

# Reconcile software

## Lab 3.3

15-20 minute

### Lab objectives

You will achieve the following objectives:

- All software reconciled
- Software reconciled for an individual publisher
- Software reconciliation grouped by country

**Lab Dependency:** Requires the completion of Labs 1.1, 2.1, 2.2, and 3.2

**Required Resources:** None

### Scenario

Software reconciliation compares details from software entitlements (how many rights are owned) and from software installations (how many rights are in use) to identify the compliance position. The license metric identified on the software entitlement is required to support this.

Rick Lemm, Software Asset Manager at Cloud Dimensions, Ltd. (CloudD), has been requested to provide the status of software asset compliance and any recommended compliance mitigations to his leadership team. The leadership team is especially interested in the compliance position for Adobe Systems and Microsoft. Though software reconciliation automatically runs each week, Rick must perform on-demand reconciliations to provide the most current information.

### Requirements Summary

#### User Stories

- STRY030301 – Reconcile all software

As a software asset manager, I need to understand my current compliance position for all software in my environment, so that I can identify any actions needed.

- STRY030302 – Run reconciliation with modified license metrics

As a software asset manager, I need to modify Microsoft Project license metrics and metric attributes, so that I can analyze various compliance positions and determine mitigation options.

- STRY030303 – Run reconciliation grouped by country

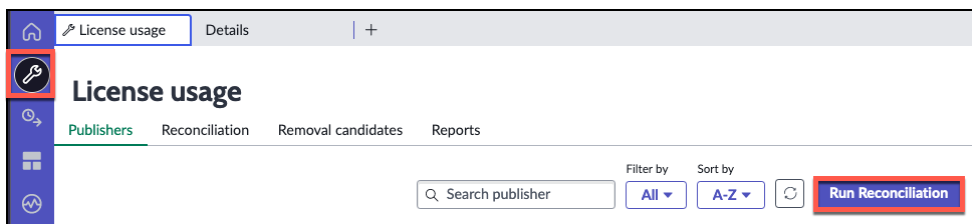
As a software asset manager, I need to group the results of a Microsoft software reconciliation, so that I can analyze compliance by country and determine mitigation options.

## STRY030301 – Reconcile all software

### Section 1 Run reconciliation

Over the last few days the software asset management team has been making changes to improve compliance. Although software reconciliation automatically runs each week, Rick wants to run a reconciliation on demand to get the most current compliance position details on all software in CloudD's environment

1. If not already, impersonate **Rick Lemm**.
2. Navigate to **Software Asset Workspace > License usage**.
3. Click **Run Reconciliation**.



**Knowledge Check:** Refer to the Answer Guide at lab's end.

1. Why does Rick Lemm, the software asset manager, need to perform this task instead of his software asset administrator, Remy Dashun?

4. On the Run Reconciliation form, leave the default options as is and click **Run reconciliation**.

Run Reconciliation

×

Publishers

All publishers

Group

None

Sub-group

None

Cancel

Run reconciliation

- In the Reconciliation results list, click the **Refresh list** button to refresh to the latest reconciliation. Continue clicking **Refresh List** until the latest reconciliation has a Status of Completed.

Publishers

Reconciliation

Removal candidates

Reports

Reconciliation result

11

Run reconciliation

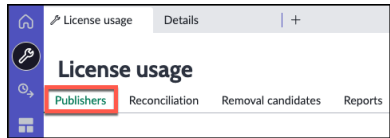
Export

Last refreshed just now.

Number	Last reconciled	Status	Ran for	Publishers	Group	Subgroup	Progress
RR0001011	2023-01-27 08:01:46	Completed	All Publishers		None	None	100%

## Section 2 View publisher results

- From the License usage view, click the **Publishers** tab.



- Scroll down to the Unpinned publishers to view the publisher license compliance.

License usage

Details

Unpinned publishers

21

Adobe Systems

61% compliant

Compliant products

11/18

True-up cost

\$3.53K

Over-licensed amount

\$1.59M

Potential savings

\$22.35K

AspenTech

100% compliant

Compliant products

1/1

True-up cost

\$0.00

Over-licensed amount

\$9.1K

Potential savings

\$0.00

Autodesk Inc.

0% compliant

Compliant products

0/3

True-up cost

\$0.00

Over-licensed amount

\$0.00

Potential savings

\$0.00

Citrix Systems

0% compliant

Compliant products

0/2

True-up cost

\$0.00

Over-licensed amount

\$0.00

Potential savings

\$0.00

Cloud Dimensi...

100% compliant

Compliant products

1/1

True-up cost

\$0.00

Over-licensed amount

\$60K

Potential savings

\$0.00

Corel

100% compliant

Compliant products

1/1

True-up cost

\$0.00

Over-licensed amount

\$1.07K

Potential savings

\$0.00

ej-technologies

0% compliant

Compliant products

0/1

True-up cost

\$0.00

Over-licensed amount

\$0.00

Potential savings

\$0.00

ESRI

0% compliant

Compliant products

0/2

True-up cost

\$0.00

Over-licensed amount

\$0.00

Potential savings

\$0.00

IBM

7% compliant

Compliant products

1/14

True-up cost

\$0.00

Over-licensed amount

\$43K

Potential savings

\$0.00

IDM Computer S...

0% compliant

Compliant products

0/2

True-up cost

\$0.00

Over-licensed amount

\$0.00

Potential savings

\$0.00

LogRhythm

100% compliant

Compliant products

1/1

True-up cost

\$0.00

Over-licensed amount

\$0.00

Potential savings

\$0.00

Microsoft

0% compliant

Compliant products

0/27

True-up cost

\$51.94K

Over-licensed amount

\$3.89M

Potential savings

\$16.85K

Oracle

33% compliant

Compliant products

1/3

True-up cost

\$561.23K

Over-licensed amount

\$5.21M

Potential savings

\$0.00

QlikTech

0% compliant

Compliant products

0/1

True-up cost

\$11.28K

Over-licensed amount

\$0.00

Potential savings

\$0.00

SAP

35% compliant

Compliant products

6/17

True-up cost

\$0.00

Over-licensed amount

\$0.00

Potential savings

\$0.00

Splunk

100% compliant

Compliant products

1/1

True-up cost

\$0.00

Over-licensed amount

\$56.72K

Potential savings

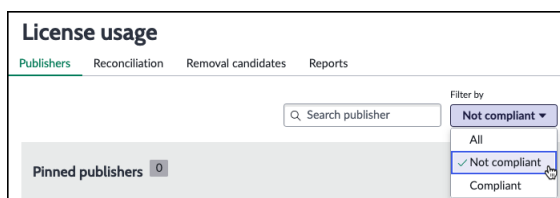
\$0.00

**Note:** Your values may differ from the screenshot, depending upon when you run the lab.

**Knowledge Check:** Refer to the Answer Guide at lab's end.

2. Are Adobe Systems and Microsoft two of the listed publishers?

3. Filter the publishers to show those that are not compliant.



License usage

Details

+

No content to display

Unpinned publishers 14

Adobe... 61% compliant

Compliant products 11/18

True-up cost \$3.53K

Over-licensed amount \$1.59M

Potential savings \$22.35K

Autode... 0% compliant

Compliant products 0/3

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

Citrix S... 0% compliant

Compliant products 0/2

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

ej-tech... 0% compliant

Compliant products 0/1

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

ESRI 0% compliant

Compliant products 0/2

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

IBM 7% compliant

Compliant products 1/14

True-up cost \$0.00

Over-licensed amount \$43K

Potential savings \$0.00

IDM Co... 0% compliant

Compliant products 0/2

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

Microso... 0% compliant

Compliant products 0/27

True-up cost \$51.94K

Over-licensed amount \$3.89M

Potential savings \$16.85K

Oracle 33% compliant

Compliant products 1/3

True-up cost \$561.23K

Over-licensed amount \$5.21M

Potential savings \$0.00

QlikTech 0% compliant

Compliant products 0/1

True-up cost \$11.28K

Over-licensed amount \$0.00

Potential savings \$0.00

SAP 35% compliant

Compliant products 6/17

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

Sublim... 0% compliant

Compliant products 0/1

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

TechS... 0% compliant

Compliant products 0/1

True-up cost \$0.00

Over-licensed amount \$0.00

Potential savings \$0.00

VMwar... 0% compliant

Compliant products 0/3

True-up cost \$0.00

Over-licensed amount \$0.00

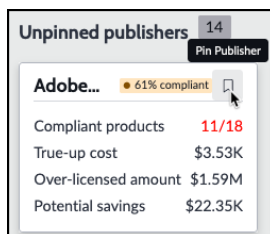
Potential savings \$0.00

**Knowledge Check:** Refer to the Answer Guide at lab's end.

3. Again, are Adobe Systems and Microsoft two of the listed publishers?

**Note:** As Rick knows he needs to pay special attention to Adobe Systems and Microsoft, he wants to pin these two publishers to make it easy to locate and monitor them.

4. Hover over the **Adobe Systems** Card and click the **push pin**.



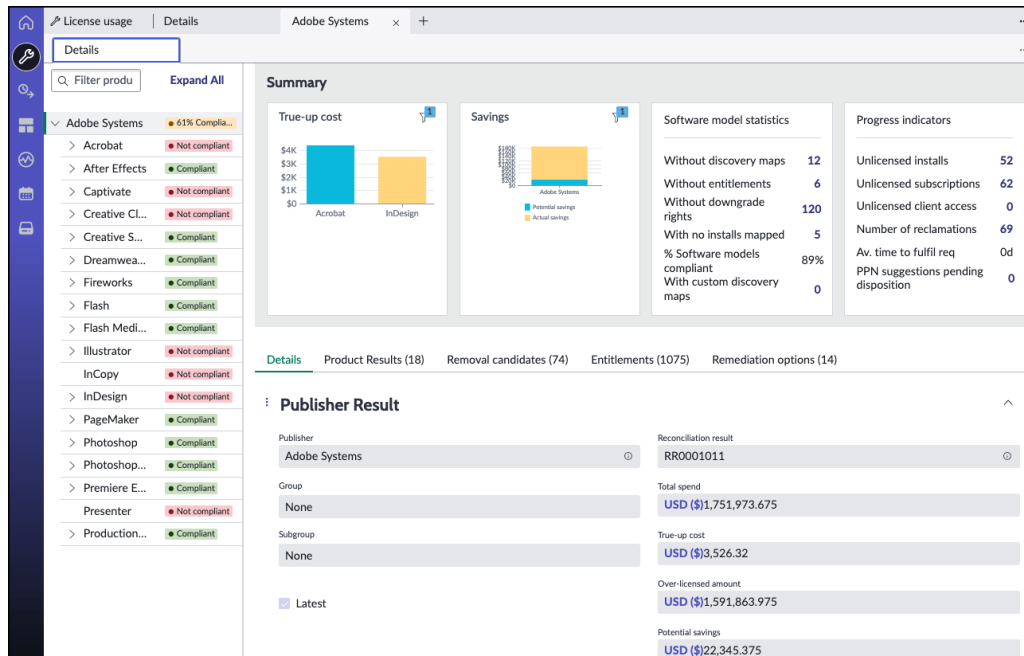
5. Pin the **Microsoft** card as well.

6. Adobe Systems and Microsoft now show up in the **Pinned publishers** section of the view.

## Section 3 View product, model, and license metric results

Rick wants to review Adobe reconciliation results.

1. Click the **Adobe Systems** card to view the publisher details page.



**Note:** Again, your values may differ from those shown here depending on when you ran the lab.

- From the Adobe System navigation tree, click **Illustrator**.

The screenshot shows the Adobe License Usage interface. On the left is a navigation tree under 'Adobe Systems' with a 61% compliance status. The tree lists various products, with 'Illustrator' marked as 'Not compliant'. The main area displays the 'Details' for the selected product, showing a 'Product Result' for 'Illustrator' with a status of 'Not Compliant'. The result includes fields for Number (PR0001580), Publisher (Adobe Systems), Product (Illustrator), Group (None), and Subgroup (None). It also shows reconciliation results, status, true-up cost (USD (\$0.00)), over-licensed amount (USD (\$54,360.25)), and potential savings (USD (\$0.00)).

Product	Compliance Status
Acrobat	Not compliant
After Effects	Compliant
Captivate	Not compliant
Creative Cl...	Not compliant
Creative S...	Compliant
Dreamwea...	Compliant
Fireworks	Compliant
Flash	Compliant
Flash Medi...	Compliant
Illustrator	Not compliant
Single ...	Not compliant
CC	Not compliant
CC 2017	Compliant
CS2 Wi...	Compliant
CS3 Wi...	Compliant
CS4 Wi...	Compliant
CS5 Wi...	Compliant
CS6	Compliant

Field	Value
Number	PR0001580
Publisher	Adobe Systems
Product	Illustrator
Group	None
Subgroup	None
Reconciliation result	RR0001011
Status	Not Compliant
True-up cost	USD (\$0.00)
Over-licensed amount	USD (\$54,360.25)
Potential savings	USD (\$0.00)

**Note:** Notice how the versions of Illustrator are displayed in the tree when Illustrator was clicked.

**Knowledge Check:** Refer to the Answer Guide at lab's end.

4. What is the product status of Adobe Systems Illustrator? Why?

5. What does the over-licensed amount for the product indicate?

**Knowledge Check:** Refer to the Answer Guide at lab's end.

6. How many Software Model Results are identified?

- From the navigation tree, click the Not compliant **CC** software model to open the Software Model Results form.

- Click the Entitlements (1) tab to view the software entitlements.

The screenshot shows the Adobe License Management console. On the left, a sidebar lists various Adobe products with their compliance status. The main area displays a 'Summary' section with a 'True up cost' bar chart, a 'Savings' section with a 'No data available' message, and two tables: 'Software model statistics' and 'Progress indicators'. Below the summary, there are tabs for 'Details', 'License Metric Results (1)', 'Removal Candidates', 'Entitlements (1)', and 'Remediation Options (2)'. The 'Entitlements (1)' tab is active, showing a table of entitlements for 'Adobe Systems Illustrator CC'.

Product	Compliance Status
Adobe Systems	78% Compliant
Acrobat	Compliant
After Effects	Compliant
Captivate	Compliant
Creative Cloud	Compliant
Creative Suite	Compliant
Dreamweaver	Compliant
Fireworks	Compliant
Flash	Compliant
Flash Media Server	Compliant
Illustrator	Not compliant
CC	Not compliant
CC 2017	Compliant
CS2 Windows	Compliant
CS3 Windows	Compliant
CS4 Windows	Compliant
CS5 Windows	Compliant
CS6	Compliant
InCopy	Not compliant

Display name	Metric group	License metric	License type	State	Active rights	Purchased rights	Total cost	Data source
Adobe Systems Illustrator CC	Adobe	User Subscription	Subscription	In use	20	20	\$900.00	Manual

**Knowledge Check:** Refer to the Answer Guide at lab's end.

- How many unlicensed installs are there for this software model?
- How many license metrics are associated to this software model?
- How many total license rights are owned?
- How many total license rights are used?
- How many total license rights are available?
- What actions should you take to improve the management of this software model?



# STRY030302 – Run reconciliation with modified license metrics

## Section 4 View Microsoft results

1. As **Rick Lemm**, navigate to **Software Asset Workspace > License usage**.
2. Look at Microsoft in the **Pinned publishers** and view usage details.

**Knowledge Check:** Refer to the Answer Guide at lab's end.

13. What is the true-up cost for Microsoft?

3. Open the **Microsoft** details page.

**Knowledge Check:** Refer to the Answer Guide at lab's end.

14. How many non-compliant products for Microsoft have been identified?

4. From the navigation tree, open **Microsoft Project**.

> PowerPoint	Not compliant
> Project	Not compliant
> 2013 P...	Not compliant
> 2015	Compliant
> 2016 P...	Not compliant
> Publisher	Not compliant
> SQL Server	Not compliant
> System Ce...	Not compliant
> System Ce...	Not compliant
> System Ce...	Not compliant
> System Ce...	Not compliant
> System Ce...	Not compliant
> System Ce...	Not compliant
> System Ce...	Not compliant
> Visio	Not compliant
> Windows ...	Not compliant

Details	License Metric Results (1)	Removal Candidates (18)	Entitlements (1)	Remediation Options (4)
<b>Software Model Result</b>				
Software model	Microsoft Project 2016 Professional	Status	Not Compliant	
Product result	PRO001598	Agreement type	Generic	
Group	None	Unlicensed installs	37	
Subgroup	None	True-up cost	USD (\$) <sup>43,955.63</sup>	
Latest		Over-licensed amount	USD (\$) <sup>0.00</sup>	
		Potential savings	USD (\$) <sup>16,848.6552</sup>	

**Note:** The results may vary in your instance.

**Knowledge Check:** Refer to the Answer Guide at lab's end.

15. What is the true-up cost for Microsoft Project?

16. How many unlicensed installs are there?

17. Which model or models are causing the non-compliance of Microsoft Project?

- From the navigation tree, open **2016 Professional Windows**.

<ul style="list-style-type: none"> <li>&gt; PowerPoint <span>Not compliant</span></li> <li>&gt; Project <span>Not compliant</span> <ul style="list-style-type: none"> <li>&gt; 2013 Professional Windows <span>Not compliant</span></li> <li>&gt; 2015 <span>Compliant</span></li> <li>&gt; 2016 Professional <span>Not compliant</span></li> </ul> </li> <li>&gt; Publisher <span>Not compliant</span></li> <li>&gt; SQL Server <span>Not compliant</span></li> <li>&gt; System Center Configuration Man... <span>Not compliant</span></li> <li>&gt; System Center Data Protection M... <span>Not compliant</span></li> <li>&gt; System Center Endpoint Protection <span>Not compliant</span></li> <li>&gt; System Center Operations Manager <span>Not compliant</span></li> <li>&gt; System Center Orchestrator <span>Not compliant</span></li> <li>&gt; System Center Service Manager <span>Not compliant</span></li> <li>&gt; System Center Virtual Machine M... <span>Not compliant</span></li> <li>&gt; Visio <span>Not compliant</span></li> <li>&gt; Windows Server <span>Not compliant</span></li> </ul>	<div> Details License Metric Results (1) Removal Candidates (18) Entitlements (1) Remediation Options (4) </div> <div> Software Model Result </div> <div> <div> Software model Microsoft Project 2016 Professional </div> <div> Status Not Compliant </div> <div> Product result PR0001598 </div> <div> Agreement type Generic </div> <div> Group None </div> <div> Unlicensed installs 37 </div> <div> Subgroup None </div> <div> True-up cost USD (\$43,955.63 </div> <div> Over-licensed amount USD (\$0.00 </div> <div> Potential savings USD (\$16,848.6552 </div> </div>
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**Note:** The results may vary in your instance.

**Knowledge Check:** Refer to the Answer Guide at lab's end.

18. What license metrics are identified on the Microsoft Project 2016 Professional Windows product model?

## Section 5 Set entitlement license metric to Per User

Microsoft Project 2016 Professional Windows currently has an entitlement with a license metric of Per Device. To get a better understanding of whether changing the license metric would improve the compliance position, Rick modifies the license metric on the entitlement.

- As **Rick Lemm**, navigate to **Software Asset Workspace > Licensing operations** then click on **Software models** under Licensing.
- Open the **Microsoft Project 2016 Professional** software model that has a Software Entitlement assigned.



License operations

Details

Microsoft Project... x +

Details

Microsoft Project 2016 Professional

Status

In Production

Publish to Software Catalog

Save

Details

Suite Components

Suite Parents

Software Product Life... (3)

Software Entitlements (1)

More ▾

Software Entitlements 1

Last refreshed just now.

Display name ▾

License metric

Metric group

License type

Active rights

Purchased rights

Total cost

ET10051 - Microsoft Project 2016 Professional

Per Device

Microsoft

Perpetual

100

100

\$118,799.00

- On the Software Entitlements tab click **ET10051 - Microsoft Project 2016 Professional** to open the entitlement record.
- Change the License metric to **Per User**.

The screenshot shows the 'Product Details' section of a software management interface. It includes tabs for 'Details', 'Contracts', 'Device Allocations', 'Entitlement Consumption R...', and 'Downgrade Rights'. Under 'Product Details', the 'Display name' is 'ET10051 - Microsoft Project 2016 Professional'. In the 'License Details' section, the 'Agreement type' is 'Generic', the 'Metric group' is 'Microsoft', and the 'License type' is 'Perpetual'. The 'License metric' dropdown is highlighted with a red box and set to 'Per User'.

- Click **Save**.
- Navigate to **License usage** and click **Run Reconciliation**.
- From the popup, under Publishers select **Microsoft**.
- Click **Run reconciliation**.
- In the Reconciliation Results window, click the **Refresh List** button until the latest reconciliation is shown and has a Status of **Completed**.
- Navigate back to **Publishers** tab and under Pinned publishers open **Microsoft**.
- In the navigation tree, expand Project then open the Compliant **2016 Professional** record.

The screenshot shows the 'License usage' interface. On the left, there is a navigation tree with 'Microsoft' expanded, showing various products like 'Access', 'Age of Empires', 'BizTalk Server', etc., all marked as 'Not compliant'. The 'Project' category is also expanded, showing '2013 Professional Windows', '2015', '2016 Professional', and '2016 Professional' (marked as 'Compliant'). On the right, there are several charts and tables. The 'License Metric Results' table shows the following data:

Software model	License metric	Licenses owned	Licenses required	Licenses available
Microsoft Project 2016 Professional	Per User	100	100	

**Note:** The results may vary in your instance.

**Knowledge Check:** Refer to the Answer Guide at lab's end.

19. How many unlicensed installs are there now?

20. What is the true-up cost?

21. What license metric was used to count Microsoft Project 2016 Professional Windows?

22. Why are the unlicensed installs for the Per User license metric less than the Per Device license metric?

23. Why are there still remediation options listed for Microsoft Project 2016 Professional Windows?

## STRY030303 – Run reconciliation grouped by country

### Section 6 Group a reconciliation

Software is often specific to a country or licensed by departments. By default, reconciliation results show compliance based on all owned rights and all used rights. A company may be compliant for one grouping but not another. To further understand the impact, Rick wants to group Microsoft software licenses to determine what the compliance position is by country.

1. As **Rick Lemm**, navigate to **Software Asset Workspace > License usage**.
2. Click **Run Reconciliation**.
3. Populate the popup as follows:
  - Publishers: **Microsoft**
  - Group: **Country**



**Run Reconciliation** [X]

Publishers  
Microsoft X

Group  
Country

Sub-group  
None

Cancel Run reconciliation

- Click **Run reconciliation**.

**Note:** Please be patient. This reconciliation may take longer than the previous reconciliation to run due to the additional data dimension.

- When the reconciliation result has completed, navigate to **Microsoft Project** on the License usage **Publishers** tab.
- Click on **Project** in the navigation tree.

> Power BI	Not compliant
> PowerPoint	Not compliant
> Project	Not compliant
> Germany:...	Not compliant
> Japan:No...	Not compliant
> China:No...	Not compliant
> Any:None	Not compliant
2015	Compliant
2016 ...	Not compliant
2016 ...	Compliant
> United Ki...	Not compliant
> Italy:None	Not compliant
> Colombia:...	Not compliant
> Czech Re...	Not compliant
> Australia:...	Not compliant
> USA:None	Not compliant
> France:N...	Not compliant
> Brasil:None	Not compliant
> Publisher	Not compliant

Details

Software Model Results (3) Removal Candidates (16) Entitlements (2) Remediation options (3)

Product Result

Number

PR0001732

Reconciliation result

RR0001014

Publisher

Microsoft

Status

Not Compliant

Product

Project

True-up cost

USD (\$0.00

Group

Country: Any

Over-licensed amount

USD (\$0.00

Subgroup

None

Potential savings

USD (\$20,736.8064

Latest

Licensed installs

107

Unlicensed installs

3

**Knowledge Check:** Refer to the Answer Guide at lab's end.

24. What is the reconciliation status and true-up cost for Country: Any? **Challenge:** Why?

**Note:** The results in your instance may vary.

**Congratulations! You have completed this lab!**

**You are now ready to begin learning about other processes that integrate with and are important to Software Asset Management.**

## Knowledge Check Answer Guide

1. **Why does Rick Lemm, the software asset manager, need to perform this task instead of his software asset analyst, Remy Dashun?**
  - The Run Reconciliation capability requires the sam\_admin role. Remy was only granted the sam\_user role.
2. **Are Adobe Systems and Microsoft two of the listed publishers?**
  - Yes
3. **Again, are Adobe Systems and Microsoft two of the listed publishers?**
  - Yes
4. **What is the product status of Adobe Systems Illustrator? Why?**
  - Not Compliant
  - True-up costs are identified.
5. **What does the over-licensed amount for the product indicate?**
  - There are software entitlements with license rights not in use.
6. **How many Software Model Results are identified?**
  - 8
7. **How many unlicensed installs are there for this software model?**
  - 4
8. **How many license metrics are associated to this software model?**
  - 1 (User Subscription)
9. **How many total license rights are owned?**
  - 20
10. **How many total license rights are used?**
  - 20
11. **How many total license rights are available?**
  - 0 User Subscriptions
12. **What actions should you take to improve the management of this software model?**
  - Allocate the licenses that are in use but are currently unallocated or remove the unallocated installs if they shouldn't be assigned to the users or devices that are using them.

13. **What is the true-up cost for Microsoft?**

- ~\$102k

14. **How many non-compliant products for Microsoft have been identified?**

- 19

15. **What is the true-up cost for Microsoft Project?**

- ~\$44,000

16. **How many unlicensed installs are there?**

- 60

17. **Which model or models are causing the non-compliance of Microsoft Project?**

- Microsoft Project 2016 Professional Windows, Microsoft Project 2013 Professional Windows

18. **What license metrics are identified on the Microsoft Project 2016 Professional Windows product model?**

- Per Device

19. **How many unlicensed installs are there now?**

- 0

20. **What is the true-up cost?**

- \$0.00

21. **What license metric was used to count Microsoft Project 2016 Professional Windows?**

- Per User

22. **Why are the unlicensed installs for the Per User license metric less than the Per Device license metric?**

- When counting Per device – each device that has an installation of the software license is counted.
- When counting Per User – some users have licenses on more than one device, so the license would only be counted one time for that user regardless of how many devices he had it running on.

23. **Why are there still remediation options listed for Microsoft Project 2016 Professional Windows?**

- Because although you have 100 rights available, none of them have been allocated to the 100 users that have the product installed.
-

**24. What is the reconciliation status and true-up cost for Country: Any? Challenge: Why?**

- Country: Any – Not Compliant, True-up cost of \$0.
- Because True-up cost is calculated as an average cost of all entitlements for a given country. Since there are no entitlements for the countries in which the unlicensed software is installed, the average is \$0.0 even though there are 45 unlicensed installs.

## Lab takeaways



- What product and model results drive compliant/not compliant?
- Why does changing the license metric change the product and model compliance results?
- What is the value of grouping when running a reconciliation?