software License Details Data class

This exercise will demonstrate how to add additional license types to the Software License resource type. The license types are created in the “Software License Details” data class and are called in the “Software License” resource type in the Asset Management Solution.

1. Switch to the NS75 VM
2. Open the Symantec Management Console
3. Navigate to Settings | All Settings
4. Expand Settings ➔ Notification Server ➔ Resource and Data Class Settings ➔ Data Classes ➔ Contract Data Classes ➔ Software License Data Classes

6. Click on Edit Icon on License Type
7. Click on Edit Button beside the Type field. *Be careful not to type extra spaces before or after the text.*
8. Enter ‘Per Core’ and click Add.
9. Enter ‘Per Processor’ and click Add.
10. Enter ‘Core Point’ and click Add.
11. Enter ‘Processor Point’ and click Add.
12. Enter ‘Site’ and click Add.
13. Enter ‘Enterprise’ and click Add.
14. Enter ‘Per Device’ and click Add.

15. Click OK
16. Click OK
17. Click Save Changes
Create a New Software Licensing Model Custom Data class

This exercise will demonstrate how to add a custom data class to the Software License resource type. This custom data class “Software Licensing Model” will contain the data required for the Factor. The Factor information is a number that is used in many license calculations like Processor Point and Core Point and consists of a decimal value that will most likely be multiplied. Any other license models will simply need these values to be populated with a ‘1’ in each of the fields.

1. Navigate to Settings | All Settings in the Main Menu
2. Expand Settings ➔ Notification Server ➔ Resource and Data Class Settings > Data Classes > Contract Data Classes > Software License Data Classes
3. Right Click on the Software License Data Classes folder and select New ➔ Editable Data Class
4. Rename it Software Licensing Model
5. Un-Check the Multiple Rows box (Important!)
6. Press the Add New Attribute button
7. In the Name field, type Factor
8. In the Description field, type This value is entered as a multiplier
9. In the Type field, Select Decimal
10. Press OK
11. Press Save Changes. The new data class will be created in the CMDB
12. In the left pane, expand Settings ➔ Notification Server ➔ Resource and Data Class Settings ➔ Resource Types ➔ Contract Types ➔ Software Licensing ➔ Software Licenses
13. Select Software License. Wait for the settings to appear
14. Press the Add Data Classes Button at the bottom of the page
15. Browse to Data Classes > Contract Data Classes > Software License Data Classes, and select Software Licensing Model
16. Press Save Changes
17. Scroll to the bottom of the window and press Save Changes

Import the License Calculation Custom Reports

This section details how the custom SQL Reports work and how to import a custom report into the Symantec Management Console. This import consists of calculation reports that are based on License Type and a Master License Calculation report that lists all license types in one view.

1. Navigate to Reports | All Reports
2. Right Click on the Reports folder and select Import
3. Browse to C:\Lab Resources\Advanced License Management Lab folder
4. Select the LAB Reports.xml and click Open
5. You will find the imported reports under the LAB Reports Folder
6. Select the Master CPU Based License Calculation report and notice that it is empty, as we have not created a Software License and purchase that will feed this data.

Import the prepared Custom CMDB Rules

This section details how to import the CMDB Rules that have been prepared for this lab into the Symantec console.

1. Select Settings | All Settings in the Main Menu
2. Expand Settings ➔ Notification Server ➔ Connector ➔ CMDB Rules
3. Right click on the CMDB Rules folder and select Import
4. Browse to C:\Lab Resources\Advanced License Management Lab folder
5. Select LAB CMDB Rules.xml file and press Open
6. Open the LAB CMDB Rules folder and make sure that there are 4 entries in this folder, but do not edit them at this time.

Create a Software License & Software Purchase

This section details how to create a Per Core License for Microsoft SQL 2008 R2 Enterprise. As part of this process you will create a software purchase that records how many Microsoft SQL 2008 R2 Enterprise licenses have been purchased. You will then associate the Software License with the Microsoft SQL 2008 R2 Enterprise software product to correlate license information with installation data.

1. Navigate to Home | Service and Asset Management | Software Licensing
2. On the left pane, right click on Software Purchase and select Create Software Purchase
3. Select Software Purchase (global) from the View drop down (Upper Right Hand Corner)

4. Enter TEST - Microsoft SQL Server 2008 R2 Enterprise Purchase in the Software Purchase field (Top Left)
5. Enter March 1st, 2013 as the purchase date in Purchase Date field
6. Enter “This is a Microsoft SQL Server 2008 R2 Enterprise Purchase” in Description field
7. Enter 10 in the Quantity field
8. Click OK at the bottom of the page
9. Right Click on Software License on the left pane and select Create Software License
10. Type TEST - Microsoft SQL Server 2008 R2 Enterprise License in the Software License field (Top Left)
11. Scroll down the page to the Covered Software Product section, and click the Click to select... link
12. Type TEST in the Search field
13. Select TEST - Microsoft SQL Server 2008 R2 Enterprise and click OK.
14. Under the Software License Details section
   a. Enter 1200 in the Maintenance Renewal Cost
   b. Enter 800 in the Support Renewal Cost
   c. Select Per Core from License Type drop down menu. This field displays the list items (Per Core, Per Processor...) you populated in the “Software License Details” data class.
15. Under the Software Licensing Model area
   a. Enter 1 for Factor (As per core or per processor are a 1:1 factor). This field displays the Factor field you created in the “Software Licensing Model” data class.
16. Under the Software Purchase area Click Edit icon on the right
17. Type TEST in the search field
18. Select TEST – Microsoft SQL Server 2008 R2 Enterprise Purchase and press the Right Arrow (>) to move to the Selected Items box.
19. Click OK
20. Under the Standard Contract Information section:
   a. Enter Microsoft SQL Server 2008 R2 Enterprise in the Description field
b. Enter 3/1/2013 in the Start Date field

c. Enter 3/1/2016 in the End Date field

d. Enter Active in the Status field

e. Check the Approved box

f. Scroll up to Non-Inventoried Installs and notice how it is empty

21. Click OK on the software license screen to save the newly created license

You have now created a Software Product that is associated to a Software License and Software Purchase. Once these 3 associations have been made, you have completed all of the necessary items to allow for Software License Compliance reporting of the software product.

Run the License Recalculation Schedule

You may notice from time to time that the Purchased or Non-Inventoried count has not appeared in some of your compliance reports. This is a result of the NS.Software Product Licensing Recalculation Schedule not being run after the creation of new software licenses or purchases. This scheduled task is automatically runs every night at 1:00AM by default, but we can initiate it to ensure that our totals are displayed in the next section of the lab.

1. Select Start ➔ Administrative Tools ➔ Task Scheduler in Windows or you can use the Icon on the tray

2. Find the NS.Software Product Licensing Recalculation task under the Task Scheduler Library Folder

3. Right Click on the task and choose Run

4. Wait until it finishes processing. It should only take about a minute. (You can refresh the display to check)

Run the Master CPU Based License Calculation Report

1. Return to the Symantec Management Console

2. In the main menu, navigate to Reports | All Reports

3. In the right pane, select Reports ➔ LAB Reports folder

4. Select the Master CPU Based License Calculation report and notice that it is now populated after you associated the Software Licenses and Software Purchase to the software product

5. Notice the following details in the report:

   a. Lists the Software License and its associated Software Product

   b. Displays the License Type as Per Core

   c. Calculates the number of installs as 2

   d. Calculates the Processor count as 3 (NS75 is has 2 CPU, SD7 has 1 CPU)

   e. Calculates the Processor Core count as 6 (NS75 is has 4 Cores, SD7 has 2 Cores)
Run the Per Core Calculation Report

1. In the Main Menu, Navigate to Reports | All Reports
2. In the right pane, select Reports ➔ LAB Reports ➔ Calculation Reports folder
3. Select the Per Core Calculation report
4. Notice the following details in the report:
   a. Lists the Software License name
   b. Displays a Description of: From Per Core CMDB Rule. In the next section, this text will be entered into a specific area of the Software License to identify that it was fed by a CMDB Rule.
   c. Displays a Type value of “In Use”
   d. Calculates the number of Non-Inventoried Installs as 4. This is a result of a simple calculation of the Number of Cores less the Number of Installs (6 – 2 = 4) that are unaccounted for in the Per Core Model. We will use this data to populate the Non-Inventoried Installs portion of the Software License in the next section.

Run the CMDB Rule for Per Core population

1. Select Settings | All Settings in the Main Menu
2. Expand Settings ➔ Notification Server ➔ Connector ➔ CMDB Rules ➔ LAB CMDB Rules
3. Select the Per Core CMDB Rule
4. Notice the following CMDB Rule settings:
   a. Resource Type: Software License. This CMDB Rule will modify any Software License referenced in the query data
   b. Target Using: Report. This CMDB Rule will use a Report as the source for the query data
   c. Report Name: Per Core Calculation. This CMDB Rule will use this report as the source for the query data
   d. Data Class Settings: Count, Description, and Type are automatically populated in the Non-Inventoried Installs data class section because the report columns were named the same as the data class column names.

<table>
<thead>
<tr>
<th>SWLicense</th>
<th>Description</th>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEST - Microsoft SQL Server 2008 R2 Enterprise License</td>
<td>From Per Core CMDB Rule</td>
<td>In Use</td>
<td>4</td>
</tr>
</tbody>
</table>

Using the data returned in the Per Core Calculation report, the Non-Inventoried Install data class for the TEST - Microsoft SQL Server 2008 R2 Enterprise License will be fed with the data above. The Description uses a simple text formatting of “From + [License Type] + CMDB Rule” to describe the specific source of the line entry as to avoid confusion with manual entries, the Type is set to “In Use” to indicate that the license is used (As opposed to Reserved) and the Count is the amount of licenses we need to account for.

5. Click the Run Now button (at the bottom of the window) to populate the Non-Inventoried value in the Software License immediately. The configured license will now have Non-Inventoried Installs attribute populated with additional license numbers and the computer name consuming the licenses.

6. The Rule has run successfully if you receive the following results:
7. Press the Close Button
8. Navigate to Home | Service and Asset Management | Software Licensing on the main menu
9. Select the Software License item in the left pane tree view
10. On the right pane, type TEST in the Search field on the top right of the window
11. Double Click the TEST - Microsoft SQL Server 2008 R2 Enterprise License to open it
12. Find the Non Inventoried Installs section
13. Notice that the CMDB Rule has placed 4 Non-Inventoried Installs in this area with the Description field populated with “From Per Core CMDB Rule” and the Install type of “In Use”.
14. Click Cancel
15. On the Left Pane of the Software Licensing view, expand Service and Asset Management Reports ➔ Contract Management ➔ Software Licensing folders
16. Select the Software Product Licensing Compliance report
17. Type TEST in the Search field (Top right of Window)
18. Refresh the report by checking the Refresh Button
19. You may notice that the Purchased or Non-Inventoried count has not appeared in the reports yet.
   This is a result of the NS.Software Product Licensing Recalculation Schedule Scheduled Task has not run after the creation of the Non-Inventoried Install data. This scheduled task is automatically runs every night at 1:00AM by default.
20. Run the Windows Task Scheduler by selecting Start > Task Scheduler (or the Icon)
21. Find NS.Software Product Licensing Recalculation... task under the Task Scheduler Library Folder

   a. Right Click on the task and choose Run
   b. Wait until it finishes processing. It should only take about a minute.
22. Return to the Software Product Licensing Compliance report and press the Refresh button
23. Notice that the compliance report shows the Non-Inventoried Installs that the CMDB Rule entered and that this Licensing Type methodology will work with any standard software license report.
OPTIONAL EXERCISES (Time Permitting)

You can try the other license types at your convenience by completing the following actions, but we would highly recommend completing them once you have completed the other exercises:

Per Processor Demonstration:
   a. In the Software License: Change the License Type to Per Processor and Factor to 1
   b. Run the Per Processor CMDB Rule
   c. Run the Software Purchase and Recalculation scheduled tasks
   d. Run the Software Product Licensing Compliance report to see the result. You should see that 1 Non-inventoried install was added to the count. (3 Processors – 2 Installs = 1 NI)

Core Point Demonstration:
   a. In the Software License: Change the License Type to Core Point and Factor to 0.50,
   b. Run the Core Point CMDB Rule
   c. Run the Software Purchase and Recalculation scheduled tasks
   d. Run the Software Product Licensing Compliance report to see the result.
   e. The Query and CMDB Rule uses the following results (Rounding Up):

<table>
<thead>
<tr>
<th>Installed</th>
<th>Cores</th>
<th>Factor</th>
<th>NI</th>
<th>TOTAL Licenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>0.75</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>0.5</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>0.25</td>
<td>N/A</td>
<td>2</td>
</tr>
</tbody>
</table>

Processor Point Demonstration:
This example does not show well in this lab as there are only 3 processors inventoried and the installed count is 2. This results in Processor Point Calculations that only show when the factor is 1 (i.e., (3 Processors - 2 Installs) X 1 Factor = 1 Processor Point). If the amount of processors were 10, the mathematical results would be as follows:

<table>
<thead>
<tr>
<th>Installed</th>
<th>Processors</th>
<th>Factor</th>
<th>NI</th>
<th>TOTAL Licenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10</td>
<td>1</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>0.75</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>0.5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>0.25</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
Lab Exercise 3: Managing Operating System Licenses

The Software Management Framework does not automatically create software products for Operating System products. Traditionally, Inventory reports were generated to present this detail and were manually reconciled.

By using the Targeted Software Inventory (TSI) function you can identify and create products that can be attached to configured licenses to present compliance data in a consistent fashion. Compliance data for the Operating System and the software installation can be reviewed holistically and contract and license key data associated with OS installations can be recorded in a standardized way.

Create the Windows 7 Professional Software Resource

1. Open the Symantec Management Console
2. Select Manage | Software Catalog in the main menu
3. Under the Newly Discovered\undefined software pane, choose +ADD then Software Release
4. Replace the Untitled Name with TEST - Windows 7 Professional in the top left section of the window
5. Under the Properties tab, Enter 6.1.7601 in the Version field
6. Press the Browse Button beside Company, and Choose Microsoft, then press OK
7. Under the Rules Tab, Choose *New in the Detection Rule area. The Create Rule window appears
8. Enter TEST - Windows 7 Professional Reg Rule in the Name field
9. Press the + button and select Standard Rule ➔ Registry Key Value.
10. Enter the following values:
    a. Registry Key Path: HKEY_LOCAL_MACHINE\SOFTWARE\MICROSOFT\WINDOWS NT\CurrentVersion
    b. Registry Entry: ProductName
    c. Registry value: Windows 7 Professional
    d. Match: Entire String
11. Press OK
12. Maximize the Create Rule window, then press OK to save
13. Press OK on the Software Release window

Create the Windows 7 Professional Targeted Software Inventory Policy

1. Select Manage | Policies in the main menu
2. Expand the Discovery and Inventory Folder in the right pane
3. Right Click on the Targeted Software Inventory folder and choose New ➔ Targeted Software Inventory
4. Name the policy Detection check for TEST - Windows 7 Professional
5. Press the Select Software button
6. Enter TEST in the search box in the left pane
7. Choose the TEST - Windows 7 Professional software from the left pane (This is the one you created)
8. Press the Right arrow (>) to put it in the Right Pane
9. Press OK
10. Expand the Schedule Section by pressing the Down Arrow at the end of the section
11. Press the Add Schedule button and select scheduled time
12. Enter a time that is within the next 5 minutes (The NS75 VM Time)
13. Scroll to the Apply To section
14. Select the Windows Computers with Inventory Plug-in target and press the Edit (Pencil) button
15. Press the **Update Results** button
16. Press **Cancel**
17. Enable the policy by scrolling to the top and selecting the **OFF** button in red and choosing **ON** - The setting should turn green.
18. Press **Save Changes** (At the bottom of the policy)
19. To speed up the process we will have to refresh the policy membership
   a. In the Main Menu, **Select Settings** ➔ **Notification Server** ➔ **Resource Membership Update**
   b. Press the **Run** button next to the **Policy Update Schedule**

**Running the Windows 7 Professional TSI Policy**

20. **Switch to the WIN7 VM**
21. Open the **Symantec Management Agent** on the task bar by double clicking it
22. Press the **Settings** icon in the top right
23. Press the **Update** button. Notice that the Requested and Changed times change.
24. Go to the other **Symantec Management Agent Window** and select the **Task Status** Tab
25. Press the **“Check for Tasks Button”**
26. Wait for the Targeted Software Inventory policy to execute successfully at the time you set. It should return **“Success Status Code 1”** if successful.

27. **Switch to the NS75 VM**
28. Select **Manage** | **Software Catalog** in the main menu
29. Under the **Newly Discovered undefined software** pane, enter **TEST** in the search field
30. You should now see your **“TEST - Windows 7 Professional”** software product
31. Select it and press the **Right Arrow (>)** beside the **Managed Software Products** pane. The Software Product window comes up.
32. In the **Identify Inventory** Tab, Delete the text **6.1.7601** under the Version field and re-enter **6.1.7601**
   This will refresh the view and display 1 installation of Windows 7 Professional on WIN
33. Select the **Licenses Tab** and enter the following Software Purchase and Software License information:
   a. Make sure that the **Licensable Product** box is selected
   b. Press the **+Add license purchase** button
   c. In **Maintenance Renewal cost**, type **80**
   d. In **Support Renewal cost**, type **30**
   e. In **Quantity**, type **10**
   f. In total cost, type **1000**
34. Press the **Add** button
35. Press **OK** to save the newly created software product.
36. **Press Close** to close the **Software Catalog**.
37. From the main console menu, choose **Manage ➔ Software**
38. Select **Installed Products** under the **Installed Software** pane (Middle Pane)
39. Find and select **TEST - Windows 7 Professional** in the list
40. Review the “**Software Product and Usage**” dashboard and notice that the Quantity, Costs and Installed values exist.

This demonstrates that operating systems can be tracked, and licensed in similar ways that standard applications are. In the next section we will extend the License Data Class to accommodate the feeding of license keys into an OS License.
Lab Exercise 4: License Key Management

Software vendors distribute keys to license and activate the covered software. These details require recording by the customer organization. Organizations have traditionally recorded key data in a spreadsheet or arbitrary field in their License management repository and simply ‘attached’ or referenced it in the Software License or Software Purchase within Asset Management Solution.

Using CMDB solution, we can extend the fields available on the License contract resource type to incorporate key data. We can also use a multitude of options to feed these new fields using CMDB Rules, Automation Rules, Custom Inventories and more. This ensures that the license manager and other authorized personnel are able to review key data that pertains to a particular license in a single tool.

In this example, the administrator would like to create a new data class that will be displayed in a Software License that allows them to indicate the key type, key, expiry and which computer or user it is assigned to. Their initial use is to use this process to track their Windows 7 OEM licenses assigned to specific computers. They currently track OEM licenses using an excel spreadsheet and would like to use Asset Management Solution.

Implementation of the “License Key Details” Data class

1. Switch to the NS75 VM
2. Open the Symantec Management Console
3. Select Settings | All Settings in the main menu
4. Expand Settings ➔ Notification Server ➔ Resource and Data Class Settings ➔ Data Classes ➔ Contract Data Classes ➔ Software License Data Classes
5. Right Click on the Software License Data Classes folder and Select New ➔ Editable Data Class
6. Change the Name from New Editable Data Class to License Key Details.
7. Type “This Data Class lists license Key Details” in the Description underneath the Data Class Name
8. Make sure that the Multiple Rows setting is checked
9. Press the Add New Attribute... Button
10. Enter the following Details:
   a. Name: Key type
   b. Description: Enter the Key Type (Activation, Device License, OEM...)
   c. Type: Static List (From the drop down menu)
      i. Select the Edit button
      ii. Type Activation then press the Add button
      iii. Type Device License then press the Add Button
      iv. Type OEM then press the Add Button
      v. Press OK
   d. Press OK on the Data Class Attribute Configuration Window
11. Press the Add New Attribute... Button
12. Enter the following Details:
    a. Name: Key
b. **Description**: Enter the Key  
   c. **Type**: String (From the drop down menu)  
   d. Press OK on the **Data Class Attribute Configuration Window**

13. Press the **Add New Attribute...** Button

14. Enter the following Details:
   a. **Name**: Computer  
   b. **Description**: Select a computer that applies to this key  
   c. **Type**: Resource Foreign Key (From the drop down menu)  
   d. **Resource Type**: Computer (Should appear after selecting the above choice)  
   e. Press OK on the **Data Class Attribute Configuration Window**

15. Press the **Add New Attribute...** Button

16. Enter the following Details:
   a. **Name**: User  
   b. **Description**: Select a user that applies to this key  
   c. **Type**: Resource Foreign Key (From the drop down menu)  
   d. **Resource Type**: User (Should appear after selecting the above choice)  
   e. Press OK on the **Data Class Attribute Configuration Window**

17. Press the **Add New Attribute...** Button

18. Enter the following Details:
   a. **Name**: Key Expiry  
   b. **Description**: Enter the date that the key expires on  
   c. **Type**: Date (From the drop down menu)  
   d. Press OK on the **Data Class Attribute Configuration Window**

19. The finished Data Class should look like this:

![Image of License Key Details]

20. Press **Save Changes** to create the data class

**Note**: It is a good practice to map out all of your custom data classes before entering them into the CMDB. It is particularly important to note that you should not enter the Save Changes button before you are completely finished adding the fields as it creates the SQL Table immediately after pressing it.

**Adding the Data class to the License Resource Type**

1. **Switch to the NS75 VM**
2. Open the Symantec Management Console
3. Select **Settings | All Settings** in the main menu
4. Expand Settings ➔ Notification Server ➔ Resource and Data Class Settings ➔ Resource Types ➔ Contract Types ➔ Software Licensing ➔ Software Licenses
5. Select the Software License item
6. On the right pane, Press the Add Data Classes button. The Item Selector interface opens
7. Browse to Data Classes ➔ Contract Data Classes ➔ Software License Data Classes
8. Select the License Key Details data class
9. Press Save Changes. The Item Selector window closes
10. Press the Save Changes button at the bottom of the Software License resource type window.

Populating the “License Key Details” Data class

In this scenario, an administrator is tasked with the entry of Windows 7 Professional OEM Licenses received by a recent inventory of computers. They have been provided with an Excel File containing all of OEM License information.

1. In the Console Main Menu, Select Home | Service and Asset Management | Software Licensing in the main menu
2. Select the Software License item in the left pane
3. Type TEST in the search bar on the right pane
4. Double Click on the TEST - Windows 7 Professional software license in the list
5. Scroll to the middle of the window and notice the “License Key Details” area is now available. This is the new data class you had created to add license key information. Notice that it is empty
6. Keep this window open
7. Open another Symantec Management Console session
8. Select Settings | All Settings in the main menu
9. Browse to Settings ➔ Notification Server ➔ Connector
10. Right Click on the Data Sources Folder and select New ➔ OLEDB Data Source
11. Rename the Data Source New OLEDB Data Source to Windows 7 Professional OEM List
12. Configure the following:
   a. OLEDB data source type: MS Excel (*.xls, *xlsx)
   b. MS Excel File: C:\Lab Resources\Advanced License Management Lab\Windows7Pro_OEM_List.xls
   c. Worksheet Name: Windows7Pro_OEM_List$ (Press the Refresh symbol then choose it)
   d. Select the Allow Import button
   e. Press the Test Data Source button.
13. Press the Save Changes Button
14. In the right pane, Browse to **Settings ➤ Notification Server ➤ Connector ➤ Import/Export Rules**
15. Right Click on the **Import/Export Rules** Folder and select **New ➤ Resource Import Export Rule**
16. Rename the Rule to **Windows 7 Professional OEM List Import**
17. Configure the following:
   a. **Data Source:** Windows 7 Professional OEM List
   b. **Replication Direction:** Import
   c. **Resource Type:** Software License (Look under the Contract parent resource type)
   d. **Resource lookup Key:** Resource Name and choose Name: **Software_License** beside it
   e. **Un-Check** the “Create resources if doesn’t exist” box

   ![Image of settings configuration]

   f. Scroll down to the **License Key Details** area. Notice that the fields are filled in. This is a result of naming the columns in the Excel Spreadsheet to match the destination fields.

   g. **IMPORTANT:** Change the Update Mode to **Replace**

18. Press the **Save Changes Button** (at the bottom of window)
19. Press the **Run Now** button at the bottom of the page
20. You should see the following results:

   ![Image of run status]

21. Press **Close**
22. Return to the **TEST - Windows 7 Professional** software license that you kept open
23. Refresh the Web Page (F5)
24. Scroll to the bottom of the window and you should now notice that the “License Key Details” area is filled with the imported records from the Data Connector import.

Viewing the “License Key Details” Data class in Custom Reports

1. Open the Symantec Management Console
2. Select Reports | All Reports in the main menu
3. Right Click on the LAB Reports folder in the right pane and select Import
4. Browse to C:\Lab Resources\Advanced License Management Lab\ folder
5. Choose the Software License Key Detailed Report.xml then press OK. The report should appear under the LAB Reports Folder
6. Select the Software License Key Detailed Report and run it. This is an audit report that shows the License and its assigned license keys with Assigned Owner and Assigned Device.
7. Press the EDIT button at the top right corner of the report
8. Review the Query to better understand the way that it is used to join the Software License, User, Computer and License Key Details together.
9. Press Cancel when you are done reviewing the query