PROVANCE

Provance IT Asset Management Standard

For Microsoft® System Center

User Guide

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Provance IT Asset Management Standard for Microsoft System Center Service Manager

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1 Getting Started

The concepts and instructions provided in this section apply to all aspects of Provance IT Asset Management Standard.

Introduction to Provance IT Asset Management Standard

Provance IT Asset Management Standard works with both your IT and business systems to bring together isolated silos of asset-related operational and financial information into a unified actionable view. Integration with Active Directory, Microsoft System Center 2012 - Configuration Manager, Operations Manager, Orchestrator and Virtual Machine Manager, and Data Management Pack for 2012, lets you easily import and associate detailed hardware and software configuration data with business data from your ERP, finance, procurement, invoicing and human resource systems. Provance IT Asset Management Standard brings together and reconciles asset detail from multiple sources – auto discovery solutions, business systems, manual entry, CSV or flat files, spreadsheets and databases – and provides you with a single, consolidated source of data for analysis and reporting. Process integra-

tion lets you expose this unified asset detail directly within Service Manager to support and improve incident, problem, change, configuration, release and request management. Provance IT Asset Management Standard is a Process Management Pack for Microsoft® System Center 2012 - Service Manager. As a Process Management Pack, Provance IT Asset Management Standard is built using the Service Manager platform framework and completely integrated with the following Service Manager platform technologies: the Configuration Management Database (CMDB), the Connector and Linking framework, connectors to Active Directory, Configuration Manager, Operations Manager, Workflow, Virtual Machine Manager, and the Data Warehouse. By leveraging and extending these technologies, Provance IT Asset Management Standard provides additional capabilities which run within Service Manager:

- IT Asset Life Cycle Management for controlling IT costs and effectively managing hardware and software throughout their entire life cycle
- Software Asset Management for minimizing software costs and effectively managing licenses to avoid over and under utilized licensed software titles
- Financial, contractual and organizational information to support more efficient and cost effective IT Service Management
- Warranty, maintenance and lease agreements that are linked to your hardware assets so IT Service Management users can determine at a glance the warranty and support available

Hardware asset management

Provance IT Asset Management Standard provides you with the necessary tools to manage your assets through their entire life cycle, from their initial request to their disposal. Assets are naturally segmented into distinct classes based upon their use, properties, approval processes, accounting methods and other business factors. The distinct classes allow different management processes to be applied against them and for slightly different data sets to be managed independently. For example, the life cycles and processes for managing general assets like projectors or phones are different than those for computers.

A hardware catalog is used to standardize make/model information. The catalog can be used to publish service and request offerings to an existing self-service portal.

Computer assets can be linked to the configuration data captured by Configuration Manager and Operations Manager and stored as configuration items (CIs) in the Service Manager CMDB. By linking financial data (computer asset) to configuration data (Windows computer CI), installed software data can be leveraged when managing licenses. General assets are used to define and manage non-computer assets. Across both classes, additional hardware asset data includes location, ownership, financial, contractual and historical information. Specifically, warranty, lease, support and agreements can be stored along with financial and organizational details, such as cost, ownership and location of the hardware asset. All changes made to the asset item are recorded across the entire life cycle. By managing the hardware life cycle with Provance IT Asset Management Standard, organizations ensure compliance with internal corporate policies and government legislation relating to data privacy, software compliance and safe hardware disposal.

Assets and asset related data can be entered manually or imported from other systems. For information on how to import data, see "**Importing vs. entering data manually**" on page 3-14.

Software asset management

For software asset managers that want to minimize software costs, Provance IT Asset Management Standard identifies overspending on unused software (over licensing) as well as under licensing of software titles.

The key to managing software assets is understanding the difference between what has been licensed and what has been installed. Provance IT Asset Management Standard lets you quickly and easily access the information you need in order to understand your software licensing position. With on demand as well as point in time calculation of your licensing position, you will always be ready for any situation, such as an audit.

Through reports and business intelligence, Provance IT Asset Management Standard exposes the data required by software asset managers to improve their purchases and forecasts and potentially identify outlying cases that are impacting their efficient use of licenses.

Agreement management

When related to your assets, agreements can provide asset managers and IT Service Management users with warranty, lease and maintenance agreement information at a glance. Agreements have activation and expiration dates. The direct relationship between an asset, hardware or software, and its agreement simplifies the importing of data.

A generic user defined agreement allows customers to create business agreements, service agreements or other umbrella agreements.

Agreements can be related to each other.

Shared interface for Service Manager and Provance

The Service Manager console and Provance IT Asset Management Standard integrated into it share a common interface. The main items of the interface are as follows:

- a navigation pane
- a view pane
- a tasks pane

Navigation pane

The left-hand area of the interface is called the navigation pane. The navigation pane is used to move between the following items:

- **Workspaces:** the largest categorization of your work in Service Manager contains items, such as Provance IT Asset Management Standard, Data Management Pack for 2012, and Administration. The Administration workspace is where you can configure items such as the Provance license and settings affecting Provance IT Asset Management Standard.
- **Folders:** smaller containers for items such as Agreement Management, Hardware Asset Management, and Software Asset Management.
- **Views:** click on a view inside a folder to display the items associated with it in the center View pane. A view can either be a tabular listing of data or a graphical representation of items and their relationship to one another. For example, the **Software Titles Tracked by Installation** view displays all of your software titles in a tabular format, with columns showing their Licensing Status, the Installed Quantity, and the Entitlements you have.

Task pane

The right-hand area of the interface is called the Tasks pane. It is used to perform tasks associated with the item selected in the View pane. The tasks are context sensitive, i.e., they change depending on the type of item selected, as well as the number of items selected in the View pane.

Depending on your network's speed, the Tasks pane may take a few seconds to refresh. Before you apply a task to one or more items in the view, ensure that the number of items you selected appears at the top of the Tasks pane, e.g., Selected Items (3). This count reflects the number of items that the task will be applied to.

View pane

A view is a summary of your data, either arranged into a tabular format with columns and rows, or arranged visually showing the hierarchical relationship between items. A view can include hardware or software asset management, contractual, financial or organizational data. Select a view in the IT Asset Management workspace to have it appear in the center View pane of the Service Manager console.

Select an item in the View pane (tabular format only), to show a preview of it in the bottom portion of the View pane. The preview contains a summary of the item's contents.

Viewing assets

Views provide different ways of representing your hardware or software assets and important information related to them. Views with columnar data can be sorted, grouped, filtered and their columns changed. Views can also be created and customized to suit your requirements. For more details about creating custom views, refer to the Service Manager online help.

To open an asset management view:

>> In the IT Asset Management workspace, open Hardware Asset Management or Software Asset Management, select a folder and then a view within the folder.

Viewing the assets related to an item

There are many places where you can view the hardware or software assets that are related to a specific item, such as those assets related to an incident or a computer CI. In all instances you need to first link the hardware asset to the item. All the areas in Service Manager and Provance IT Asset Manage-

ment Standard where you can view related assets are described in their applicable sections as follows:

- Computer CI
- Hardware catalog item
- Hardware maintenance agreement
- Incident
- Lease
- Software title
- Users

The related hardware or software asset results are considered advanced search results that can be filtered, exported, etc.

Sorting, grouping and filtering views

- **To sort views,** click on the column headers. For example, in the **Software Titles Tracked by Installation** view, click the Approval Status column header to sort the data in ascending order by the approval status (Approved or Not Approved). Click the column header again to sort the data in descending order.
- **To group views,** right click on the column header bar, select Group By and then select the column to group on.
- **To filter data** in a view, enter a keyword or string, or portion thereof, in the Filter field at the top of the View pane. Asset items are immediately filtered in the view as you enter in a filter.
- **For advanced filtering**, click **Edit Criteria** at the top of the View pane and select **+add criteria**. A list of the available columns is displayed, providing advanced filter criteria for your view. Select the desired columns and enter a keyword or string, or portion thereof, to filter the view based on your criteria.
- **Filters remain active** until you clear them. To clear a filter, delete the contents of the Filter field or click the **x** next to the Filter field. To clear all filters, click **Clear All**.

Removing, adding and reordering columns in a view

All views can be modified to show or hide columns. Some views have optional columns that are hidden by default.

To remove or add columns to a view, right click the column header bar. The column menu appears. To remove a column from the view, deselect it (clear check mark) in the menu. To add a column to the view, select it (add check mark) in the menu.

To reorder columns in the view, click, hold and drag the column heading to a new position.

Using the tree view

A tree view visually shows the hierarchical relationship between items. The tree view is only available on certain items having a hierarchical relationship. For example, the Location tree view could show the cities Boston, New York and San Francisco, each having a single building with multiple floors, each floor having multiple rooms, and finally the hardware assets in each room. The following tree views are available:

- **All Locations:** shows all locations, their children and their hardware assets.
- **All Locations with Affiliated Users:** shows all locations, their children and the users that they have an affiliation with.
- **All Organizations:** shows all organizations, their children and their hardware assets.
- **All Organizations with Affiliated Users:** shows all organizations, their children and the users that they have an affiliation with.
- **All Cost Centers:** shows all cost centers, their children and their hardware assets.
- **All Cost Centers with Affiliated Users:** shows all cost centers, their children and the users that they have an affiliation with.
- **Hardware Assets by Location:** shows all locations with hardware assets as their children. Assets that have no location are shown at the top level (at the same level as the locations).

NOTE: *Relationships cannot be created from a tree view. The relationships shown in these views are created from the item, such as from a location, an organization or a hardware asset.*

Financial and organizational entities

The Finance and Organization Management folder in Provance IT Asset Management Standard includes the following business entities: catalogs (hardware and software), companies, contacts, cost centers, locations, and organizations. Business entities allow you to structure and segment agreements, hardware, and software assets for reporting and tracking purposes. Both hardware assets and software titles make use of business entities, especially the items in their respective catalogs.

Catalogs for hardware and software

The hardware and software catalogs provide your hardware and software assets with standardization and additional data. Specifically, the hardware catalog provides a refresh cycle as well as standardized manufacturer, model and preferred supplier information. The software catalog provides rules for collecting software usage data as well as software items that have yet to be mapped to versions. For more details and instructions on how to use them, see "**Creating a hardware catalog**" on page 5-12 and "**Tracking software usage data**" on page 6-18.

Location, organization and cost center

The **location** represents the physical location of an asset, such as a building, a city or a rack. Choose the structure of your location information based on what suits your organization. One example would be a city based structure, such as Boston, New York and San Francisco. Each city could have one or more buildings and each building could have one or more rooms.

An **organization** represents a logical division of your business. It can be as large as a region or as small as a department.

A **cost center** represents a financial entity in your organization.

About their relationship to assets, titles and users

Locations, organizations and cost centers are considered business information. Add them to your hardware assets, software titles and users to improve your assignment and harvesting tasks. When added to your hardware assets, business information helps you determine who has paid for the asset, where it is located, and who is responsible for it. Add, or affiliate, business information to a user so you can make more informed decisions when assigning the user to a software title. Also, when affiliated with a user, business information can be automatically associated with service requests made by or on behalf of the user.

You can also add contacts and a parent to locations, organizations and cost centers.

How do I see the relationships that are set up?

There are several methods for viewing the relationships you have set up for locations, organizations and cost centers:

- You can see all the hardware assets related to a location, organization, or cost center through the **View Related Hardware Assets** task.
- You can see a visual representation of the relationships created for organizations, locations, and cost centers. Use a tree view to see these relationships. For more details about tree views, see "Using the tree view" on page 1-8.

You will notice on forms that the fully qualified hierarchy for locations, cost centers, and organizations is displayed, but on views only the location, organization or cost center identifier is displayed. Fully qualified names include the separator \. An example of a fully qualified location would be as follows: \North America\United States\San Francisco, CA - USA\Building 4 - San Fransico South\5th Floor\Suite 501\Cubicle 501-1E.

Each location, organization and cost center must have a display name or a code that you create to identify it in the system.

Creating a company

Companies are used to represent suppliers, manufacturers, publishers and other external companies in agreements and hardware and software assets. Companies can be created either before or during the creation of agreements, and the creation of hardware and software catalogs.

To create a company:

1. Go to the IT Asset Management workspace and expand the Finance and Organization Management > Companies view.
2. In the Tasks pane, click **Create Company**. The New Company form opens.
3. Complete the fields on the General tab and click **OK** to save the company.

Creating a contact

Contacts are used to provide your assets with additional information. Some of the items that contacts can be associated with include agreements, companies, locations, organizations, and cost centers. When you access these items through a hardware asset, and in some cases a software title, you can obtain a contact's information.

To create a contact:

1. Go to the IT Asset Management workspace and expand the Finance and Organization Management > Contacts folder.
2. In the Tasks pane, click **Create Contact**. The New Contact form opens.
3. Complete the fields on the General tab and click **OK** to save the contact.

Creating a cost center

To create a cost center:

1. Go to the IT Asset Management workspace and expand the Finance and Organization Management > Cost Centers folder.
2. In the Tasks pane, click **Create Cost Center**. The New Cost Center form opens.
3. Complete the fields on the General tab.
4. (Optional) To add a parent cost center, complete the Hierarchy section.

5. Click **OK** to save the cost center.

Creating a location

To create a location:

1. Go to the IT Asset Management workspace and expand the Finance and Organization Management > Locations folder.
2. In the Tasks pane, click **Create Location**. The New Location form opens.
3. Complete the fields on the General tab.
4. (Optional) To add a parent to the location, complete the Hierarchy section.
5. Click **OK** to save the location.

Creating an organization

To create an organization:

1. Go to the IT Asset Management workspace and expand the Finance and Organization Management > Organizations folder.
2. In the Tasks pane, click **Create Organization**. The New Organization form opens.
3. Complete the fields on the General tab.
4. (Optional) To add a parent to the organization, complete the Hierarchy section.
5. Click **OK** to save the organization.

Importing and exporting data

With the combination of Provance IT Asset Management Standard, Service Manager, and Data Management Pack for 2012 you have the ability to export and import data. Provance IT Asset Management Standard can be used to export data as a CSV file. Data Management Pack for 2012 can be used to import source data into Provance IT Asset Management Standard, such as hardware assets and the financial data for use with your assets. Service Man-

ager may also be used to import data into Provance IT Asset Management Standard, through its **Import from CSV file** utility. For more details on Data Management Pack for 2012, refer to its User Guide. For more information on the Import from CSV file utility, refer to the Service Manager online help.

Exporting data

You can export data from any view or search results dialog as a csv file for use with Excel. In addition to exporting the data you see in a view, you can also export related data you cannot see. When you select one or more items, such as several software titles, you can choose which related classes and properties of those items to export. For example, if you are exporting ten software titles and they all have assignments then you could also export the users and locations associated with those assignments.

The properties from each selected class are listed consecutively in the generated CSV file. Exported data can be reimported in CSV format, using Data Management Pack for 2012, without the need for an XML format file (required by the Service Manager CSV import).

Exported classes and properties can be saved as a template for reuse. This is useful if you export the same relationships, classes and properties repeatedly.

NOTE: *If you are exporting data that has multiple relationships, the entire data structure will be repeated for each relationship in your exported file. For example, if you export a hardware asset with two assigned software titles, each with two assigned users, the CSV will contain four complete entries beginning with the hardware asset and ending with the user.*

To export data from a view:

1. Open the IT Asset Management workspace.
2. Go to a view, such as Software Asset Management > Software Titles Tracked by Installation.
3. Select one or more items in the view, such as software titles.
4. In the Tasks pane, click **Export Data**. The Export Data to CSV wizard opens.

5. Select **Create a new template** or **Use an existing template** if you have a previously saved template.
6. Click **Next**.
7. Select the Related Classes and the Available properties and click **Add**. The properties are added to the Selected properties table.

   When making a selection, use the **tool-tip** description available for each class to help you differentiate between similarly named classes.
8. Change the name of the **Property Alias** if you wish to simplify the column name in the exported file.
9. When you have selected all of the classes and properties you wish to export, click **Next.**
10. Browse for a filename and location.
11. Click **Save as Template** if you wish to save the exported classes and properties to an existing template or to a new template.
12. Click **Export** to export the data to csv. The last page of the wizard informs you that the export was successful.

Export templates

An export template describes the object or objects that you are exporting and their properties. Export templates are managed from within the Export Data wizard. From the wizard you can create new templates, edit existing templates and remove templates.

Export templates cannot be transferred between consoles. The template name can only contain the following characters: alphabetic, numeric, a period (.) and an underscore (_).

Reporting

Provance IT Asset Management Standard comes with several reports to help you manage your agreements, hardware assets and software assets. The reports can be found in the Reporting workspace, under IT Asset Management, and are described in the following sections:

- "**Hardware asset management dashboard**" on page 8-2
- "**Serialized hardware asset details report**" on page 8-5
- "**Serialized hardware assets report**" on page 8-4
- "**Computer asset exceptions**" on page 8-6
- "**Agreement summary report**" on page 8-11
- "**Agreement detail report**" on page 8-13
- "**Software titles tracked by assignment report**" on page 8-7
- "**Software titles tracked by installation report**" on page 8-9

Currencies and exchange rates

If you are entering financial data in multiple currencies, the Administrator needs to enter an exchange rate for each type of currency. The exchange rate is necessary when generating reports, since Provance IT Asset Management Standard converts multiple currencies into a common base currency in reports. For more details, see "**Currencies and exchange rates**" on page 3-4.

History of activity

All asset records in Provance IT Asset Management Standard retain historical information. You can find out who made certain changes to an asset and when they were made. Examples of records that retain their history include hardware assets and software titles.

Changes to the life cycle of a hardware asset are reported in the Hardware Asset Details report.

2 Financial & Organizational Entities

Provance business entities

The Finance and Organization Management folder in Provance IT Asset Management Standard includes the following business entities: catalogs (hardware and software), companies, contacts, cost centers, locations, and organizations. Business entities allow you to structure and segment agreements, hardware, and software assets for reporting and tracking purposes. Both hardware assets and software titles make use of business entities for tracking asset location and ownership as well as standardization. Also included in the folder are invoices and purchase orders so you can also manage the procurement aspect of your assets. It is important that you establish a corporate standard for all of these entities, especially if different individuals will be using them, such as both a Hardware Asset Manager and a Software Asset Manager.

Refer to the Data Population Primer for best practices on sourcing and importing these entities.

Catalogs for hardware and software

The hardware and software catalogs provide your hardware and software assets with standardization as well as supplemental data. Specifically, the hardware catalog provides a refresh cycle as well as standardized manufacturer, model and preferred supplier information. To provide these benefits, the hardware catalog is linked to hardware assets. The software catalog provides rules for obtaining software usage data from Configuration Manager and a view of the unmapped software items. Software usage rules are linked to software items and in a similar manner unmapped software items can be linked to versions. Hardware asset linking can be performed during an import of data or manually on an asset by asset basis during creation or editing. For more details and instructions on how to use catalogs, see "**Creating a hardware catalog**" on page 5-12, "**Tracking software usage data**" on page 6-19, and "**Creating software versions and mapping software items**" on page 6-14.

Viewing related assets

You may view the assets related to a hardware catalog serialized item, providing the asset and catalog item are already linked to one another:

Item	How to Link an Asset	How to View Related Assets
Hardware catalog item	**1.** Go to the Hardware Asset Management > Computer > All Computer Assets view. **2.** Open a hardware asset. **3.** In the Model field, click **Add**. The Select Object form opens. **4.** Find a catalog item and click **OK**. **5.** Click **OK** to save the hardware asset. The catalog item and the hardware asset are now related. **NOTE:** If your computer assets already have Model information, which came from hardware catalog items, then they may already be related.	**1.** Go to the Finance and Organization Management > Catalogs > Hardware > All Hardware Catalog Serialized Items view. **2.** Select a catalog item. **3.** Click **View Related Computer Assets**.

Location, organization and cost center

The **location** represents the physical location of an asset, such as a building, a city or a rack. Choose the structure of your location information based on what suits your organization. One example would be a city based structure, such as Boston, New York and San Francisco. Each city could have one or more buildings and each building could have one or more rooms.

An **organization** represents a logical division of your business. It can be as large as a region or as small as a department.

A **cost center** represents a financial entity in your organization.

About their relationship to assets, titles and users

Locations, organizations and cost centers are considered business information. Add them to your hardware assets, software titles and users to improve your assignment and harvesting tasks. When added to your hardware assets, business information helps you determine who has paid for the asset, where it is located, and who is responsible for it. Add, or affiliate, business information to a user so you can make more informed decisions when assigning the user to a software title. To see all users affiliated with a business entity, use its tree view, such as **All Organizations with Affiliated Users**.

You can also add contacts and a parent to locations, organizations and cost centers.

How do I see the relationships that are set up?

There are several methods for viewing the relationships you have set up for locations, organizations and cost centers:

- You can see all the computer assets related to a location, organization, or cost center through the **View Related Computer Assets** task.
- You can see a visual representation of the parent-child relationships created for organizations, locations, and cost centers. Use a tree view to see these relationships. For more details about tree views, see "Using the tree view" on page 1-8.

You will notice on forms that the fully qualified hierarchy for locations, cost centers, and organizations is displayed, but on views only the location, organization or cost center identifier is displayed. Fully qualified names include the separator \. An example of a fully qualified location would be as follows: \North America\United States\San Francisco, CA - USA\Building 4 - San Fransico South\5th Floor\Suite 501\Cubicle 501-1E.

Each location, organization and cost center must have a display name or a code that you create to identify it in the system.

Viewing related assets

You may view the assets related to a cost center, location or organization, providing the asset and entity are already linked to one another:

Item	How to Link an Asset	How to View Related Assets
Cost Center	**1.** Go to the Hardware Asset Management folder and select an All Hardware Assets view (e.g., All Computer Assets). **2.** Open a hardware asset. **3.** Go to the Financial tab, Purchase Details section. **4.** Add a Cost Center.	**1.** Go to the Finance and Organization Management folder > Cost Centers > All Cost Centers view. **2.** Select a cost center. **3.** Click **View Related Computer Assets**. **NOTE:** The results contain all of the related assets for the cost center.
Location	**1.** Go to the Hardware Asset Management folder and select an All Hardware Assets view (e.g., All Computer Assets). **2.** Open the hardware asset. **3.** Go to the Ownership and Location section and add a Location.	**1.** Go to the Finance and Organization Management folder and click Locations > All Locations. **2.** Select a location. **3.** Click **View Related Computer Assets**. **NOTE:** The results contain all of the related assets for the location.
Organization	**1.** Go to the Hardware Asset Management folder and select an All Hardware Assets view (e.g., All Computer Assets). **2.** Open the hardware asset. **3.** Go to the Financial tab and add an Organization.	**1.** Go to the Finance and Organization Management folder and click Organizations > All Organizations. **2.** Select an organization. **3.** Click **View Related Computer Assets**. **NOTE:** The results contain all of the related assets for the organization.

Companies

Companies are used to represent suppliers, manufacturers, publishers and other external companies in agreements and hardware and software assets. Companies can be created either before or during the creation of agreements, and the creation of hardware and software catalogs.

Contacts

Contacts are used to provide your assets with additional information. Some of the items that contacts can be associated with include agreements, companies, locations, organizations, and cost centers. When you access these items through a hardware asset, and in some cases a software title, you can obtain a contact's information.

Purchase orders

Purchase orders (POs) are included in hardware assets and agreements. POs allow you to track what has been purchased and from whom. POs may be imported from a Financial system using either the csv import feature of Microsoft System Center 2012 - Service Manager or Data Management Pack for 2012.

Use the existing hardware catalog to populate your POs with common data, such as product names and manufacturers. Add multiple lines to your POs identifying hardware catalog items and/or consumables ordered from a supplier. Integrate the creation of POs with your procurement processes; for example, you will likely have an approval process that is tied in with the creation of each PO.

Creating a purchase order

When you create a PO you include relevant information, such as cost, manufacturer, approval date, status, shipping and billing, and a list of all the individual line items being ordered. Line items include all the assets or consumables that are being purchased together.

To create a PO and its line items:

1. Go to the Finance and Organization Management > Purchase Orders > All Purchase Orders view.
2. In the Tasks pane click **Create Purchase Order**. The Purchase Order form opens.
3. Complete as many fields as you can on the form. Consider the following guidelines while entering data:

   Life Cycle: When the status is set to Approved, set the Approved Date before submitting the form, since it cannot be changed afterwards.

   Reference: This could be a standing contract number or it could be an order number with the vendor.
4. Click **Create** on the Line Items tab to create a new line item for the PO. The New Purchase Order Line Item form opens.
5. Complete as many fields on the Line Item form as you can. Consider the following guidelines while entering data:

   Quantity: The number of items you are ordering, e.g., 10 ThinkPad T510 laptops.

   Adjustment Reason: A reason for a price adjustment could be a special volume discount.

   Last Change Date: When someone changes the line item and saves it, the date is updated.
6. Once line items are created they are added to the Line Items tab of the PO.

Invoices

Invoices for your purchases can be included in both hardware assets and agreements. Add multiple invoices to track all of your purchases related to assets and agreements.

Take note of the following important fields on the invoice form:

Field	Description
Invoice Number	Enter the number you received from the vendor.
Type	Use the type as a method of filtering like invoices.

Field	Description
Internal contacts	Internal contacts are derived from active directory users in Service Manager.
External contacts	External contacts are derived from the Finance and Organization Management > Contacts folder.
Amount	The amount is populated from the line items added to the invoice. Create the line items before saving and closing the invoice.

To create an invoice:

1. Go to the IT Asset Management workspace > Finance and Organization Management > Invoices folder.
2. In the Tasks pane, click Create Invoice. The New Invoice form opens.
3. Complete the fields on the General tab but leave the Amount incomplete.
4. Add line items to the invoice from the Line Items tab. The Amount field on the invoice is then populated from the line items.

Service Manager business entities

Service Manager has several business entities that are used by Provance for the purposes of obtaining current information from, such as software installed on a computer or users as owners of assets. As described in this section, Provance CIs have links to these entities so that when workflows run, various checks and updates can be performed.

Computers

The computer CI is discovered by Configuration Manager. A computer CI is linked to a computer hardware asset. The computer CI serves as a base record for installed software and software usage, so having it automatically discovered and maintained is highly desirable. It also serves as the base entity involved when we view related assets from various objects, such as users. A new CI is checked to see if there is a matching hardware asset using its serial number or asset tag. For more details on the relevance of this matching, see "**Hardware asset and computer CI linking**" on page 5-7.

Viewing related assets

You may view the assets related to a computer CI using a task, providing the asset and the CI are already linked to one another:

Item	How to Link an Asset	How to View Related Assets
Computer CI	Follow the instructions in "**Creating a hardware asset**" on page 5-13. The CI and the hardware asset are now related. **NOTE:** If the serial number and/or asset tag is identical between the CI and the asset, you do not need to manually link them together. For more details, see "**Hardware asset and computer CI linking**" on page 5-7.	**1.** Go to the Configuration Items workspace and click Computers. **2.** Select a view and a computer CI in that view. **3.** Click **View Related Computer Assets**.

Software

A software item represents a single discoverable version of a software application. A software item is derived from the Configuration Manager connector. Installed software items are linked to software titles to provide installation information when determining your licensing position. This linking is not

automatic, but must be set up manually. For more details about the linking of software items to titles, see "Software title" on page 6-9.

Users

Users are derived from the SCSM Active Directory connector. Users are implemented as owners of assets in Provance IT Asset Management Standard. Specifically, they appear as the **Assigned to** on hardware assets. Assignments are visible from a user CI using the **Manage Software Title Assignments** task. In addition, users can be affiliated with locations, organizations and cost centers. A tree view for each business entity shows all the users affiliated with it. In a similar manner to assignments, affiliations are created/edited from user CIs using the **Manage Affiliations** task.

Viewing related hardware assets

You may view the assets related to a user through a task, providing users and assets are already linked to one another:

Item	How to Link an Asset	How to View Related Assets
Users	**1.** Go to the Hardware Asset Management folder and select an All Hardware Assets view (e.g., All Computer Assets). **2.** Open a hardware asset. **3.** Go to the Ownership & Location > Assigned to field and click **Add** to find a user. The Select User form opens. **4.** Select a user and click **OK**. The user is assigned to the hardware asset, which indicates they are now related.	**1.** Go to the Configuration Items workspace and click **Users**. **2.** Select a user and click **View Related Computer Assets**.

3 Administration and Configuration

Configuring and using Provance IT Asset Management Standard

Configuring Provance IT Asset Management Standard

Table 3-1 describes the settings you should consider configuring after you install Provance IT Asset Management Standard. When you perform an

upgrade the existing configuration values should remain unchanged.

TABLE 3-1. Provance IT Asset Management Standard **Configuration Settings**

Setting	Description	Recommended
Base currency	A base currency is used as the currency displayed in all reports. The default is U.S. dollars.	Yes, if you plan to have more than one currency in use. See "**Base currency**" on page 3-4.
Exchange change rates	Add an exchange rate for each additional currency so it can be converted to the base currency in reports.	Yes, if you plan to have more than one currency in use. See "**Currencies and exchange rates**" on page 3-4.
Enable duplicate asset tags and serial numbers		No
Software usage data	Create a connector to collect software usage data and then map the data to one or more software versions.	Optional. See "Tracking software usage data" on page 6-18.
Hardware workflow	Create a relationship between a hardware asset and its incidents. Incidents are visible from the Related Items tab of the asset.	Optional. See "**Hardware asset and computer CI linking**" on page 5-7 and "**Linking incidents and hardware assets**" on page 9-2.
User defined agreements	Add your own agreements to the existing agreement types.	Optional. See "**Creating and using user defined agreements**" on page 4-8.

Administrative settings

Administrative settings for Provance IT Asset Management Standard can only be set by someone with Administrator rights in Service Manager.

Agreement settings

Visual indicators are used to indicate that agreements are going to expire in a certain number of days. The visual indicator for agreement expiration is shown on most hardware assets, when they are linked to an agreement, on the Agreement Summary report and on the Serialized Hardware Asset Details report. In the case of a hardware asset, the message describing the expiration status of the agreement is highlighted in red, yellow or green as a visual clue. Threshold settings define when each color appears on the asset. The settings apply to all types of agreements, both hardware and software. The default threshold settings are described in "**Understanding agreement expiration indicators**" on page 4-8.

An agreement is expired when its Expiration Date occurs on or before the date derived from the expired threshold. A zero is considered to be today. For example, if you enter 2 days from today, then an agreement whose Expiration Date occurs within the next 2 days, or anytime prior to that, is considered expired. If the expired threshold and the close to expired threshold overlap, then the expired threshold is considered first. Anything left over from the overlap is considered part of the close to expired threshold.

To change the thresholds for agreement expiration indicators:

PREREQUISITE: You need to have Administrator privileges to change the thresholds.

1. Go to the Administration workspace > Settings view.
2. Open **Provance Administration Settings**.
3. Go to the Agreement Settings section.
4. Enter a threshold value for each of the color indicators: red and yellow.

NOTE: *If you enter the same value for both the red and yellow indicators, only the red indicator will appear.*

5. Click **OK** to save your changes to the thresholds.

Currencies and exchange rates

Enter an exchange rate for each currency that needs to be converted to the base currency. In report calculations, currencies are always converted to the base currency, even if you have not entered an exchange rate. The default exchange rate of 1 is used when nothing has been entered. For example, the base currency is USD, the exchange rate for CAD is set at 0.97, and the GBP exchange rate is set at 1.4826. All financial values appearing in reports will be in USD. Any financial values entered as CAD will be multiplied by 0.97. Any financial values entered as GBP will be multiplied by 1.4826.

Visibility of currencies

Use the Visible column to choose the currencies that appear on selection menus and that can be chosen under the Base Currency option. You can limit the currency selections to those currencies that are applicable to your organization. If you have already entered values for any currency that is no longer visible, those values will remain in their old currency.

Base currency

A base currency is used as the currency displayed in all reports. It is useful when multiple currencies have been entered into your financial data. Regardless of what currencies have been entered, they will be converted to the base currency. For example, if your data uses all CA dollars (CAD), but the Base Currency is set for U.S. dollars (USD), then all CAD figures will be converted to USD in your reports. The conversion will be calculated based on the exchange rate set on the form. Enter in an exchange rate for every currency that you may be using in your data, in order for the reports to show accurate information.

By default, the base currency is U.S. dollars. You may change the base currency at any time.

Hardware asset settings

The Hardware Administration Settings form permits you to change the behavior of hardware asset creation with the following options:

- **Allow duplicate asset tags:** Set this option to permit the creation of computer assets with identical asset tag IDs.
- **Allow duplicate serial numbers:** Set this option to permit the creation of computer assets with identical serial numbers.

Software status thresholds

Both software assignment and licensing have a common threshold for showing their status. Licensing status indicators are used to show under and over licensing issues, as well as nearly under licensed software. Software assignment indicators show under and over assignment as well as *almost* under assigned issues. The default values given to the indicators support these states. Change the default values to suit your organization's interpretation of over and under licensing. The status indicators for licensing appear on forms, views and in reports. The status indicators for assignments, as described here, are only used on the Software Titles Tracked by Assignment report. For more details on these indicators see "Status indicators and what they mean" on page 7-10.

To change the thresholds for software licensing and assignment status indicators:

PREREQUISITE: You need to have Administrator privileges to change the thresholds.

1. Go to the Administration workspace > Settings view.
2. Open **Provance Administration Settings** to change the thresholds for the status indicators.
3. In the Software Status Thresholds section, enter a threshold value for each of the color indicators. For more details, see "Examples for licensing threshold" on page 3-6 and "Status indicators and what they mean" on page 7-10.

NOTES: *The licensing status is green, or acceptable, for any values outside the three states mentioned on the form. Negative values are ignored and treated as zero.*

4. Click **OK** to complete the threshold changes.

The threshold settings for reports, views and forms will reflect the new values. To immediately update one or more software titles with a new licensing status, click **Recalculate Software Title**.

Examples for licensing threshold

Let's say your organization has 100 licenses for Adobe Acrobat 4.0 (a software item). As an asset manager you need to know when Acrobat becomes under licensed, which for you occurs when 100 or more copies of Acrobat have been installed. You also need to know when Acrobat is almost under licensed so you can prepare for it by purchasing more or harvesting existing licenses. To you, 'almost under licensed' occurs when there are 75 or more copies of Acrobat 4.0 installed. Lastly, you need to know when Acrobat 4.0 is over licensed, which for you occurs when 5 or less copies of Acrobat are installed. All other conditions — above 5% and below 75% of licenses — would be considered acceptable.

In this example, the setting for under licensed would be as follows:

```
to show when there are insufficient licenses or assignments
available

Installed software items > = 100% of licenses or assignments
```

Which is in effect saying that Acrobat should be given a red status when it is under licensed or, to put it precisely, when there are 100 or more installed copies of Acrobat 4.0 on your network.

The yellow indicator has two possible states: over licensed and approaching under licensed. The setting for the color yellow as 'nearly under licensed', would be as follows:

```
to show when there is about to be a shortage of licenses or
assignments
```

```
Installed software items > = 75% of licenses or assignments
```

Which is in effect saying that Acrobat should be given a yellow status when it is nearly under licensed or, to put it precisely, when there are 75 or more installed copies of Acrobat 4.0 on your network. The yellow status stays into effect until it reaches the red status setting.

The second setting for the color yellow, as over licensed, would be as follows:

```
to show when there is a surplus of licenses or assignments
```

```
Installed software items < = 5% of licenses or assignments
```

Which is in effect saying that software titles should be given a yellow status when they are over licensed. In other words, it is over licensed when there are 5 or less copies of Acrobat 4.0 installed.

Workflow schedule

There are two possible workflow scheduling configurations that you can make changes to: Link Computer Assets to Windows Computers Automatically, and Calculate Software Licensing Position Automatically.

Link Computer Assets to Windows Computers Automatically

The purpose of the **Link Computer Assets to Windows Computers Automatically** workflow setting is to see all the incidents that have been opened for a computer asset. Unless you manually relate a computer asset to an incident, or create an incident from a computer asset, incidents are not visible directly from the asset. The workflow setting automatically establishes a relationship between a computer asset and an incident, through the CI linked to the asset. A relationship must already exist between the computer asset and the CI (from the computer asset's form). The incidents appear on the Related Items tab of the computer asset, under **Work items affecting this configuration item.** Incidents are not added to any of the computer asset's related CIs; only the computer asset benefits from the workflow.

The workflow runs whenever there are updates to existing computer assets and incidents, as well as when new assets or incidents are added.

While the primary purpose of this option is to relate incidents to computer assets, the workflow actually establishes a relationship for all types of work items opened for a computer asset. Therefore, if you open a change request, a problem and an activity work item for a CI, their related computer assets will have those work items added to the Related Items tab.

NOTES:

If you turn off the workflow you may still manually verify and create the link from a particular computer asset using the ***Create Link to Windows Computer*** *task. To create missing links from all computer assets, use the* ***Create Missing Computer Asset Links*** *task.*

A duplicate work item is made for the computer asset under the incident, so if you delete the computer asset the incident report will still contain the computer asset.

The ***Allow duplicate asset tags and serial numbers*** *settings will have an impact on the linking of a computer asset to a CI. If there are two assets with the same serial number and/or asset tag, then Provance IT Asset Management Standard will choose the first it encounters in its search (based on the rules described in* "Hardware asset and computer CI linking" on page 5-7*).*

There is a time delay from when you create or update (basically save an incident) and when the computer asset relationship is created. Older incidents are not related to the hardware asset after the option is enabled.

If the relationship between the hardware asset and the computer CI was created during an import (using Provance Data Management 2012 or CSV import), then the workflow will not include the relationship and you will not see incidents or other work items related to those computer assets. The workflow targets the relationship between the CI and the work item, not the relationship between the computer asset and the CI. The latter relationship is the one usually created during an import and would be overlooked by the workflow.

If you remove a CI from the computer asset, the work items on the asset remain. You must remove the work items manually. Because there could be multiple CIs linked to the asset, Provance IT Asset Management Standard does not maintain a history of which work items come from which CIs once they are added.

Calculate Software Licensing Position Automatically

By default the licensing calculation automatically calculates the software licensing position of all your software titles on a nightly basis. The data from

the calculation is saved, permitting you to access software licensing information for any point in time. You can change the time and day that the workflow runs or turn it off. However, if you turn off the workflow, or reduce its frequency, you will loose the ability to provide accurate point-in-time licensing information should you be audited.

Software titles whose Effective Licensing Position is Excluded would not be included in the calculation.

Building service and request offerings for a portal

Provance IT Asset Management Standard lets you contribute to an existing self-service portal. You can add both service offerings and request offerings to your portal. Provance IT Asset Management Standard allows you to create both hardware and software service and request offerings. The request offering task creates the service offering automatically if it does not already exist.

A service offering is a logical group of request offerings, e.g., the Access and Security service offering might contain request offerings for network access as well as specific application access. A Communication Devices service offering might contain a request offering for ordering a Blackberry Bold 9780. You can create a request offering for a hardware asset and a software title.

Templates are provided for both service offerings and request offerings. You cannot modify these templates, but you can create a copy of the template and modify it. If you do create your own template, ensure that you select the template when you create a new request offering.

Prerequisites:

- An existing self-service portal, either the out-of-the-box Microsoft System Center - Service Manager portal or a third-party portal
- Microsoft SharePoint. A SharePoint template for the portal provides you with navigation links, a header and a footer. Refer to the Deployment

Guide for System Center 2012 for more information on setting up a portal using SharePoint.

- In order to view the Service Catalog on the self-service portal, users must have been assigned a user role associated with a catalog group that contains catalog items. For more information, refer to the Administrator's Guide for System Center 2012.
- To create request offerings, a user should belong to the Service Manager Administrators role. If the user does not belong to the role, the request offering task automatically substitutes a Run As Account (Service Request Default Action Account). However, this Run As account must be configured with a user who has the Service Manager Administrators role beforehand. Refer to the Deployment Guide for instructions on configuring the Run As account.

Manual activities arising from these requests include:

- approving the request
- searching the existing inventory for assets or generating a new asset if one does not already exist
- searching for a suitable software asset or reassigning an existing one
- publishing the service offering and request offering so they are visible on the portal

Creating and publishing a request offering

A request offering can be created from either a hardware asset or a software title. When you create a request offering it has a status of draft. If you have a request offering with the same name, a suffix is added to the new request as a means of differentiating them.

1. Select a hardware catalog item or a software title.
2. Click **Create Request Offering**.
3. Go to the Library workspace and open Service Catalog > Request Offerings > Draft Request Offerings.
4. Review the request offering. You may wish to add an image, a description of the offering on the self-service portal, add or remove prompts for users, etc.
5. Click the **Publish** task.

6. Review and publish the service offering that was created with it as well. Unpublished service offerings are located in the Service Offerings > Draft Service Offerings view.

Managing a request from the self-service portal

When a request for a hardware asset or software title is received from the portal, a service request work item is created. Here is what you need to do with the request:

1. Approve it. Who performs the approval is up to you. The approval list can be set to leverage Service Manager functions, such as AD connector line manager information.
2. In the case of a hardware asset, search your inventory for a suitable asset or generate a new hardware asset.
3. In the case of a software asset, search for a suitable software title, reassign an existing one or generate a new software title. Assignment of the software title to the users specified on the request is performed automatically.

User affiliation

Affiliation is a relationship between a user and one or more of the following: a cost center, a location and an organization.

You do not need to create a relationship between a user and all three items—cost center, location and organization. You can choose which combination of relationships are most important to your organization.

Creating an affiliation

Create affiliations between cost centers, locations and organizations and one or more users from the Configuration Items workspace > Users view.

To create an affiliation:

1. Go to the Configuration Items workspace and click the Users folder.
2. Select one or more users in the list.
3. Click **Manage Affiliation**. The Manage Affiliation dialog opens.
4. Add a location, organization and/or a cost center to the user. If you have selected multiple users, they will all receive the same affiliation.

Configuration of lists

Any list on a Provance form, such as the Life Cycle Status, can be modified. New lists can be created with the Authoring Tool, but they would be Service Manager lists, not Provance Lists. Depending on the list you can modify the names of existing values, create new values, add children to values, create a description for the self service portal, and change the visibility of any list item with a selection box. As an example of a list item addition, under the computer type asset you could add desktop and laptop as new computer asset types.

All business objects are by default permitted to make use of list items. Select business objects individually if you do not wish them to use a list item.

Some lists cannot be modified because they contain values that Provance IT Asset Management Standard needs to control for a specific purpose. Some lists have values that cannot be modified.There are several reasons why a list item cannot be modified, such as its in a sealed management pack and marked as internal or that Provance has reserved the item for its own use.. Any customizations you make to lists are maintained when you upgrade.

Important considerations

When adding asset types that need to be saved in an unsealed management pack, the best practice is to save them all in the same custom management pack. You will be prompted when a type needs to be saved in an unsealed management pack.

Other considerations are based on the type as described in the following sections.

Computer assets

If you are creating additional hardware asset types, such as desktop and laptop entries, remember that some functionality is only available to assets of the **computer** class; for example:

- automatic linking of CIs to assets based on serial number, see "**Hardware asset and computer CI linking**" on page 5-7
- the calculation of software licensing because it looks for assets that are linked to Windows Computers with software items (installed software)

If these functions are critical to the proper management of the asset type, then create it under the computer class.

Life cycle status

Currently there is a workflow that ensures you are applying the correct life cycle status to an object. For example, you cannot install an asset that is disposed. This workflow will not recognize custom life cycle states or children added to existing states. If you create new life cycle states, then you may be permitting incorrect custom states to be applied to an asset.

Rule for creating ENUMs

When importing csv files into Service Manager for use with Provance IT Asset Management Standard, and adding a new value to a list, such as adding Tablet as a new computer asset type, the ENUM should be identical to that of the existing values.

Importing vs. entering data manually

You have the option of either importing your data into Provance IT Asset Management Standard or manually entering data. Data may be imported using Data Management Pack for 2012 or with the CSV import task in Service Manager. The Tasks pane contains manual create tasks for every form where data is required by Provance IT Asset Management Standard.

The asset management data that can be imported into the system can come from various sources, as the following examples show:

- legacy data from another system
- advanced shipping notifications
- purchase order and invoice information
- procurement or receiving systems

4 Creating and Managing Asset Management Agreements

Creating asset management agreements

Agreements are managed within Provance IT Asset Management Standard to provide visibility into contractual obligations that affect the business and the IT Asset Management practice. Specifically, they are used as follows:

- To help the service desk during resolution. Analysts can quickly assess whether or not an asset is covered by an agreement. Agreement activation and expiry dates are populated on your assets, with agreement status being indicated through large, colored blocks
- Prepare for negotiations with suppliers and vendors
- Maximize support and service level agreements

Not only does the direct relationship between your assets and agreements aid with contractual obligations, but it also simplifies the importing of hardware and software data. In the case of software data, the direct relationship is between your license agreements and software purchases.

Agreements should be created before assets, or at the very least simultaneously during an import, because they provide effective and expiry dates to the relationship between the asset and the agreement. The agreement also must exist before you can use the **Add to Agreement** task on an asset.

Creating and using hardware agreements

Lease agreement

Lease agreements are linked to the following hardware assets to help track the activation and expiry of your leased assets: computer and general.

When creating a lease agreement take note of the following guideline:

Display Name: Enter a name used to identify the agreement throughout Provance IT Asset Management Standard, especially in reports where missing display names means blank entries that are meaningless.

Viewing related hardware assets

You can see which hardware assets were leased under the agreement using the View Related Computer Assets task:

How to link the Asset	How to View Related Assets
1. Follow the instructions in "To add an agreement to a hardware asset:" on page 4-5. 2. The lease and the hardware asset are now related.	1. Go to Agreement Management > Lease Agreements > All Lease Agreements. 2. Select an agreement. 3. Click **View Related Computer Assets**.

Hardware maintenance agreement

The hardware maintenance agreement is intended to provide contractual information related to maintenance of your hardware assets. Use the maintenance agreement to sort OEM extended support, or in-house support from third-party maintenance agreements. Hardware maintenance agreements are related to most hardware assets such that they provide an at-a-glance status of the agreement from the asset form. Hardware assets that are related to the maintenance agreement include computer and general.

When creating a hardware maintenance agreement take note of the following guideline:

Display Name: Enter a name used to identify the agreement throughout Provance IT Asset Management Standard, especially in reports where missing display names means blank entries that are meaningless.

Viewing related computer assets

You can see which hardware assets were maintained under the agreement using the View Related Computer Assets task.

How to Link an Asset	How to View Related Assets
Follow the instructions in "To add an agreement to a hardware asset:" on page 4-5. The agreement and the hardware asset are now related.	1. Go to Agreement Management > Hardware Maintenance > All Hardware Maintenance Agreements. 2. Select an agreement. 3. Click **View Related Computer Assets**.

Warranty

Warranties are added to hardware assets to keep track of their warranty period. Service desk and Hardware Asset Managers can make use of the warranty information available at-a-glance on a hardware asset when they are related to one another. Hardware assets that are related to a warranty include computer and general.

When creating a warranty take note of the following:

Display Name: Enter a name used to identify the agreement throughout Provance IT Asset Management Standard, especially in reports where missing display names means blank entries that are meaningless.

Viewing related computer assets

You can see which hardware assets are maintained under the agreement using the View Related Computer Assets task.

How to Link an Asset	How to View Related Assets
Follow the instructions in "**To remove an agreement from a hardware asset:**" on page 4-5. The agreement and the hardware asset are now related.	1. Go to the Agreement Management > Warranty > All Warranty Agreements view. 2. Open an agreement. 3. Click the **View Related Computer Assets** task.

Associating agreements with hardware assets

Agreements can be associated with most hardware assets to provide additional visibility into the financial and contractual details relevant to a hardware asset. This includes a direct link from an asset to a warranty, an asset to a lease and an asset to a maintenance agreement, as well as to business contacts and contractual terms and conditions. With such a link, it is possible to view all of the assets related to the agreement. You can also edit the agreement directly from the asset. When an agreement and a hardware asset are linked, a colored banner in the asset indicates when the agreement expires. The color of the message indicates the expiry status of the agreement, see "**Understanding agreement expiration indicators**" on page 4-8.

Hardware assets that can be linked to agreements include: computer and general.

To add an agreement to a hardware asset:

1. Go to the IT Asset Management workspace and expand Hardware Asset Management and then choose one of the hardware asset classes, such as Computer.
2. Click the All <Hardware Assets> view, such as All Computer Assets.
3. Find the actual hardware asset and select it in the list.
4. In the Tasks pane, click **Add to Agreement**. The Add to Agreement wizard opens.
5. On the Select Agreement Type page, select the type of agreement that you would like to add the hardware asset to. You may choose one or more of the following: a Hardware Maintenance Agreement, a Lease or a Warranty.
6. Click **Next**. The Select Agreement page opens.
7. Click **Add** to find an agreement The Select Objects form opens. Use the Search Text field to refine the list of agreements when you cannot initially find the agreement.
8. Select an agreement and click **OK**.
9. If the date has not been set, click the date chooser in the Effective Date and the Expiration Date fields and select dates for them. The dates must be within the range that exists on the agreement.
10. Click **Finish** to complete the wizard. The Addition Complete page opens.
11. Click **Done** to close the wizard.

    When you open the hardware asset, the **Agreements** tab shows that the agreement is now linked.

Agreements can also be added from the Agreements tab on an asset.

To remove an agreement from a hardware asset:

1. Go to the IT Asset Management workspace and expand Hardware Asset Management and then choose one of the hardware asset classes, such as Computer.
2. Click the All <Hardware Assets> view, such as All Computer Assets.
3. Find the actual hardware asset and select it in the list.

4. In the Tasks pane, click **Remove Agreement**. The Select Agreement Type page opens.
5. Select the agreement that you would like to remove from the hardware asset and click **Next**. The Confirm Removal page opens.
6. Click **Finish** to confirm the removal of the agreement. The Removal Complete page opens.
7. Click **Done** to close the wizard.

Creating and using software agreements

Software agreements should be created before other software data because they provide key contractual information for your software assets, such as licensing details and support purchased. Because agreements are directly linked to purchases of software, it simplifies the importing of software data.

Software licensing agreement

Software licensing agreements are used to manage the software purchased under them. It is important to note that the relationship between agreements and software purchases is optional but it is still important. For example, when there are global agreements like Enterprise or Volume License agreements like open value, the relationship identifies which licenses were purchased under which agreement. The relationship also lets you reconcile and perform true-ups against agreements.

The relationship is defined on the agreement itself from the Financial tab. It is also possible to have a licensing agreement that includes support; they do not necessarily have to be exclusive of one another.

Creating a software licensing agreement

A software licensing agreement provides terms and conditions that describe how a software title can be used. Provance IT Asset Management Standard lets you store key information about a software licensing agreement so that you can keep track of the software you purchase under each agreement.

A licensing agreement can be linked to a software license purchase. You first create a software license purchase, see "Creating and updating software purchases" on page 6-15, then apply an agreement to it.

A software agreement can be created from the Software Purchase wizard or from the All Software Licensing Agreements view.

To create a license agreement:

1. Go to the IT Asset Management workspace and expand Agreement Management > Software Licensing > All Software Licensing Agreements view.
2. In the Tasks pane, click **Create Software Licensing Agreement**. The New Software Licensing Agreement form opens.
3. Complete the fields on the General tab.
4. Click **OK** to save the agreement.

Software support agreement

Software support agreements are intended for use with a publisher's product support plans (standard and extended support).

When creating a software support agreement take note of the following:

Display Name: Enter a name used to identify the agreement throughout Provance IT Asset Management Standard.

Creating and using user defined agreements

A user defined agreement allows you to manage an agreement that is outside the predefined types of agreements provided with Provance IT Asset Management Standard. For example, you may have several quotes for disposal from different vendors and you wish to have them visible to everyone who has an interest. Each quote can be created as a separate user defined agreement and associated with the disposal agreement. You can either associate the quotes from the disposal agreement or associate the disposal agreement from each quote.

In addition to other agreements, user defined agreements can be associated with any CI. For example, a loaner agreement and computer assets. Only a user defined agreement can be the parent of another user defined agreement. A user defined agreement can have more than one association with other agreement types.

Determining agreements coming up for renewal or expiring

Agreements are valid until their expiration date, which is used to indicate the agreement's status. An agreement’s status is visible on most hardware assets, in reports, and in agreement views.

Understanding agreement expiration indicators

Throughout Provance IT Asset Management Standard visual clues show the status of your agreements. These visual clues or indicators show that an agreement is going to expire in a certain period of time, or that it already has expired. These indicators appear on a hardware asset, when it is linked to an agreement, on the Agreement Summary report and on the Serialized Hardware Asset Details report. All types of agreements, both hardware and soft-

ware, have the same visual indicators. By default, the indicators are as follows:

- indicates the agreement has expired or is about to expire today.
- indicates the agreement expires 12 months from today.
- indicates that the agreement is valid because it expires in more than 12 months from today.

The thresholds for determining when these indicators come on can be changed from the Provance Administrative Settings (Administration workspace > Settings view). For more details, see "**Agreement settings**" on page 3-3.

Determining valid agreements

An agreement is considered valid if its status is set to Active.

To determine if a hardware maintenance agreement, lease, software licensing agreement, software support agreement, or a warranty is valid:

1. Go to the IT Asset Management workspace and expand Agreement Management.
2. Select the Active view for the type of agreement you wish to review: All Disposal Agreements, All Lease Agreements, All Software Licensing Agreements, All Software Support Agreements, All Hardware Maintenance Agreements or All Warranty Agreements.

   An Active status indicates a valid agreement.

Determining the assets associated with an agreement

To determine the assets associated with an agreement:

1. Go to the IT Asset Management workspace, expand Agreement Management and select an agreement view (disposal agreement, lease agreement, warranty agreement or hardware maintenance agreement).
2. Find the agreement in the view and select or open it.
3. In the Tasks pane, click **View Related Computer Assets**.

   The View Related Computer Assets task generates a view that displays all hardware assets associated with the selected agreement.

Determining agreements coming up for renewal or expiring

In order to prepare for contract negotiations you may wish to know if there are any hardware or software agreements that are coming up for renewal or about to expire. The following tools can be used to determine if an agreement is coming up for renewal or about to expire.

- **reports:** The **Hardware Asset Management Dashboard** shows hardware related agreements that are expired and about to expire. The **Agreement Summary** report shows all the agreements coming up for renewal.
- **views:** All views in the following folders show the expiration date: **Disposal Agreement, Lease Agreement, Hardware Maintenance Agreement, Software Licensing Agreement** and **Software Support Agreement**. You can sort these views by their expiration date to find agreements that are about to expire.
- **agreement:** All agreement forms have an Expiration Date field that indicates the status of the agreement.
- **hardware asset:** agreements associated with a hardware asset appear on the hardware asset form with a visual indicator and a message describing the expiration status of the agreement. For more details, see "Understanding agreement expiration indicators" on page 4-8.

5 Working with Hardware Assets

Introduction to hardware asset management

Hardware asset management has the following disciplines, each of which can be performed to certain degrees with Provance IT Asset Management Standard:

- Hardware Asset Life Cycle Management
- Resource Management
- Repair, Upgrade and Inventory Management
- Procurement Management

Consult the Hardware Asset Management Primer for more details about these disciplines.

Before you begin managing hardware assets

In order to be valid, hardware asset data needs to include financial, assignment and tracking information. Fundamentally assets cost money and it is from financial sources that we must start and end an asset's life. Hardware assets should be created from recognized financial data sources for accuracy and validation purposes.

Table 5-1 contains a summary of what you need to set up before you can perform hardware asset management.

TABLE 5-1. Setting up for hardware asset management

Step	Description
1. Create Organizations, Cost Centers, and Locations.	Although these can be added individually, and even reorganized subsequently, it is helpful to normalize and standardize them in advance.
2. Create Warranty, Hardware Maintenance, and Lease Agreements.	Although these can be added individually, and even reorganized subsequently, it is helpful to normalize and standardize them in advance.
3. Create a hardware catalog.	The hardware catalog provides model, type, manufacturer refresh cycle, and supplier information for hardware assets.
4. Create hardware assets.	If necessary, link each hardware asset to a CI—usually a Windows computer CI—through the serial number and/or asset tag.
5. Add agreements to the hardware assets.	Relate agreements to hardware assets so you can keep track of when an asset's agreement needs to be renewed.

TABLE 5-1. Setting up for hardware asset management (Continued)

Step	Description
6. Add owners, locations, and financial information.	Add this information to your assets so you can easily find the location, person responsible, and identify the cost center.
7. Assign software to your assets.	Assign software titles to the hardware asset, either from the hardware asset form or from the software title form. Assigning software titles to hardware assets has an affect on the calculation of your software licensing position (see "**Assignment and licensing status**" on page 7-3). It also helps you track hardware asset assigned software, non-discovered software, and high cost software.

Key hardware classes and relationships

Hardware asset management is performed through the following items:

- computer assets (desktops, laptops, virtual machines, etc.)
- general assets (desks, chairs, projectors, vehicles, etc.)
- serialized hardware catalog items (provides a model, a refresh cycle, and standard warranty and maintenance agreements)
- related agreements, such as lease, maintenance and warranty agreements
- configuration items (CIs)

Provance IT Asset Management Standard allows you to create relationships between these items, as explained in the following sections. Some of the benefits that derive from relating these items together include: providing hardware assets with serial number and asset tag data, identifying assets whose related CIs are no longer found on your network, identifying CIs that are not related to hardware assets, providing hardware assets with a standardized model, tracking agreements coming up for renewal, and providing asset information to the Service Desk.

Hardware assets, hardware catalog items and agreements all exist within Provance IT Asset Management Standard, while CIs are found on your network by Configuration Manager through a *discovery* process.

Hardware asset classes

A hardware asset is a device that can be managed using a process. We extend the definition to include hardware asset related inventory items like consumables, cables, and mice. In Provance IT Asset Management Standard hardware assets have been organized so that like assets are grouped together because they have common information, processes and tasks and to restrict the relationships each group can have. In fact, they are organized to facilitate your asset management processes and tasks.

Hardware asset classes are organized into a top-down structure, with the hardware base class at the top. The hardware base class therefore has common properties and relationships for all hardware classes under it. Next in line is the hardware asset standard class, which defines common procurement, disposal and barcode properties associated with purchased physical assets, like computers and general assets.

With this structure in place each hardware asset class can have its own set of life cycle states. Given the variety of processes that should be followed for different assets, the unique life cycles provide you with the ability to track each asset independently. You may also create your own life cycle states, see "**Configuration of lists**" on page 3-12.

As mentioned the different classes have unique relationships. Computer asset classes are linked to computer CIs and to software, while general asset classes are linked to neither. Their specific relationships are explained in the following sections.

Computer

The computer class of assets includes both physical servers and clients, such as laptops, desktops, and tablets. You may create your own computer assets in addition to those provided out of the box. The computer class is automatically linked to discovered Windows Computer CIs and obtains installed soft-

ware from them, see "**Hardware asset relationships**" on page 5-7 for more details.

Computer assets are available for assignment. You may assign software titles to computer assets so as to align them with software usage and entitlement rights. Software may also be tracked solely by its assignment if desirable, see "Managing software assets" on page 6-16.

General

The general asset class is intended for non-traditional IT assets that still require management, such as projectors, desks, vehicles, and medical equipment. You may create your own general assets in addition to those supplied out of the box. General assets, like computer assets, permit life cycle and assignment tracking and they may have agreements and warranties associated with them.

Unlike the computer asset, the general asset is not linked to a Windows Computer CI nor can it have installed software linked to it for the purposes of licensing.

Serialized Hardware catalog item class

A hardware catalog item provides standardized manufacturer, model, refresh cycle, supplier, and default warranty and hardware maintenance agreement information for your *serialized* hardware assets. Serialized assets are all the assets that are managed via instances, each instance being unique. Serialized assets are managed in phases. For more details about phases, see "**Hardware asset life cycles and phases**" on page 5-6.

The hardware catalog item class also provides an image and a cost that are automatically associated with a service catalog request offering. Add them to your hardware catalog items so as to give users better context on your self-serve portal. For more details about service request offerings, see "**Building service and request offerings for a portal**" on page 3-9.

Hardware asset life cycles and phases

Due to its unique processes and tasks, each hardware asset has its own life cycle states. In addition, life cycle states are grouped into phases. The phase helps restrict tasks and activities from operating against a set of assets, it reduces the scope on workflows and allows Provance IT Asset Management Standard to target views. Table 5-2 shows the life cycle states and their corresponding phases. It is worthwhile to note that only a handful of states are in the Active phase. This means that those states can be acted on specifically by the software licensing calculation. The calculation is limited to computers that are in an Active phase. If a computer is not in an Active phase, then its installed software is not included in the calculation. In the case of a computer asset, this means that if its life cycle state is one of the following, its software is included in the licensing calculation: received, discovered, installed and stored. For more details about the software licensing calculation, see "**How software licensing status is calculated**" on page 7-2.

TABLE 5-2. Life Cycle States and Phases

Computer Asset States	General Asset States	Phases
Requested	Requested	Procurement
Ordered	Ordered	
Shipped	Shipped	
Received	Received	Active
Discovered	In Use	
Installed	Stored	
Stored		
Retired	Retired	Inactive
Returned	Returned	Historical
Disposed	Disposed	

You can designate the phase of any custom life cycle states that you create. Phase is a display-only field on hardware asset forms.

Hardware asset relationships

Hardware assets have relationships with hardware catalog items (provides a model and a refresh cycle), related agreements, and configuration items (CIs).

Some of the benefits that derive from relating these items together include: providing hardware assets with serial number and asset tag data, identifying assets whose related CIs are no longer found on your network, identifying CIs that are not related to hardware assets, providing hardware assets with a standardized model, tracking agreements coming up for renewal, and providing asset information to the Service Desk. Some of the relationships are made in the background for you, while others should be set up so that you can take advantage of their benefits.

Hardware assets, hardware catalog items and agreements all exist within Provance IT Asset Management Standard, while the CIs are found on your network by Configuration Manager through a *discovery* process.

Hardware asset and computer CI linking

Hardware assets, namely the computer asset class, are usually linked to a discovered Windows computer CI and add information from the CI, such as the software installed on the CI. Without the link in place you cannot track the installed software and the usage of that software, nor can you see related incidents.

This link is usually established automatically, but sometimes it is necessary or desirable to create it manually. The link is established automatically through a workflow (see "**Workflow schedule**" on page 3-7). To establish the link from a single computer asset, use the **Create Link to Windows Computer** task, or from all computer assets use the **Create Missing Computer Asset Links** task. The link is also automatically established when assets are created (manually or through an import), providing the workflow can find matching serial numbers or asset tags.

A link that is created automatically is always based on a match of the Serial Number and/or Asset Tag fields between the CI and the asset. For example, if you create a computer asset item by importing a *.csv file based on invoice records, and the invoice information provides the serial numbers, the workflow matches the Serial Number field that Configuration Manager picks up

and places the CI into the hardware asset form, establishing a link. The same process applies to asset tags that are burned to the BIOS and can be discovered with System Center 2012 Configuration Manager. When you *manually* create the computer asset and enter the asset tag and/or serial number, the link to the corresponding CI is established. The link to the CI can only be established if there is a match. If a match cannot be found on the serial number or the asset tag, no link is created between them. A link is also created in the reverse direction, from a computer CI to the asset. When a new CI is added to Service Manager, or an existing CI is updated—either through the serial number or BIOS asset tag—a link is created to any matching computer assets. For more details about the logic behind the hardware asset and computer CI link, see "**Understanding the logic behind computer CI linking**" on page 5-8.

You need to reconcile any discrepancy between the assets you have purchased and the assets *not* discovered by System Center 2012 Configuration Manager. A link may not be created automatically if the asset is not connected to the network, is in storage or is out for repair.

Understanding the logic behind computer CI linking

A computer asset could be linked to a CI or a CI could be linked to the asset. The logic used to link them depends on the direction of the link.

The logic used to link a computer asset (without a link) to a Windows computer CI is as follows:

1. Search for a windows computer that has a matching serial number AND asset tag. Link the first unlinked physical windows computer. Virtual machines are ignored.
2. If a link to a physical windows computer was not found, search for any physical Windows computer that has a matching serial number. Use the same logic as step 1 when linking to a physical computer.
3. If a link to a physical windows computer was not found, search for any physical Windows computer that has a matching asset tag. Use the same logic as step 1 when linking to a physical computer.

The logic used to link a computer CI with an asset is as follows:

1. Search for any computer asset that has the same serial number and asset tag as the unlinked windows computer. For those that are found:
   - If the windows computer is a physical computer, link the first unlinked computer asset to the windows computer. Virtual machines are ignored.
2. If a link could not be established, search for any computer assets that have the same serial number as the windows computer. Use the same logic for physical windows computers as step 1.
3. If a link still could not be established, using the same logic for physical windows computers, search for any computer assets that have the same asset tag as the windows computer. Use the same logic for physical windows computers as step 1.

Hardware asset and agreement linking

Hardware assets can have different types of agreements associated with them. Some agreements exist for the duration of the asset's life cycle, while others only exist for a certain period of time. When a hardware asset is associated with an agreement, its form has multiple visual indicators showing the status of each type of agreement (expired or about to expire). In the case of a lease, the date the item was returned is also included on the hardware asset form. Associating assets with agreements also means you can view the assets that are related to a specific agreement. For example, while you have a hardware maintenance agreement open you can display all of the assets related to that agreement. For more details, see the specific agreement under "**Creating and using hardware agreements**" on page 4-2.

Here are the possible agreements that computer and general assets can have associated with them:

- Hardware Maintenance
- Lease
- Warranty

Assets may be linked to agreements directly from the asset form or when importing assets through Data Management Pack for 2012.

Hardware asset and software asset linking

The installed software titles appear on a computer asset's Software tab. Use the Software tab to see at a glance:

- what titles are installed
- what their licensing status is on the asset
- when the titles were last used on the asset
- who the title is assigned to

The installed software comes from the Windows computer CI, therefore the computer asset must be linked to a computer CI. The installed software is updated as the computer CI is updated. The last used date comes from the software usage connector, which needs to be set up first before you can obtain usage information, see "Tracking software usage data" on page 6-18.

Catalog item and hardware asset

A hardware catalog item provides standardized manufacturer, model, refresh cycle, supplier, and default warranty and hardware maintenance agreement information.

For example, a company has made a bulk purchase of ThinkPads, Model T510. This is a standard purchase for the company. A hardware catalog serialized item containing additional information related to the make and model (ThinkPad Model T510) of the laptop, as well as a link to the manufacturer Lenovo and preferred supplier, is created prior to the computer asset. Computer assets are then created, perhaps through a bulk import of your purchase data, and the links to their hardware catalog serialized items are manually established from the computer assets.

A refresh cycle is important when trying to limit exposure to an event, such as warranty expiration. For example, a three year refresh cycle for Lenovo ThinkPad T510 laptops means that those laptops, based on model, that were first in based on their received date, will be first out.

To create this relationship, add the model manually from the General tab of the asset form or automatically during an import. For more details about creating this relationship, see "**Creating a hardware asset**" on page 5-13.

Hardware asset and associates

Computer assets can be associated with other serialized assets. General assets can be associated with other serialized assets. Associate relationships can be used when relating a computer and its peripherals, the assets in a lab, or even assets that are assigned to a specific user. You may wish to associate a computer with its keyboard and mice or a standalone printer. You may easily see associated assets from the Associates tab on the asset, as opposed to the alternate method of relating them through the user form where you would open it separately and refer to the Related Items tab.

To add associated assets, add them manually to the Associates tab of the computer and general asset.

Hardware asset and assigned to

Hardware assets have an Assigned to person, drawn from Service Manager user CIs, that designates who is in possession of the asset, along with the person's location information.

To add an Assigned to, add the user manually to the General tab of the asset form, or automatically during an import.

Hardware asset and responsibility

Hardware assets can have multiple users who are responsible for the asset, drawn from Service Manager user CIs. The responsible user designates who is the ultimate point of contact for the asset. For example, this may be the person that the IT department needs to contact regarding a refresh program. The Assigned to user may not be concerned about a refresh program, but the user who is responsible for the asset would have an interest.

To add responsible users to an asset, add them manually to the General tab of the hardware asset form or automatically during an import.

Relating items to an asset (Related Items tab)

The following items can be related to an asset record: work item, knowledge article, file attachments and URLs. Establishing such links provides your assets with additional contextual information that can make it easier to manage them.

To add items to an asset, use the Related Items tab on a hardware asset form.

Creating a hardware catalog

A serialized hardware catalog provides a refresh cycle as well as standardized manufacturer, model and preferred supplier information for your organization. The creation of a complete hardware catalog is the first step to managing your hardware assets using Provance IT Asset Management Standard.

Creating a hardware catalog item

All hardware assets have a corresponding hardware catalog item. The catalog item should exist before the asset is created, as it provides additional details about the hardware asset. A hardware catalog item contains general information, links to related items in the Service Manager CMDB and a history of changes made to the item.

To manually create a hardware catalog item:

1. Go to the IT Asset Management workspace and expand Finance and Organization Management > Catalogs > Hardware.
2. In the Tasks pane, click **Create Hardware Catalog - Serialized**.
3. Complete the fields on the General tab and click **OK** to create the catalog item.

   Note: *Both an Image and a Cost are required if you wish to generate a service catalog request offering.*

Creating and editing a hardware asset

Hardware assets can be manually created or edited. Hardware assets can also be imported in bulk (using the import csv task in Service Manager or Data Management Pack for 2012). For more information about importing, refer to the Service Manager online help and the Provance IT Asset Management Standard Deployment Guide.

Creating a hardware asset

During asset creation, entering financial, organizational and ownership information benefits IT asset managers, service desk agents and other parties during the life cycle of the asset.

To create a single hardware asset:

1. Go to the IT Asset Management workspace and expand Hardware Asset Management > Computer > All Computer Assets or Hardware Asset Management > General > All General Assets.
2. In the Tasks pane, click **Create <Computer or General> Asset**. The New <Computer or General> Asset form opens.
3. Enter asset information on the General, Agreements, Financial and Associates tabs and click **OK** to save the asset item. Here are some guidelines for completing the form:

   Planned Refresh Date: The refresh date is calculated automatically from the received date and the duration. Set the duration in the hardware catalog item. If you subsequently modify the received date, the refresh date is not modified. Also, if you enter your own refresh date, the calculation is not performed.

   Duplicate asset tags and serial numbers can be entered, providing that an Administrator has enabled the options for entering them, see "Hardware asset settings" on page 3-5.

If an automatic link is not established between a hardware asset and a computer CI, **create the link manually**:

1. Go to the IT Asset Management workspace and expand Hardware Asset Management.
2. Select either Computer Assets or General Assets and click the All Computer Assets or All General Assets view.
3. Find the asset you wish to link to the CI and double-click it. The Hardware Asset form opens.
4. On the General tab, Type & Model area, click **Add** to find a Managed Computer (Discovered). The Select Objects form opens.
5. Find the corresponding CI using search criteria, or click Search without criteria to find all discovered CIs.
6. Select the CI and click **OK** to save the relationship between the asset item and the CI.
7. Click **OK** to save the hardware asset.

Editing a hardware asset

Hardware assets can be edited in singles or in multiples. When editing multiple hardware assets, you can only change the fields that are common between them; all other fields are unique to each asset.

To edit a hardware asset:

>> Select a single hardware asset and click **Edit**.

OR

>> CTRL+select multiple hardware assets and click **Edit Multiple**.

Processes for hardware asset management

By its very nature, hardware asset management is focused on processes. The recommended processes for hardware asset management are briefly summarized in this section, with references to more details on how to perform them using Provance IT Asset Management Standard.

Request for hardware

Provance IT Asset Management Standard is integrated with a self-service portal. Requests for hardware assets are submitted by users through the self-service portal. You can monitor requests that arrive through the Work Items > Service Request Fulfillment folder. For more information, see "**Building service and request offerings for a portal**" on page 3-9.

Procure

The procure process begins with the user request, a project request, or with inventory management, i.e., in the situation where you might always want to keep ten spares on hand. Create or import your purchase orders, see "**Creating a purchase order**" on page 2-6.

Search the hardware catalog for approved makes and models as well as approved vendors. Ensure that you update the hardware catalog and your agreements with the new procurement information. See "**Creating a hardware catalog item**" on page 5-12 and "**Creating and using hardware agreements**" on page 4-2.

Receive

A receive begins with the asset arriving at the loading dock or with an invoice received from the vendor. Create the invoice, see "**Invoices**" on page 2-7.

Use the hardware asset form to update the received date, supplier, planned refresh date, cost center, cost, and life cycle status. Update contractual information, such as lease agreement/schedule, if applicable, warranty agreement, hardware maintenance agreement, and user defined agreement, if applicable. See "**Creating and using hardware agreements**" on page 4-2.

Deploy

The deploy process could be the result of a request, an IMAC process, a refresh, or a repair return. Any IT asset that is in inventory and that is ready for deployment should have a life cycle status of Stored.

Update the hardware asset with the asset tag, validate the financial information (PO, invoice), and update the asset inventory (asset tag, life cycle status, location, organization, cost center and assigned to). See "**Editing a hardware asset**" on page 5-14.

Manage

Manage requests include those pertaining to a repair, a loan, a move, or some kind of change to the asset. Validate and update the hardware asset form with as much information as possible. See "**Editing a hardware asset**" on page 5-14.

Refresh

The refresh cycle begins with an IMAC request, a scheduled refresh or it can be ad hoc. See "" on page 5-18.

Retire/Harvest

Assets are retired through a scheduled activity, a threshold being exceeded, or it can be ad hoc. Assets that are still under warranty cannot be retired. See the life cycle task for "**Retire/Harvest**" on page 5-16.

Update the retired hardware assets together by performing an **Edit Multiple**. See "Editing a hardware asset" on page 5-14.

Dispose

Asset disposal may be triggered by a threshold, scheduled, or it can be ad hoc. When you wish to dispose of an asset, change its status to Disposed and enter the Disposal Date on the asset.

Return

Assets are returned at the end of a lease. To see which assets are associated with the lease, click **View Related Computer Assets** from the lease.

Retiring an asset

An asset is retired when it is being placed into storage, prior to disposal, or when it is at the end of its life cycle. You can retire multiple assets at the same time.

PREREQUISITE: The asset must have a status of installed, received or stored to be retired.

NOTES: *An asset cannot be retired if the status is shipped, disposed, ordered, requested, retired or returned.*

Installed licenses are maintained on the retired assets and retained in counts in all views and reports.

To retire an asset:

1. Go to the IT Asset Management workspace and expand Hardware Asset Management > Computer > All Computer Assets.
2. Select the asset or assets to retire and click **Retire**. The Retire form opens.
3. Enter an Assigned To, **Location**, **Cost Center**, and **Organization** for the retired asset should any of them require changing.
4. Click **OK** to complete the retire.

Finding assigned and installed software

Use the Software tab on a computer asset to see the software assigned to the asset and the software installed on the asset.

Prerequisite

The computer asset must be linked to a Windows computer CI before you can obtain information about the software installed on it. For more details, see "Hardware asset and computer CI linking" on page 5-7.

To find the assigned and installed software of an asset:

1. Go to the Hardware Asset Management > Computer > All Computer Assets view.
2. Open a computer asset in the list.
3. Select the Software tab.
4. Review the assigned and installed software for the asset.

6 Software Asset Management

Introduction to the types of software asset management

Software Asset Management has several disciplines that **Provance IT Asset Management Standard** supports:

- Software License Management
- Software Life Cycle Management

Software License Management (SLM) focuses on efficiently and effectively managing the balance between a company's liabilities and its entitlements. Provance IT Asset Management Standard is capable of determining your liabilities by counting installs derived from software installed on Windows computer CIs. Provance IT Asset Management Standard also determines your entitlements by counting your base licenses.

Software Life Cycle Management or version management involves managing the life cycle of associated software assets and the processes associated with identifying and retiring software versions. Provance IT Asset Management Standard assists with life cycle management of your software assets by allowing you to track Publisher life cycles and internal Deployment life cycles.

The goal is to help Asset Managers understand factors that may influence licensing decisions.

Before you begin creating and managing software assets, consult the Provance Primer for Software Asset Management. It will help you begin deploying software asset management using Provance IT Asset Management Standard and it will provide best practices associated with software asset management.

Software asset management processes

The management of a software asset begins with a request and ends with its retirement. These processes, and all those in between, are briefly described here as well as references to topics on how to perform them with Provance IT Asset Management Standard.

Request for software

Requests for software titles can be submitted by users through the self-service portal. You can monitor requests that arrive through the **Work Items > Service Request Fulfillment** folder. For more details about setting up service requests, see "**Building service and request offerings for a portal**" on page 3-9. Typically the next step is to determine if there is inventory to cover the request or whether you might need to procure licenses. One way to start the inventory search is to use the **Software Titles Tracked by Installation** view, which contains a list of the software in your organization along with its licensing status. Use this view to determine what might be available, then open a software title form to see the licensing on a more detailed level, i.e., on a version by version basis.

Procure

The procure process usually begins with a user request, a project request, or through regular inventory management. In the case of software licenses, inventory management is being able to identify how close you might be to your entitlement limits, or whether you might be able to leverage existing unused licenses and less costly upgrade licenses to cover additional requests. You need to validate the request, create a PO, then place the order. Update your software assets as much as possible.

Receive

Unlike hardware assets, software asset managers must carefully consider what software they need to track. Each software title that you track requires considerable effort. What you need to consider is the value you will obtain from it, usually expressed as a relationship between the cost of the software and the potential penalties for not being compliant.

To receive a software asset, ensure the title and version are defined, see "**Creating a software title**" on page 6-14. Have you captured the software's entitlement record? Once the software title and version are defined, map any discovered software items and add the purchases, see "**Creating software versions and mapping software items**" on page 6-14 and "**Creating and updating software purchases**" on page 6-16. If the agreements have not already been defined, create them and then add the agreements to the purchase.

Update the list of managed software titles and versions through the **Software Titles Tracked by Installation** view. Update the version mapping for discovered software items from the software title.

For software assets update the software purchase, and related agreements with the serial number, activation date and expiration date, quantity, financial information, PO number and date, invoice number and date, supplier, cost center, organization, location (where the associated material is located or its virtual location), contractual information, software licensing agreement, and software support agreement.

Deploy

You may be deploying the asset as a result of a request, an IMAC process, or a refresh. In many cases, deployment may happen outside the asset manager's control. It is important to determine in advance your policies and any reaction or measures you will take, such as for unauthorized user installs, attempts to automatically uninstall, or requiring justification from the user. Update the software title, the software purchase, and agreements with all pertinent information, such as location, cost center, organization, and agreement details.

Once the software is installed and detected by Configuration Manager, map the versions detected to a software title (use the software title form), see "**Creating software versions and mapping software items**" on page 6-14. Assigning software is one way to prioritize resources. As license management begins with assigned users or devices, assign or unassign a software title to a specific user or device, see "**Assigning software titles**" on page 6-17.

Manage

Manage requests include those pertaining to a move, some kind of change to the asset, or perhaps an upgrade to the version. As with deployment it is important to determine your policies in advance, so that you can manage various possibilities. For example, what transpires when the software is required by everyone, when the software is high in value, when the software is black listed, or when the software is part of an enterprise level agreement?

Validate the financial, contractual and other details of the asset after the change. Use the software title form to change these details. Use the **Assign** task to assign or unassign the software depending on the circumstances. Update the appropriate agreement and ensure it is associated with the software purchase.

Refresh

The refresh cycle begins with an IMAC request, a scheduled refresh or it can be ad hoc. When preparing for a refresh, review software version life cycles to determine where investments need to be made. Calculate the replacement cost and manage as a large change request. Open the software title form and

consult the Software Versions table to see if the version required has available licenses. Use both the Licensing Status and Remaining Usable columns to quickly see which is available and how many are remaining.

Prepare a list of software assets to deploy: select them in the **Software Titles Tracked by Installation** view and export them to csv (Excel), see "Exporting data" on page 1-13.

Retire/Harvest

Software assets are retired through a scheduled activity, a threshold being exceeded, a refresh program, or it can be done ad hoc. Assets that are still under warranty cannot be retired. Update the business information, such as location, organization and cost center of the asset on the software title form. Update financial and contractual information as well. Harvest any licenses from the retired software.

Key software components and relationships

The goal with Provance IT Asset Management Standard is to help asset managers understand their effective licensing position. Simply put, effective licensing position is the balance between entitlement and licensing requirements. Provance IT Asset Management Standard employs the following items to assist you with managing software assets:

- software titles
- software purchases
- software license and software support agreements
- software items

The first three items are Provance IT Asset Management Standard objects, while software items come from the System Center Configuration Manager connector.

Provance IT Asset Management Standard determines what has been installed through discovered installation data. Installation data is provided by creating a relationship between the Windows computer CI (created by the Configuration Manager connector), the software item (created by the Configuration Manager connector from Configuration Manager Asset Intelligence data), and the hardware asset, see Figure 6-1. Indirectly this creates a relationship between the hardware asset and a software title, see "**Hardware asset and computer CI linking**" on page 5-7. To create a more direct relationship between the software title and the hardware asset, you can assign the asset to the title. Assignment also brings with it additional benefits, see "**About assignment of software**" on page 6-10.

Provance IT Asset Management Standard determines what you are licensed for through your license purchases and your agreements. It is critical that you enter this information completely and accurately.

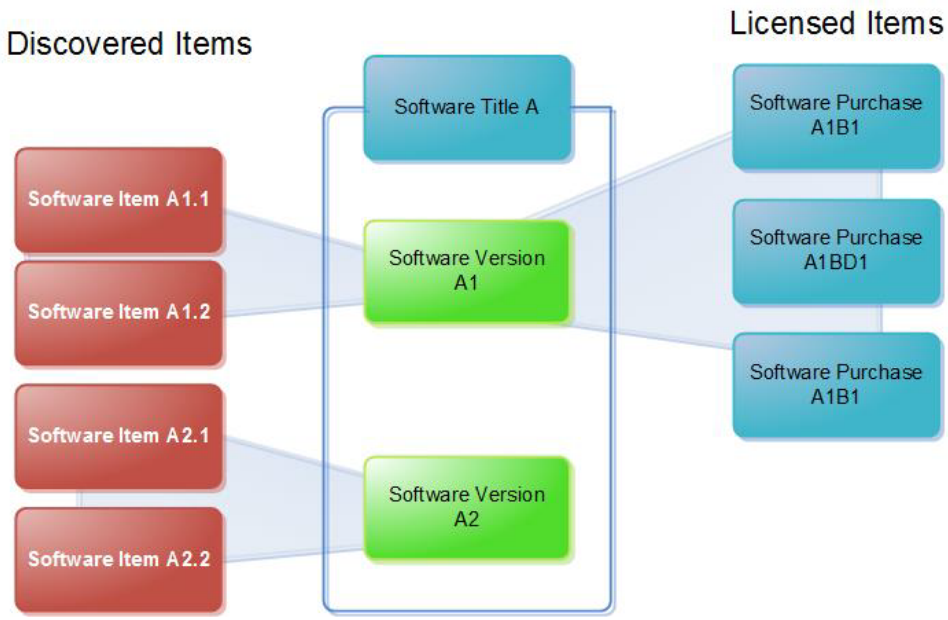


Figure 6-1 Software Title and its Relationships

Software Version

A software version, such as Visio 2010, is how a software title is licensed and sold. One or more software items that were discovered by System Center Configuration Manager are mapped to that version, enabling discovered items to be directly related to purchases. A software item represents a single discoverable version of a software application, so linking several software items into one version helps simplify software asset management. This link can be established while creating the software title, because one or more versions are rolled up into the title.

The software version essentially becomes a centerpiece that ties installations, entitlement and software usage data together. Your licensing position is determined by installations and entitlement and calculated for each soft-

ware version since the version is what is installed and licensed. Because software versions are rolled up into a software title you can manage your licensing at a macro level (using the title) but always have access to the details at the micro level (the version).

Some software applications have no installation artifacts or binaries. With these applications your licensing position is based on comparing assignments against entitlement, see "**Assignment and licensing status**" on page 7-3.

The collection of software usage data is optional. Configuration Manager's software metering can be related to software versions. Metering rules and associated usage data are brought over to Service Manager via a Provance usage connector. The data represents a monthly summary for each software executable installed on a computer which is being monitored. When Provance IT Asset Management Standard calculates the software usage it is based on the usage of the versions installed. Usage data becomes a decision making aid to help asset managers determine possible harvesting candidates. Software usage must be set up first in order to obtain its data, see "**Tracking software usage data**" on page 6-19.Use the version form, accessible from a software title, to relate software items to a version, see "**Creating software versions and mapping software items**" on page 6-14. If you wish to specify rules for automatic mapping of items to a version, use the **Manage Mapping Rules** task on the version.

Software title

A software title is a software application you wish to manage with Provance IT Asset Management Standard. A software title is intended as a container for related software versions and license purchases. Both versions and purchases are included in and managed from a software title.

The licensing position reported on a title is therefore a representation of its version licensing position. For more information about the licensing status values shown for each version on a title, see "**Interpreting licensing values**" on page 7-7.

To summarize, a software title has a relationship with the following items: one or more versions and indirectly to one or more software purchases, see Figure 6-1.

Example of software versions

The software items MS Office Enterprise 12.0.1.1000 and MS Office Enterprise 12.0.1.2000 can both be related to a single version of 2007. The version is then related to a title, which can include the edition (i.e., Office Enterprise). You can easily manage multiple versions together by relating them in this manner. The Software Items field on the version form shows the software items related to that version. It is also possible to see the hardware assets related to each version, see "**Viewing related hardware assets**" on page 6-23.

When you have related several software items to a version, then those items are considered as one install, should they appear together on the same windows computer CI. In the previous example, if both items 12.0.1.100 and 12.0.1.2000 are installed on a computer, MS Office Enterprise version 2007 would only show 1 install against it for that computer. This behavior permits administrators to map any or all discovered software items with the same version, without counting it as multiple installs.

Software purchases

A software purchase is used to purchase a license. Each time you make a purchase, initiate the software purchase wizard. If you bought three times in one month, you would have three separate purchases, linking to potentially three separate financial transactions (purchase orders and invoices). Purchases are performed from the software title using the **Add Software Purchase** task. By adding a purchase to a title you are relating the title and version with the licensing information.

The software purchase wizard allows you to define in detail the license package, the type of license and its limitations. For instance you can set the licensing unit and how many units—users, devices, CPUs or processors—this license can cover. The software purchase also defines the downgrade and upgrade rights provided by the license. Cross product version rights are not supported by Provance IT Asset Management Standard**.**

You can view and edit all of the software purchases associated with a software title from the title using the **Manage Related Software Purchases** task.

Provance IT Asset Management Standard calculates your total entitlements for each software title and summarizes them in the **Software Titles Tracked by Installation** view, Licensing Status and Entitlements columns, or the **Software Titles Tracked by Assignment** view.

Note: *Purchases are not required for shareware or freeware applications.*

About assignment of software

Software titles can be assigned to users or computer assets, thereby prioritizing them. This means the first pass at calculating your licensing position *begins* with titles assigned to users and computer assets, see "Assignment and licensing status" on page 7-3.

In the absence of an installation artifact for titles that are tracked by assignment, their assignment is compared to entitlement.

You may make assignments from the software title. As well, you can view current software assignments from the title. To view assignments, proceed to the software title views and use the **View Assignments** task.

Software agreement

There are two types of software agreements: Software Licensing Agreement and Software Support Agreement. A Software Licensing Agreement describes the terms and conditions associated with a license purchase. Some license agreements are implied and some are explicit. For example, a retail agreement is implied, while an Enterprise agreement is a signed agreement. A Software Support Agreement describes the terms and conditions of the support you purchased for a software license.

All agreements can have effective start dates and expiration dates. These dates are used to help identify when an agreement is going to expire. For more details, see "**Understanding agreement expiration indicators**" on page 4-8.

Software agreements can be given a cost center, a location, an organization, and a supplier. Use them to relate agreements to a purchasing group within your organization.

For more details about these agreements, see "**Software licensing agreement**" on page 4-6 and "**Software support agreement**" on page 4-7.

Relationships

This section describes all of the relationships among software assets.

Version to software item

Every version is related to one or more software items, which are discovered instances of your installed applications. Software items are discovered from Windows computer CIs, which are also linked to your hardware assets (see "**Hardware asset and computer CI linking**" on page 5-7). In order for Provance IT Asset Management Standard to track your installations and compare them against your licenses, you must map versions to software items.

This mapping is performed on the version form, which itself is launched from a software title.

Software title to version

Versions are consolidated into a software title to simplify management of your software. For instance, the software title for Visio could have versions 2010, 2013 and 2014 consolidated into it. This makes it easier to manage Visio as a single entity. Since your software licensing position is reported at the version level, the software title becomes a representation of the licensing for all of its versions. Relating versions to a title ensures that you can consistently and easily manage them through the title.

Software purchase to agreement

The software purchase is related to a software licensing agreement, a software support agreement, or both. You are likely purchasing a license but the purchase may also include support for the software. Relate the agreements to the purchase to ensure that any specific coverage requirements in the agreement are associated with the license and so you can easily perform a true-up. Having agreements related to purchases also simplifies the importing of data.

Relate the agreement to the purchase through the software purchase wizard.

Software title to purchases

Software purchases are added to software titles for the purposes of providing the title with its licensing details. Add a purchase using the **Add Software Purchase** task on the software title.

Software title to hardware asset or user

A hardware asset or user is assigned to a software title for the purposes of reserving that title for a particular person or asset. You may do so because the licensing coverage for the title has a user or device limitation on it. Assign a title to a user or hardware asset using the **Assign** task on the software title.

Before you begin managing software assets

Table 6-1 contains a summary of how to prepare your data so you can perform software asset management. Ensure that you have created hardware assets first, and linked them to CIs, see "**Before you begin managing hardware assets**" on page 5-2. Refer to the Software Asset Primer for more details and best practices on software asset management with Provance IT Asset Management Standard.

TABLE 6-1. Preparing for software asset management: a summary

Step	Description
1. Create versions and titles	The software title is created as a container for versions and purchases, but versions are where software usage and licensing are calculated. See "**Creating a software title**" on page 6-14 and "**Assigning software titles**" on page 6-17.
2. Map installed software to versions and titles	You will need to map the software items discovered by Configuration Manager to versions and their software titles. See "**Creating software versions and mapping software items**" on page 6-14.
3. Create software purchases	Software purchases are used to purchase softwarelicenses. Each purchase includes a serial number, activation and expiration dates, as well as software agreements. Add purchases from a software title. See "**Creating and updating software purchases**" on page 6-16
4. Create the software agreements	Optional. As part of adding a software purchase an agreement can also be created. An agreement is associated with a particular purchase.

Creating key software components

Creating software versions and mapping software items

A software version is created from a software title, since it is associated with the title. Create a version from the **Software Versions and Their Status** section on the title's form. The most important aspect of creating a version is mapping software items to it, see "Software Version" on page 6-7. When you map a software item to a version you will be asked to enter a reporting ID. The reporting ID is used to count installs and segment the usage data specific to a software item.

To create a version and map software items to it:

1. Go to the IT Asset Management workspace and expand Software Asset Management > Software Titles Tracked by Installation.
2. Open a software title in the list and go to the **Software Versions and Their Status** section.
3. Click **Create** to create a new version. The software version form opens.
4. In the Software Items table click **Add** to map a software item with the version. Map any number of software items to the version as long as they are related to it.

   While mapping you may create rules that can be reused over and over again to find software items for this version. Create them while adding a software item to a version. Manage rules later from the version through the **Manage Mapping Rules** task.

Creating a software title

A software title is used to track and manage versions and license purchases. It may be created independently from the **Software Titles Tracked by Installation** or **Software Titles Tracked by Assignment** views. A title may also be created during an import of vendor data, for example. During asset creation, enter as much information about the software title itself, including the publisher, the status, approval status, the version, and the

assignment. Also ensure that you add a software purchase to the title, since it contains important details for calculating licensing.

Take note of the following important fields on the form:

Field	Description
Approval Status	Records whether the title is to be white listed (approved) or blacklisted (not approved).
Effective Licensing Position	Select how this title and its versions should be considered by the licensing calculation. For more details on its values, see "Defining the Effective Licensing Position" on page 7-2.
Software Versions	Add software versions encompassed by the title and their associated software items. Including versions on a software title is critical to accurately calculating your licensing status.
Estimated Cost	Enter the cost of the software title, which should probably reflect the latest version associated with it. The Estimated Cost is used as the value on the self-service portal.
Image	Select an image for the software. The image is used on the self-service portal to give users an accurate indication of what they are choosing.

Creating and updating software purchases

A software purchase represents the purchase of a software license. It is important to create a software purchase since it contains information that affects the accurate calculation of your licensing position. After you create or update software titles, you should record your software purchases through the **Add Software Purchase** task. Use the **Manage Related Software Purchases** task to edit the purchases associated with a title after they have been created. Both tasks are available on a software title.

NOTE: *Versions must be created before you can add a software purchase.*

Take note of the following important fields on the Add Software Purchase wizard:

Field	Description
Display Name	Enter a name for the license, its part number or its serial number, whichever best describes the license.
Licenses in a Pack	Enter the number of licenses in the licensing package. If you are only purchasing one license then enter one.
Number of Packs Purchased	Enter the number of license packs that you are purchasing.
Licensing Model	Select the licensing model. Perpetual licenses have an activation date but no expiry date. Subscription licenses have both an activation and expiry date. The licensing calculation recognizes both types and ignores licenses that have expired or that are not active yet.
Activation Date	Enter the date that the license takes effect.
Expiration Date	Enter the date that the license expires.
License Type	Select the type of license—base or upgrade. The licensing calculation needs to know whether the license is a base or if it can only be used to upgrade. In order for the licensing calculation to apply an upgrade it also needs a base license, so distinguishing them is thus critical for accuracy.
Licensing Unit	Every license has a requirement that it imposes on you, such as being limited to installation on three devices. The Licensing Unit describes what the license is measuring against.
Number of Units Covered	Enter the maximum number of units that you are licensed for, e.g., 10 devices or 12 CPUs.

Field	Description
Minimum Number of Units	If the license has a minimum requirement for the number of units that must be licensed, enter it here.
Select the Software Version	Choose the software version that the license applies to.
Downgrade the Version to	Add all the version rights granted to you by the license, such as downgrade to version 2010 of Word. These rights are taken into account by the licensing calculation.
Agreements	Add the licensing and support agreements.

Managing software assets

Assigning software titles

Software titles are assigned using the **Assign** task, while assignments are managed using the **Manage Assignments** task.

To assign a software title to a user or hardware asset:

1. Go to the IT Asset Management workspace and expand Software Asset Management > Software Titles Tracked by Installation view or Software Titles Tracked by Assignment view.
2. Select a software title.
3. In the Tasks pane, click **Assign**. The Add Software Assignment wizard opens.
4. Select either hardware asset or user as the item that you would like to assign the title to and click **Next**. The Assignment Target page opens.
5. Complete the Assigned to and Quantity fields on the page and click **Next**. The Assignment Confirmation page opens.
6. Click **Finish** to save the assignment.

Managing assignment

A software title can be assigned to a user or a hardware asset. For more details on assignment, see "About assignment of software" on page 6-10.

To manage the assets assigned to a software title:

1. Go to the IT Asset Management workspace and expand Software Asset Management view.
2. Open a software title in either the Software Titles Tracked by Installation or Software Titles Tracked by Assignment view.
3. In the Tasks pane, click **Manage Assignments**. The Manage Assignments form opens with a list of assignments for the title.

Viewing a list of unapproved software titles

You can quickly find unapproved software titles that are installed, as well as their installed counts. This information allows you to enforce corporate policy regarding the use of approved software. You can also determine who has the unapproved software and where the software is installed.

To view unapproved software titles:

1. Go to the IT Asset Management workspace and expand Software Asset Management > Software Titles Tracked by Installation view or Software Titles Tracked by Assignment view.
2. Sort the view by the Approval Status column. Approval status is either Approved or Not Approved, providing you have entered or imported this data.
3. Open a software title that is not approved.
4. In the Tasks pane, click **View Related Hardware Asset**.
5. Go to the Location and Assigned To columns to see who the asset is assigned to and where it is located.

   If a computer asset is not found, the title was not linked to a computer asset through a CI, see "Hardware asset and computer CI linking" on page 5-7.

Viewing the software installed on an asset

For any given computer asset you can determine:

- what software is installed on it
- what software is assigned to it

To determine the installed and assigned software of a computer asset:

1. Go to the IT Asset Management workspace and expand Hardware Asset Management > Computer > All Computer Assets view.
2. Select a computer asset in the list and open it.
3. Click the Software tab. The Software tab contains a list of the software assigned to the asset and installed on the asset.

Tracking software usage data

An important factor in software asset management is developing an understanding for what is being used and by whom. With Provance IT Asset Management Standard you can track licensed, assigned and installed software. But just because the software is installed, does not guarantee that it is being used. How should you handle the licensing of installed but unused software?

First you need to track software usage to ensure that software is required by individuals. Knowing what is required and what is not required, because it is not being used, provides you with the opportunity to save licenses and therefore money. Putting that knowledge into practice you would determine those individuals or servers where software is not actively being used and uninstall software from them.

Usage tracking can also be considered a planning tool that helps you balance capacity with demand, and also identify opportunities where different licensing configurations could save money or facilitate sharing.

Another opportunity to save money is related to usage and version upgrades. In most cases upgrades cost money. But even if a company is over licensed on base licenses, there is an opportunity to save money by upgrading only the required number based upon usage.

This type of management requires more automation and attention and so it does not make sense for all software products. However, as a general principle and a pre-audit activity, adding usage allows companies to verify that every installation is needed.

Example

Consider Microsoft's Visio application as an example. Visio is not included in the Microsoft Office Standard Edition and can be licensed either separately, or as part of other Microsoft Office packages. If only a segment of the users need Visio, then the business decision would be to purchase individual licenses. Tracking the usage of Visio means you can manage the licenses more effectively and potentially save money. Individuals who have the software installed, but never use it, may be asked to uninstall it so that licenses are freed up for others to use. Tracking usage of a specific title prevents you from purchasing more licenses than are actually required.

How to set up software usage

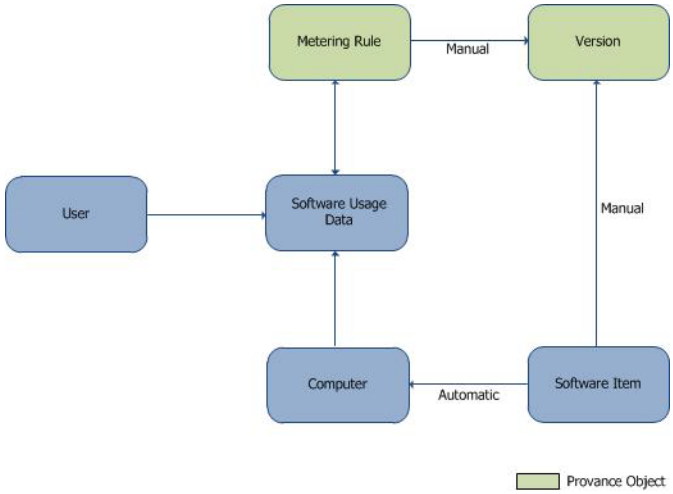
Ensure that you have created the connector to collect software usage data during installation. It can only be done through the Setup.exe file used to install Provance IT Asset Management Standard; the connector cannot be created after installation. Refer to the Deployment Guide for more details about installation.

With the connector in place, map the software usage data (in the form of software metering rules) to software versions. See "**Mapping usage data to software versions**" on page 6-22.

Important considerations

There are several links, some manual and some automatic, that must be in place before usage data is visible in Provance IT Asset Management Standard. If any of these links are absent, usage data in the form of metering rules will not be visible. The links, shown on the following figure, are as follows:

- Each software metering rule (imported from System Center 2012 Configuration Manager) should be linked to a version (manual).
- That **same** version should be linked to a software item (manual) that is installed on the Windows computer discovered by System Center 2012 Configuration Manager (automatic).
- Usage data must have been collected for the rule on the same windows computer (automatic).



Mapping usage data to software versions

Installed data gathered by Provance IT Asset Management Standard is based upon software items and their versions, while usage rules identify executables. Each usage or metering rule therefore needs to be associated with one or more versions. The versions can come from multiple software titles as well. For instance, if you wish to associate both Visual Studio Professional and Visio Studio Ultimate Editions with the same executable, then you could map them both (and their versions) to the same rule. Mapping a metering rule to a version indicates that whenever the executable has "usage" associated with it, then the version or versions of the software are considered to have been used. Only when rules are mapped can you see software usage data on reports, forms and views.

Use the Software Metering Rules - Mapped and Unmapped views to organize the rules that come from Configuration Manager and map them to software versions. The rules that appear in these views are dependent on the items you chose to include when you set up the connector to Configuration Manager. Both views are found under Finance and Organization Management > Catalogs > Software > Configuration Catalog > Definitions.The **Software Metering Rules - Unmapped** view only displays those software metering rules that have not yet been mapped to a software version. The **Software Metering Rules - Mapped** view only displays those software metering rules that have been mapped to one or more software versions. Either view can be used to map versions to rules, but if you have not mapped any rules before, start with the Unmapped view.

Certain links must be in place before you can see usage data in views and reports. For more details, see "**Important considerations**" on page 6-21.

To map rules to versions:

1. Go to the Finance and Organization Management > Catalogs > Software > Configuration Catalog > Definitions > Software Metering Rules - Unmapped view.
2. Select a rule based on the product that you wish to obtain usage on.
3. Double click **the metering rule**. The Metering Rule Properties form opens.
4. In the Mapped Software Versions section, click **Add**. The Select Objects dialog opens.

5. Determine which software titles and versions you wish to map to this rule (to the executable shown on the form) .
6. Click **OK**.
7. Click **OK** to close and save the Metering Rule Properties.

   The metering rule automatically moves to the Software Metering Rules - Mapped view.

Managing related software purchases

You can view and edit all the software license purchases that were added to a title from a software title. Click the **Manage Related Software Purchases** task on the software title.

Viewing related hardware assets

In terms of software, there are two places where you can view related hardware assets: from the software title and from the version. In both cases there must be a link in place between the hardware asset and its related computer CI as described in the following.

To view related hardware assets from the software title:

How to Link the Asset	How to View Related Assets
Ensure that there is a link between the computer asset and a computer CI. This is usually established automatically through a matching serial number, but if you need to establish it manually see "Creating a hardware asset" on page 5-13. The computer CI contains a list of the installed software items based on the discovery process. Ensure that the software items have been mapped to software titles. See "Creating software versions and mapping software items" on page 6-14. The software title and the computer asset are now related.	**1.** Go to IT Asset Management > Software Asset Management > Software Titles Tracked by Installation view or Software Titles Tracked by Assignment view. **2.** Select a software title. **3.** Click **View Related Hardware Assets**.

To view related hardware assets from a version:

How to Link the Asset	How to View Related Assets
Ensure that there is a link between the computer asset and a computer CI. This is usually established automatically through a matching serial number, but if you need to establish it manually see "Creating a hardware asset" on page 5-13. The computer CI contains a list of the installed software items based on the discovery process. Ensure that the software items have been mapped to software versions. Go to the software title and open the software version form. Add one or more software items to the version. The software version and the computer asset are now related.	**1.** Go to IT Asset Management > Software Asset Management > Software Titles Tracked by Installation view or Software Titles Tracked by Assignment view. **2.** Select a software title. **3.** Open a software version. **4.** Click **View Related Hardware Assets**.

7 Performing Software License Management

Software license models

License models are used to help identify and document how a license is to be used. The license model appears on the software purchase. Provance IT Asset Management Standard supports the following software license models:

TABLE 7-1. Software License Models

License Model	Description
Perpetual	If your license is perpetual, the licensiing calculation will recognize its activation date but it will not have an expiry date. Best fit will expect the license to be valid indefinitely.
Subscription	If your license is subscription based, the licensing calculation will recognize both an activation and expiration date. While processing your licensing position, the license will at some point expire and no longer be considered valid,.

Defining the Effective Licensing Position

Effective Licensing Position on a software title defines how the license calculation processes a particular title. It has the following options:

Option	Description
Exclude	No processing by the licensing calculation. The title will not be included in any licensing position calculation or in any counts.
Assignment Only Calculation	Tracks the title's assignments, without counting installations or licenses, see "**Assignment and licensing status**" on page 7-3.
Installation and Assignment Calculation	Counts assignments and installations, but does not expect licenses. Use this option for blacklisted products, freeware/shareware or products that only have license coverage through an agreement.
Basic Entitlement Management	Calculates your licensing position based on your entitlements and your installations on a version by version basis. It compares installed versions with licensed versions (entitled versions) and determines what is required to satisfy your installations. The licensing calculation takes your entitled base and upgrade licenses for each version of a software title and distributes them across the installations for that version, see "**Basic entitlement management uses the following process:**" on page 7-6.

How software licensing status is calculated

Best fit is the calculation used to determine your licensing status. It employs several features that increase the accuracy of each software title's licensing status. Its method of processing your titles and versions is influenced by the

Effective Licensing Position option. Here are some of the things that best fit can do based on the Effective Licensing Position option:

- Ensure that all versions and version rights are taken into account.They are defined as either a base license with the ability to downgrade to another version, or an upgrade license with the ability to upgrade or downgrade to another version.
- Tailor its calculation to match assignments to installations.

Items influencing licensing

The following items influence the calculation of your licensing position:

- **Base licenses:** Best fit determines your entitlement by adding up all your base licenses.
- **Life cycle phase:** Computerassets in an active life cycle phase are the only assets best fit includes in its calculation.
- Upgrade licenses
- **Assignment:** Assigned hardware assets and users are matched to installs as opposed to licenses and installs, see "**Assignment and licensing status**" on page 7-3.
- **Effective Licensing Position:** Effective Licensing Position indicates what level of best fit processing is to be performed against a particular product, see "**Defining the Effective Licensing Position**" on page 7-2.
- **Licensing Unit:** If the license is user, device or processor based, then best fit adjusts its calculation accordingly, see "**User, device and processor base licensing**" on page 7-4. Set the licensing unit on the software purchase.

Assignment and licensing status

Assignment can play a role in license calculation as follows:

1. Whereas licensing status is normally a comparison of installed software versus available licenses, it can be changed to **assigned** software versus available licenses. Switching the focus of your licensing position is useful when you have a CAL (Client Access License), where users have no installed software. When you set the Effective Licensing Position option for

this, you should execute the **Recalculate Software Title** task. Titles that are tracked by assignment show up in the **Software Titles Tracked by Assignment** view. (Effective Licensing Position: Assignment Only)

User, device and processor base licensing

Best fit will adjust its calculation to consider a licensing limitation, such as five users or 10 processors where the software is installed. It can accommodate user, device, CPU and processor limitations. Set the licensing limitation on the software purchase, Licensing Unit field.

Understanding entitlement calculation

With the Basic Entitlement Management option set, the best fit calculation compares installed versions with licensed versions (entitled versions) and determines what is required to satisfy your installations. Version rights are integral to the calculation and must be entered accurately.

Licenses and version rights

Versions are connected to installations through software items. In System Center 2012 Configuration Manager, a software item represents a discovered version of installed software. In Provance IT Asset Management Standard, installations are mapped to versions, where a software item is mapped to a software version, see "Software Version" on page 6-7 and "Creating software versions and mapping software items" on page 6-14.

Software purchases enable you to record the purchase of a SKU, the license with its details, and the version rights associated with it.

Software purchases can have activation and expiration dates. Licenses can therefore expire, as in the case of subscription-based licenses. While all licenses remain within the system for audit purposes, licenses will be excluded if the activation and/or expiration dates make them ineligible to be used towards your entitlement.

Licensing status is derived from versions

While licensing status is ultimately calculated for a software title, it is in effect a roll-up of a version by version calculation. In other words, the licensing status for each software version is calculated first and then all the versions are used to calculate the licensing status of the software title. If all software versions are green, the title is green. If any software version is red, then the software title is red. If any software version is yellow, then the title is yellow. For more details about license status indicators, see "**Status indicators and what they mean**" on page 7-10.

The licensing status reported by Provance IT Asset Management Standard is not intended as a legally supported measurement of your position, but rather an **indicator** of your licensing status. You should carefully review all of the values presented on the software title as part of the best fit calculation. To help you better understand the values presented, review the explanation given for them under "**Interpreting licensing values**" on page 7-7.

The rules best fit follows

In order to understand how the best fit calculation behaves, here is a summary of the rules that it follows:

- Each user or computer asset must have a base license.
- A license can only be used once.
- When you have related several software items to a version, then those items are considered as one install, should they appear together on the same windows computer CI. For more details, see "**Example of software versions**" on page 6-9.

Best fit, step by step operation

The best fit calculation determines the licensing path of titles based on your entitlements and your installations when the Effective Licensing Position option is set to an entitlement method.

Basic entitlement management uses the following process:

1. On a title and version basis it determines the pool of base licenses available (i.e., those you are entitled to, excluding those that have expired). In Figure 7-1 there are eight base licenses for software version A1. This is calculated from the license purchase which designates a license as a base or an upgrade. A version is associated with the base license. So you are entitled to have X number of base licenses of a particular version. Excluded from your base licenses are those that have expired (based on their start and end dates).
2. It determines the pool of installs for each title and its versions. In Figure 7-1 there are 10 installs for software version 1. Provance uses the connector to System Center 2012 Configuration Manager to determine what is installed. Removed from the installed list are those software items that have been installed on a hardware asset whose phase is not Active, see "**Hardware asset life cycles and phases**" on page 5-6.
3. During best fit's first pass for a particular title and its versions, it attempts to cover all the installs with the base licenses found. In Figure 7-1 the eight base licenses are used to cover off eight of the 10 installs for software version A1.
4. During its second pass, best fit determines if there are any versions for a title that have not been covered in step 3. It looks for an upgrade license or a base with a downgrade license. In Figure 7-1 there is one upgrade license available for the installs. Best fit will not go beyond looking for a matching base license or a single upgrade/downgrade path. It will not combine multiple upgrades and downgrades in a path to find a matching license. This means that in Figure 7-1 there is one install for software version A1 that is not covered. Because best fit pools them together at the version level, it cannot tell you which install is not covered.
5. Findings are summarized on the software title and in reports. The software title has a table in the Software Versions and Their Status section. For a description of the values presented on the title, see "**Interpreting licensing values**" on page 7-7.

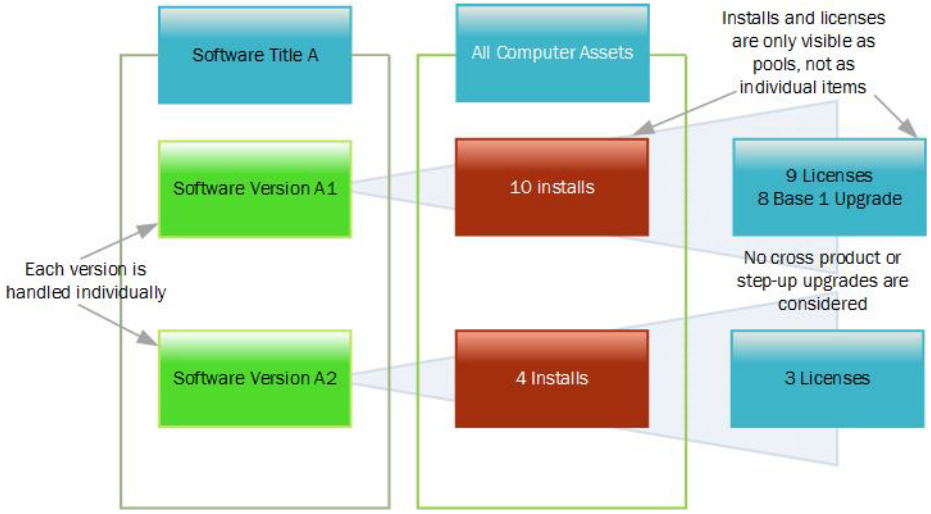


Figure 7-1 Basic Entitlement Example

Interpreting licensing values

The values used to calculate your licensing position are presented on the software title and in views. Table 7-2 describes all of the values and how to use them to understand your licensing position. It is important to understand that the calculation of some values changes depending on the focus — title or version. When a value appears on a title it does not necessarily summarize the values for the versions included in it. Because licensing should be considered on a version by version basis, the values given on a title are generalizations, while the values given for each version accurately reflect the licensing of a version. The focus — title or version — is specified in the table wherever there is a distinction to be made.

TABLE 7-2. Licensing Calculation Terms for Each Version

Licensing Term	Description	Usage
Licensing Status	A generalized status for the entire software title or when it is on a specific version it is the status of that particular version: green for Ok, red for insufficient licenses, and yellow for almost under licensed or for over licensed.	When browsing through your titles you can get a big picture status of a single title or all your titles. When looking at a version you will know precisely what the status is of that version.
Status%	(version) The percentage of your entitled licenses that are in use.	When your status is yellow, the percentage makes it easier to determine whether you are almost under licensed (approaching 100%) or over licensed (very low percentage).
Installed Quantity	The number of discovered software installs.	This shows your legal liability as discovered by Configuration Manager on the linked Configuration Item.
Entitlements	**On a title:** All the base licenses for the software title. **On a version:** The number of licenses available to this version, after assigning all the base licenses to versions and determining which upgrades and downgrades will be required.	The purpose of this value is to identify how many licenses are *actually* available for this title or version.
Licensed Installs	The number of installs that are covered by licenses.	

TABLE 7-2. Licensing Calculation Terms for Each Version (Continued)

Licensing Term	Description	Usage
Remaining Usable	(version) The number of additional installations that this title and version can support.	It is important to understand that while this field is exclusive to this version, it is not cumulative across versions. For instance, if additional installs were performed on a specific version, the remaining usable count for other versions would probably be impacted. This is because the overall entitlement (across versions) is affected by each install.
Remaining Base Licenses	The number of base licenses for this version, which were not used by the best fit calculation.	
Remaining Upgrade Licenses	The number of upgrade licenses for this version which were not used by the best fit calculation.	
Expired Licenses	The number of licenses whose expiration date has passed.	Expired licenses are no longer included in the count of valid base or upgrade licenses.

Status indicators and what they mean

Software assignment and software licensing share the same status indicators and thresholds.

The licensing status of a software title is visually indicated on the title's form, the **Software Titles Tracked by Installation** view, the **Software Titles Tracked by Assignment** view and in reports. Although assignment is compared against licenses in the Software Titles Tracked by Assignment view, the result is still referred to as a licensing status. The assignment status is visually indicated on the Software Titles Tracked by Assignment report and in the Software Titles Tracked by Assignment view.

Only an Administrator can change the threshold at which Provance IT Asset Management Standard determines the licensing status for the three indicators. For more details about the settings, see "**Software status thresholds**" on page 3-5.

What software licensing indicators mean

By default, the status of a software title is shown as follows:

- Red indicator when the title is either under assigned or under licensed (entitled quantity of licenses is less than the installed quantity)
- Yellow indicator when the title is either over assigned or over licensed (entitled quantity of licenses is greater than the installed quantity)
- Yellow indicator when the title is ***almost*** under assigned or under licensed
- Green indicator when the title has an acceptable status (assignment and licensing)

Each version added to a software title has a direct affect on the overall licensing status of the title. If any single version's status is red, the overall

status of the title is red, or under licensed. If any single version's status is yellow, then the overall status of the title is yellow.

An Administrator can change the threshold at which the licensing status for the three indicators is determined. For more details, see "**Software status thresholds**" on page 3-5.

What assignment status indicators mean

With assignment, we measure assigned titles against entitled licenses to arrive at a status. By default the assignment status of a software title is as follows:

- Yellow indicator when there is a surplus of licenses (entitled quantity of licenses is greater than the assigned quantity)
- Yellow indicator when there is ***almost*** a shortage of licenses
- Green indicator when the title has an acceptable status

Because you cannot assign more licenses or titles than you are entitled to, you can never have insufficient licenses to cover your assignments. For this reason the red status indicator is not applicable to assignment status.

Calculating licensing

The licensing status of your software versions and titles is automatically calculated overnight by a workflow, but you can initiate a recalculation of one or more titles on demand, or go back to a point in time (i.e., for an audit).

Calculating licensing overnight

The licensing status of all your software titles, unless their Effective Licensing Position is Excluded, is automatically calculated overnight. An Administrator can change the day and time of the workflow that runs the calculation

through the Provance Administration Settings, see "**Workflow schedule**" on page 3-7.

Calculating licensing for an event (on demand)

Software licensing can be calculated on demand for a specific event, such as a change made to a title, a purchase or a version. To initiate the licensing calculation on one or more selected titles, click the **Recalculate Software Title** task. To initiate calculation on all titles, click the **Recalculate All Software Titles** task.

Calculating licensing for an audit (point in time)

Software licensing is automatically calculated overnight, every night, and its data is stored in the data warehouse for historical purposes. You can report on the licensing data for any given point in time through the Software Titles Tracked by Installation report or the Software Titles Tracked by Assignment report. Use this information as proof of your compliance during an audit.

Determining your liabilities

Identifying over and under licensing issues

A software title is under licensed if there are not enough licenses to account for the number of installations. A software title is over licensed if there are more purchased licenses than there are installations.

To determine if a title is over or under licensed:

1. Go to the IT Asset Management workspace and expand Software Asset Management > Software Titles Tracked by Installation view or Software Titles Tracked by Assignment view.
2. Select a software title in the list. An indicator in the Licensing Status column shows you the title's status as described in "**Status indicators and what they mean**" on page 7-10.

8 Reporting on Asset Management Data

Introduction

The out-of-the-box SSRS (SQL Server Reporting Services) reports provided by Provance are grouped into the following categories:

- Hardware asset management reports
- Software asset management reports
- Agreement reports

Hardware asset management reports

Provance IT Asset Management Standard has the following hardware-related reports:

- **Hardware asset management dashboard**
- **Serialized hardware assets report**
- **Serialized hardware asset details report**
- **Computer asset exceptions**

These reports can be found in the Service Manager Reporting workspace, under IT Asset Management. Additional reports can be created using the reporting feature of Service Manager. Use the parameters section at the top of each report to change the filter values.

Hardware asset management dashboard

The Hardware Asset Management Dashboard presents a high level overview of the current state of your hardware asset management practice. The report includes all hardware assets, except those whose status is either disposed or returned. Each section of the dashboard can be drilled through to discover more details. Drill through from the dashboard to open the Serialized Hardware Assets report or the Agreement Summary report. The Serialized Hardware Assets report is filtered to include only those assets that are owned and not leased.

NOTE: *If your hardware asset data contains multiple currencies, the dashboard converts them to a base currency using an exchange rate. If the exchange rate is not changed, a default of 1 is used. For more details on the settings for exchange rate, see* "**Currencies and exchange rates**" *on page 3-4.*

The dashboard provides the following information about your hardware assets.

Assets by location. The Assets by Location section displays the percentage of asset ownership in your organization by location. The location is derived from the Location field on your hardware assets.

Assets by cost center. The Assets by Cost Center section displays the percentage of asset ownership in your organization by cost center. The cost center is derived from the Cost Center field on your hardware assets.

Assets by organization. The Assets by Organization section displays the percentage of asset ownership by organization. The calculation is based on the percentage of total assets associated with an organization.

Investment by manufacturer. The Investment by Manufacturer section shows the top ten hardware manufacturers based on the investment you made over the last 12 months. The manufacturer is derived from the Manufacturer field of the hardware catalog item that is associated with the hardware asset.

Investment by supplier. The Investment by Supplier section shows the top ten hardware suppliers based on the investment you made over the last 12 months. The supplier is derived from the Supplier field on the Financial tab.

Age of assets (owned). The Age of Assets section shows the percentage of owned hardware assets by their age; that is, how many assets are less than two years old, between two and five years old and greater than five years old. The calculation is based on the Received Date field on the General tab of each asset.

Asset status. The Asset Status section shows how many assets are ordered, shipped, received, installed, stored and retired. The asset status is derived from the Life cycle status field of all your assets. Click on a life cycle status to drill into the **Serialized hardware assets report**, filtered by the status.

Agreement expiration. The Agreement Expiration section shows the number of hardware agreements, by type, that have expired but are still active, are close to being expired, and are valid. Click a status, such as Close, to open the **Agreement summary report** with all agreements having a Close status. Click a type of agreement, such as Lease, to open a summary of all Lease

agreements. Click the status of a particular agreement type, such as Warranty, to see all Warranty agreements having that status. The status is derived from the Administration settings for agreement expiration.

Serialized hardware assets report

The Serialized Hardware Assets report acts both as a drill through report for all elements of the Hardware Asset Management Dashboard and as a standalone report. It includes all owned and leased assets, unless you drill through from the Hardware Asset Management Dashboard > Age of Assets (Owned) section, when only the assets that are owned appear.

Parameters

Use the parameters section at the top of the report to filter by the following fields on the hardware asset form:

- Location
- Cost Center
- Organization
- Supplier
- Manufacturer
- **Life Cycle Status:** The status disposed and the status returned are not automatically included when you run the report with **All** life cycle statuses selected. However, they can be individually selected and shown in the report.
- **Age of Asset:** The asset's age, which is based on its Received date.
- **Type:** The type of asset, such as laptop, monitor, or printer.
- **Asset Tag:** Search by the asset tag. The Asset Tag field is not case sensitive.

Report Contents

The Serialized Hardware Assets report has the following information:

- **Serial Number:** The serial number of the asset.
- **Asset Tag:** An internal identifier for the asset.
- **Type:** The type of asset.
- **Life Cycle:** The life cycle status of the asset.
- **Location:** The location of the asset.
- **Cost Center:** The cost center for the asset.
- **Organization:** The organization responsible for the asset.
- **Received Date:** The date that the asset was received.

Click on any item in a row to open the Serialized Hardware Asset Details report.

Serialized hardware asset details report

The Serialized Hardware Asset Details report provides a summary of a hardware asset.

Parameters

The parameters allow you to select the hardware asset whose details to display in the report. After you click Add, choose a field to search within, such as Display Name or Serial Number.

Report Contents

The report has the following information:

- **Type:** The type of hardware asset, such as laptop.
- **Model:** The model of the asset.
- **Serial Number:** The serial number from the CI linked to the asset.
- **Description:** A description of the asset, if entered.
- **Life Cycle Status:** The life cycle status of the hardware asset.
- **Manufacturer:** The company who manufactured the asset.

- **Asset Tag:** The asset tag of the asset.
- **Assigned To:** The individual who has been assigned the asset.
- Organization
- Location
- **Warranty:** If there is a warranty associated with the asset, then it appears in this section.
- **Support:** If there is a hardware maintenance agreement associated with the asset, then it appears in this section.
- **Lease:** If there is a Lease associated with the asset, then it appears in this section.
- **Financials:** A summary of all the financial information from the asset.
- **Software:** The installed and assigned software on the asset, organized by software title.
- **History:** An historical list of life cycle status changes and their dates.

Computer asset exceptions

The Computer Asset Exceptions report provides a listing of computer assets under each of the following different criteria:

- assets not linked to Windows computers
- assets where the **Assigned to** does not match the primary user of the linked computer asset
- assets where the **Last Discovery Date** is six months or older
- assets where the **Last Scanned Date** is 12 months or older
- assets where the **Last Verified Date** is 12 months or older
- assets where the Location assigned has one or more subnets and the linked Windows computer's IP address is not in the subnet's IP range

Software asset management reports

Provance IT Asset Management Standard has the following software reports out of the box:

- **Software titles tracked by assignment report**
- **Software titles tracked by installation report**

These reports can be found in the Service Manager Reporting workspace, under IT Asset Management > Software Asset Management. Additional reports can be created using the reporting feature of Service Manager. Use the parameters section at the top of each report to change the filter values.

Software titles tracked by assignment report

The Software Titles Tracked by Assignment report lists all the software titles that have been assigned to hardware assets or users. Software titles that are unassigned are omitted from the report and from the Installed count. Based on discovery data, it indicates whether or not the software is installed on an asset. A colored indicator shows the status of a title, which is derived from the proportion of assigned licenses to installed licenses.

Parameters

Use the parameters section at the top of the report to filter by the following fields:

- Publisher
- Calculation Date
- Approval Status
- Licensing Category
- Software Category

Report contents

The Software Titles Tracked by Assignment report has the following information:

- **Software Title:** The name of the software title.
- **Publisher:** The publisher of the title.
- **Calculation Date:** The last date that the licensing calculation was performed on the title. It should not exceed the date set by the report parameter, but it could be earlier than that date.
- **Approval Status:** The current status of the title.
- **Management Scope (Effective Licensing Position):** Set to **Assignment Only Calculation** for the purposes of this report.
- **Licensing Status:** A colored indicator that describes the current licensing position.
- **Total Assignments:** The total number of assignments made from the title.
- **Entitlements:** The total number of **Entitlements** available for the title.
- **Software Category**
- **Licensing Category**
- **Approval:** The approval status of the title.
- **Software Managers:** The person or persons added to the title as software managers.
- **Estimated Unit Cost**

Software titles tracked by installation report

The Software Titles Tracked by Installation report can help you prepare for an audit by showing the licensing status of a software title.

Parameters

Use the parameters section at the top of the report to filter by the following fields:

- Publisher
- Calculation Date
- Approval Status
- Licensing Category
- Management Scope (Effective Licensing Position)
- Software Category

Report contents

The report identifies the following for each software title:

- **Software Title**
- **Publisher**
- **Calculation Date:** The last date that the licensing calculation was performed on the title. It should not exceed the date set by the report parameter, but it could be earlier than that date.
- **Licensing Status:** A colored indicator that describes the current licensing position.
- **Installed Quantity**
- **Licensed Installs**
- **Total Assignments:** The total number of assignments made from the title.
- **Entitlements:** The total number of **Entitlements** available for the title.
- **Software Category**
- **Management Scope (Effective Licensing Position):** Set to **Assignment Only Calculation** for the purposes of this report.
- **Licensing Category**

- **Approval:** The approval status of the title.
- **Software Managers:** The person or persons added to the title as software managers.
- **Estimated Unit Cost**

The following indicators are also applicable for each title on software reports:

- a red indicator if the title is under licensed
- a yellow indicator if the title is over licensed or if it is nearly under licensed
- a green indicator if the proportion of purchased licenses to installed licenses is acceptable

For more details about the colored indicators used for licensing status, see "Status indicators and what they mean" on page 7-10.

Agreement reports

There are two agreement reports:

- Agreement summary report
- Agreement detail report

Agreement summary report

The purpose of the Agreement Summary report is to understand, for planning and negotiating purposes, which agreements are coming up for renewal and which agreements have terminated. The report is organized into sections, one for each type of agreement included in it. Colored icons in the first column indicate the expiry status according to preset thresholds, see "Understanding agreement expiration indicators" on page 4-8. The thresholds are set by default in the Administration workspace > Settings > Provance Administration Settings, but they can be modified temporarily through the report parameters.

Parameters

Use the parameters section at the top of the report to filter by the following fields:

- **Agreement type:** Select the type of agreement that you wish the report to focus on, such as Hardware Maintenance Agreements. Leave the Agreement type default of **All** to include all agreement types in the report.
- Supplier
- **Effective Date Start and End:** All agreements that are effective between the start date and the end date you provide are shown in the report. Leave the date range set to All (default) to show all possible effective date ranges for your agreements.
- **Expiration Date Start and End:** All agreements that expire between the start date and the end date you provide are shown in the report. Agreements that expire outside of this range are not shown. Leave the date range set to All (default) to show all possible expiration date ranges for your agreements.

- **Show Only Agreements with Status of:** Select a status to show only those agreements having a particular expiration status. A status of Unknown signifies that the Expiration Date was not entered. Although the Expiration Date is mandatory on most reports, it is not mandatory on the User Defined Agreement. It is also possible to import agreements using the Data Management Pack and omit the Expiration Date.
- **Expired Threshold:** Enter the number of days, from today, when you consider the agreement to have expired. An agreement is expired when its Expiration Date occurs on or before the date derived from the expired threshold. A zero is considered to be today. For example, if you enter 2 days from today, then an agreement whose Expiration Date occurs within the next 2 days, or anytime prior to that, is considered expired.
- **Close to Expired Threshold:** Enter the number of days, from today, within which you consider the agreement to be close to its expiration. This is intended to flag the agreement as coming close to its Expiration Date. For example, if you set the date as 90 days, then any agreement whose Expiration Date occurs within the next 90 days, is considered to be close to expiring.

  NOTE: *If the Expired Threshold and the Close to Expired Threshold overlap, the report considers the Expired Threshold first and anything outside of it as part of the Close to Expired threshold. For example, if the Expired Threshold is 2 days, then agreements whose Expiration Date falls in the next 2 days are considered expired. If the Close to Expired Threshold is 365, then any agreement falling between 2 and 365 days is considered close to being expired.*
- Location
- Organization
- Cost Center
- Agreement Manager

Report Contents

The report has the following information for most types of agreements:

- **Agreement Number:** Click the Agreement Number to drill into the Agreement detail report.
- **Agreement Name**: The unique identifying name of the agreement.

- **Supplier:** The name of the supplier, vendor or publisher that the agreement pertains to.
- **Effective Date:** The date that the agreement came into effect.
- **Expiration Date:** The date that the agreements expires.

Agreement detail report

The Agreement Detail report summarizes the details of a single agreement. The report includes many of the fields that can be found on the agreement's form. The Agreement Detail report can be drilled into from the Agreement Summary report or run directly from the Tasks area.

Report Parameters

Use the parameters section at the top of the report to filter by the following fields:

- Agreement Type
- Supplier
- Show Only Agreements with Status of
- Effective Date Start and End
- Expiration Date Start and End
- Expired Threshold
- Close to Expired Threshold
- Location
- Organization
- Cost Center

Report Contents

The report contains the following information about the agreement:

- **Nickname:** An abbreviated name given to the agreement.
- Display Name: The full name given to the agreement.
- Description

- **Terms and Conditions:** Terms and conditions that pertain to this agreement.
- **Supplier:** The name of the supplier, vendor or publisher that the agreement pertains to.
- Cost Center
- Organization
- Location
- Notes
- **Effective Date:** The date that the agreement came into effect.
- Life Cycle Status
- **Expiry Date:** The date that the agreements expires.
- **Agreement Manager:** The owner of the agreement.
- Contact
- **Associated Agreements:** If there are any agreements that have been associated with the current agreement, then they are listed in this section. If there are no associated agreements, the section is empty.

9 Managing Incidents, Problems and Change Requests

Creating an incident from a hardware asset item

If you create incidents or change work items related to a computer CI, they are not automatically linked to the computer asset and therefore do not appear under related work items for the computer asset.

1. Go to the IT Asset Management workspace and expand Hardware Asset Management > Computer > All Computer Assets.
2. Select or open the asset and in the Tasks pane click **Create Related Incident**.
3. For details on creating and managing incidents, refer to the Service Manager online help.

Linking incidents and hardware assets

A computer asset item in Provance IT Asset Management Standard can be linked to an incident through the CI. The asset item provides additional information about the asset, such as ownership, location, as well as warranty, lease, support and other related contractual information. In addition, an incident can be created directly from an asset item in Provance IT Asset Management Standard. When a computer asset and computer CI are linked, then the Incident's related items shows both the computer asset and computer CI.

Furthermore, a computer asset can see all incidents opened related to it, or to any computer CI it is related to. Incidents related to a computer asset are found on the asset's Related Items tab, under **Work items affecting this configuration item**. CIs related to the computer asset can see all related incidents under their Related Items tab as well. The Workflow Setting that permits this to happen is enabled by default. For more details, see "Workflow schedule" on page 3-7.

To link a hardware asset to an incident:

1. Go to the Work Items workspace, expand Incident Management and select an appropriate Incident view.
2. Find the incident using a view or a filter and open it.
3. Go to the Affected Items section and click **Add** to add an affected CI. Select the appropriate CI from the available list of computers and click **OK** to save the relationship.
4. In the Task pane click **View Affected Hardware Asset** to view the associated asset item.

NOTE: *If you receive the message "No items found", this indicates the asset item and the CI are not linked together. For details on how CIs and asset items are linked, see* "Creating and editing a hardware asset" on page 5-13.

Creating a change request from a hardware asset

To create a change request from a hardware asset:

1. Go to the IT Asset Management workspace and expand the Hardware Asset Management > Computer > All Computer Assets view.
2. Select the asset.
3. In the Tasks pane click **Create Related Change Request**.
4. For details on creating and managing Change Requests, refer to the Service Manager online help.

Glossary

Term	Definition
Active Directory	Active Directory is a technology created by Microsoft that provides a variety of network services, including: Lightweight Directory Access Protocol (LDAP), Kerberos-based authentication, DNS-based naming, Central location for network administration and delegation of authority, Information security and single sign-on for user access to networked based resources.
affiliation	Affiliation is a relationship between a user and one or more of the following: a cost center, a location and an organization.
agreement	Agreements are managed within Provance IT Asset Management Standard to provide visibility into contractual obligations that affect the business and the IT Asset Management practice. Specifically, they are used as follows: help the service desk during incident resolution, since analysts can quickly assess whether or not an asset is covered by an agreement; prepare for negotiations with suppliers and vendors; track costs for total cost of ownership (TCO) calculations; and maximize support and service level agreements.
asset	In Provance you manage assets, either hardware or software, which are linked to CIs.
asset manager	An asset manager is the person responsible for tracking and reporting on an enterprise's or division's assets. A company may have multiple asset managers, which includes software and hardware asset managers.
asset tag	A physical tag that uses a sequential and unique number, often with bar codes for easy and accurate reading, which can be attached to a device.
assignment	Software titles may be manually assigned to a user or hardware asset. A hardware asset can be manually assigned to a location, a user and/or an organization.

Term	Definition
audit	An audit is usually associated with software assets. A self-audit is performed internally, while an external audit may be performed by software publishers or their agents (license enforcement companies).
Bar Code	Provance Bar Code is a mobile asset scanning software suite. With a minimum of data entry, it gives you the freedom to receive new assets and to perform ad-hoc audits wherever you prefer. Use its simple three-task menu to receive new assets, track the movement of existing assets, and verify asset characteristics. Provance Bar Code is integrated with Service Manager and hence Provance IT Asset Management Standard.
base currency	A base currency is used as the currency displayed in all IT Asset reports; this is required when multiple currencies have been entered into your financial data. Regardless of what currencies have been entered, they will be converted to the base currency using a defined exchange rate.
base license	A base license is the primary license required for a particular version of installed software. If a base license does not exist for each discovered (installed) instance of software, the best fit calculation will flag the software as being under licensed. A base license can have downgrade rights, which is the ability to downgrade the license for use with another version. A base license can only be used once to support an instance of software associated with a user or device.
best fit calculation	Best fit is a set of features that performs the calculation of your licensing position. How it performs the licensing calculation depends on the Effective Licensing Position option.
business object	A business object represents as a single record, all the associated classes and properties of a class. The difference between a business object and a projection is that calculated values are possible with business objects; for example, a location on a computer which has a qualified path that has been derived. Forms, views, and the Application Program Interface (API) can access individual properties of a business object, without retrieving all of the properties as with a projection. All Provance classes, and some Service Manager classes, have business objects. Orchestrator, PowerShell and Web Services can all access business objects.

Term	Definition
Certificate of Acceptance (COA) Number	Each lease schedule has a COA which identifies the following: the client has accepted the device and the lease can start. Ideally, lease acceptance occurs before or on the Effective Date for the schedule.
Configuration Item	A CI is a base CMDB entity. An example of a CI is a Windows Computer CI. Computer assets are associated to Computer CIs, while Software Titles are associated to Software Item CIs (through versions). Both Computer CIs and Software Item CIs come from the System Center 2012 Configuration Manager discovery process before being stored in the CMDB.
CI	Configuration Item
Configuration Management Database	The CMDB is the Microsoft database used by System Center applications.
CMDB	Configuration Management Database
Configuration Manager	Microsoft® System Center 2012 Configuration Manager is part of the System Center platform. It is responsible for gathering and storing device information during the automated discovery process or through manual updates by administrators. Information is transferred from System Center 2012 Configuration Manager to Service Manager via a connector.
CM	Microsoft® System Center 2012 Configuration Manager
connector	A connector is a specialized interface which facilitates standard data imports. In the Service Manager platform, there are connectors to Active Directory, Configuration Manager, Virtual Machine Manager, and Operations Manager.
cost center	A cost center is an accounting construct used to designate a budget or account responsible for financing the asset.
Data Management Pack for 2012	Data Management Pack for 2012 is a data import management pack. Use its wizards to migrate data into Service Manager and control how the data gets created. It supports CSV, Microsoft SQL and LDAP as data sources.
data warehouse	The data warehouse is used by Provance IT Asset Management Standard for high performance reporting based on current and historical data. Selective information is sent from Service Manager and Provance IT Asset Management Standard to the data warehouse on a regular basis (usually 2-4 hours).

Term	Definition
discovered data	Data obtained by System Center 2012 Configuration Manager as it scans your network for software and hardware assets.
disposed asset	Assets that have reached the end of their life (EOL) and are no longer useful to an organization should be marked as disposed. Disposal may be done by an external company to ensure that the assets are disposed in accordance with applicable legislation. Disposed assets are still available for historical and reporting purposes.
effective date	The start date usually associated with an agreement.
entitlements	All the base licenses for the software title.
Enumeration Extension Facility	For the hardware asset type enumerated list, customers can add values and then map which classes they want the value to appear in. The visibility flag (part of the standard enumeration list extension) is ignored as the Class GUIDs identify the only place the enumeration will show up.
expiry date	The end or termination date usually associated with an agreement.
hardware asset	A hardware asset is an item managed by Provance, such as a server, desktop, laptop, a PDA, or a printer. Hardware assets are further categorized into classes, such as computer assets and general assets. Every hardware asset usually has a corresponding hardware catalog serialized item and in most cases a corresponding CI.
hardware catalog	A hardware catalog is created to provide standardized manufacturer, model and supplier information for assets. Usually the creation of a hardware catalog precedes the creation of the hardware asset. In fact, a best practice is to create the hardware catalog prior to adding hardware assets.
hardware maintenance agreement	This is an agreement with an external company to repair hardware. It usually comes into effect after the warranty period expires.
installed asset	A life cycle status that indicates an asset is in use. A hardware asset is installed when it is delivered to its assigned person and deployed at its final location. A software asset is considered installed once it has been loaded on a device.

Term	Definition
IT asset management	IT asset management is the process used to track and manage hardware and software assets, assignments and states. Asset Management links financial and configuration information over the life time of a device or software application.
Provance IT Asset Management Standard	Provance has developed a process management pack that adds IT Asset Management functionality to Microsoft System Center Service Manager. This is an optional management pack installed under Service Manager which facilitates asset management and integrates with incident and change management.
lease agreement	A lease agreement is an agreement with an external company to use hardware and/or software for a specific period of time.
lease schedule	A lease schedule is a specific schedule associated with a group of assets. A single lease agreement may have multiple lease schedules, each with their own effective and expiry dates.
license key	A license key is the publisher supplied activation string or text file that is used by the software to validate its operation and feature set. Some products have a single use key, while others may share a single key across multiple instances.
license reconciliation	The process of matching purchased license quantities to installed license counts.
life cycle	The life cycle is the segmentation of the life of a hardware asset based upon its availability for productive use. By default, the life cycle of a hardware asset within Provance IT Asset Management Standard varies depending on the type of asset—computer assets and general assets. While custom life cycles may be added or deleted, built-in life cycles cannot be modified in any way.
managed asset	A managed asset refers to a hardware or software asset being tracked and managed under Provance IT Asset Management Standard. A managed asset is a hardware asset that may or may not have an associated Windows Computer CI.
manufacturer	A company used to identify a hardware asset supplier.
Microsoft® System Center Service Manager	One of the Microsoft applications that runs under the System Center platform. This is the prerequisite application under which Provance IT Asset Management Standard is installed.

Term	Definition
moved asset	A move is performed on a hardware asset that is changing its location. It may be moving to another building, office, or to storage.
ordered asset	Ordered assets are assets that have not arrived from a vendor. Ordered is a life cycle status of a hardware asset.
Organization	An organization represents a functional group within a company that is responsible for an asset.
Over licensed	A software title is over licensed if there are more purchased licenses than there are installed instances of the title. While a small degree of over licensing is expected due to license granularity, and is desirable to allow for immediate service, a high degree of over licensing represents a cost for unused capacity.
Ownership information	The owner is the person or end user who is in possession or responsible for a hardware or software asset. Business owners refer to those who are responsible for the financial or business management of a collection of assets.
Phase	Life cycle states are grouped into one of the following phases: Procurement, Active, Inactive, and Historical. The phase helps restrict tasks and activities from operating against a set of assets, to reduce the scope on workflows and to target views. For example, only a handful of life cycles are inside the active phase, and only those life cycles will be processed by the best fit calculation.
physical computer	The term physical computer is used when linking a Provance IT Asset Management Standard computer asset to a Service Manager Windows computer CI. A physical computer is a computer that is not pending delete and that is not identified as a virtual computer.
Physical Inventory	An internal process to verify location, ownership and configuration of a hardware asset and optionally its related software assets.
PoP	Proof of Purchase
Process Management Pack	A Process Management Pack adds data structures, forms, workflows and reporting to extend the functionality of one or more System Center applications like Service Manager.

Term	Definition
Proof of Purchase	Proof of Purchase is an invoice or receipt identifying a specific software SKU from a supplier and attached to a software purchase. In case of an audit it shows how the license (and its quantity) is valid.
Publisher	A term used to identify a software vendor.
received asset	A received asset is one that has been received from a vendor, but has not yet been stored or installed. With Provance Bar Code, receiving personnel use only a bar code scanner to scan each item received, and enter a minimum amount of information about each shipment. The Receive task on the scanner is used to perform this operation
refresh cycle	The refresh cycle is an enterprise standard period that is specified in the hardware catalog item associated with a model. It is used to indicate when a hardware asset should be replaced. This period is usually associated with "evergreen" policies. The initial refresh date for an asset is calculated by adding the refresh cycle to the install date.
retired asset	An asset is retired when it is being placed into storage prior to disposal, or if it is at the end of its life cycle.
returned asset	An asset that has been returned under a lease agreement has a life cycle status of returned. In a leased asset, returned replaces disposed as the final life cycle status.
serialized	Any physical asset that is maintained by instances, such as computers, printers, servers, and mobile devices.
service catalog	A set of service offerings and request offerings provided by IT to users. Offerings are items that users can select from the IT service portal. A service offering is a service provided by IT, such as purchasing new software. A request offering is a request offered by IT, such as a request to increase the size of your mailbox.
Service Manager	Microsoft® System Center 2012 - Service Manager
Service Manager	The base application for Provance IT Asset Management Standard.

Term	Definition
Service Manager Console	The user interface that is used to perform Service Manager functions, such as incidents, changes, and tasks as well as Asset Management. This is automatically installed when you deploy a Service Manager Management Server. Additionally, you can manually install the Service Manager console as a stand-alone application on a computer. There can be many consoles connected to the Service Management Server.
shipped asset	A shipped asset is one that has been ordered but not yet received from a supplier.
software asset	A software asset is a single instance of a software title.
software catalog	The software catalog contains rules for mapping software usage to versions as well as a list of software items that have yet to be mapped to versions.
software installs, excluded	Software titles are removed from the Installed count when they are installed on a hardware asset whose life cycle status indicates that it is not being used; for example, software installed on a Disposed asset should not be included. Because these software titles are no longer considered installed, the licensing status of the software title changes for the positive.
software items	Software items are discovered instances of software provided by Service Manager.
software license, excluded	A software license is excluded automatically from the best fit calculation when its start or end date makes it ineligible for use towards your licensing position.
software licensing agreement	A software licensing agreement (also known as a EULA) identifies the terms and conditions associated with a software title through the license purchase.
software support agreement	A software support agreement defines the terms and conditions or type of support that a software product has.
software metering	Software metering provides you with the ability to monitor and collect information about software usage from Configuration Manager clients. Some of this information is presently imported into Provance IT Asset Management Standard. The last used date for software is shown on the computer asset's Software tab as well as when you View Related Hardware Assets from a software version (through a title).

Term	Definition
software title	A software title is a software application you can manage with Provance IT Asset Management Standard. A software title has one or more versions assigned to it. Each version can be linked to one or more software items that were discovered.
software usage	This is the data that is collected through the System Center 2012 Configuration Manager software metering facility and related to a software version by mapping an enabled metering rule.
supplier	A term used to identify the company from whom you purchased a hardware or software asset.
under licensed	A software title is under licensed if there are not enough licenses to cover the number of installations. This means the enterprise is not in compliance with the product licensing.
upgrade license	An upgrade license permits you to upgrade to or downgrade from a specific version of software. An upgrade license is applied during best fit calculation to satisfy any versions that do not have the requisite base license. An upgrade license cannot be applied to a version without an available base license. An upgrade license can only use its 'downgrade to' or 'upgrade from' once, and it cannot use them both.
user	A user is synonymous with an owner, the person in possession of an asset.
user defined agreement	A user defined agreement allows you to manage an agreement that is outside the predefined types of agreements provided with Provance IT Asset Management Standard. User defined agreements can be associated with other agreements and with CIs.
warranty	Vendor specific terms and conditions for the repair or replacement of a damaged or broken hardware asset.
workflow	A sequence of activities (workflow activities) that automate a business process, such as automatic resolution or automatic e-mail response. Workflows are comprised of workflow activities.
workspace	A workspace is an area of the Service Manager interface that provides access to related functions. Workspaces in Service Manager include management packs, administration items, configuration items, library and work items.

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