IBM Endpoint Manager for Software Use Analysis Version 9.0

# Managing Software Inventory Guide



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This edition applies to version 9.0 of IBM Endpoint Manager for Software Use Analysis (product number 5725-F57) and to all subsequent releases and modifications until otherwise indicated in new editions.

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### Managing software inventory



The topics in this section provide information about how to discover software in your IT infrastructure. You can check how to generate and view reports, analyze the findings, and adjust all processes and functions for creating these reports.

### Software asset management dashboard

The software asset management dashboard provides you with a quick overview of the most important information about the software assets in your infrastructure. It includes information about the software catalog, part numbers, the status of software assignment confirmation, and completeness of the data that is used for capacity calculation.

### **IBM Capacity Data Completeness**

The widget shows whether agents are correctly configured to collect all data for the hardware and software that is present in your infrastructure. A system can have an incomplete and inactive scan at the same time.



### **IBM PVU Subcapacity**

The widget presents products with the highest PVU consumption rate. It shows how many PVUs a product consumes but does not relate this information to your license entitlements. A maximum of five products are displayed by default. The accuracy of data that is displayed on the chart depends on when the scan data was imported, whether the PVU table is up-to-date, and whether software assignment was modified. If any of these factors was altered, an appropriate message is displayed on the widget.

### No Data

Indicates that no data is available. It might occur when the data from the scans was not uploaded, the upload of the data has not finished yet, or

inventory scans do not work properly. The message is no longer displayed if data from at least one agent is successfully updated.



#### Elements of the widget

- **1** The PVU consumption rate of a product.
- 2 A link to the whole IBM PVU Subcapacity report.
- 3 The current version of the PVU table.

A link to the website on which you can check whether a new version of the PVU table is already available.

**5** A link to the Metric Table Upload panel on which you can upload a new version of the PVU table.

### **IBM Software Classification**

The widget presents the number of confirmed and unconfirmed software installations in your infrastructure. The accuracy of data that is displayed on the chart depends on when the scan data was imported and whether the part numbers file is up-to-date. If any of these factors were changed, an appropriate message is displayed on the widget.

#### No Data

Indicates that no data is available. It might occur when the data from the scans was not uploaded, the upload of the data has not finished yet, or inventory scans do not work properly. The message is no longer displayed if scan data from at least one agent is successfully updated.



#### Elements of the widget

A link to the IBM Software Classification panel with results narrowed down to software installations whose assignment was confirmed.

<sup>2</sup> A link to the IBM Software Classification panel with results narrowed down to software installations whose assignment is not confirmed yet. Go through these items and either confirm their default assignment or reassign them to different products so that all installations in your infrastructure are confirmed.

3 A link to the IBM Software Classification panel.

4 The date when the last part numbers file was imported.

5 A link to the Part Numbers Upload panel on which you can upload a new part numbers file.

### **Inventory Data**

The widget presents a summary of the IBM software that is installed in your infrastructure, computers, and computer groups in your infrastructure.



### **Inventory Exploration**

The widget presents top five publishers with the largest number of defined contracts defined. The publishers are ordered according to the number of computers on which their software is installed, regardless of the number of contracts.



### **Software Catalog**

The widget presents links to the publishers, software products, versions, releases, components, and signatures in the current catalog.



### Maintaining accurate software inventory

When you know that a particular software item is installed in your infrastructure but is not displayed in Software Use Analysis, you must customize your software catalog so that your software inventory is accurate.

### About this task

The following workflow presents one way of maintaining accurate software inventory and is intended as a starting point for new users. You can use your own method of ensuring that your software inventory is up-to-date and accurate.



Your software inventory should be accurate after the scan data import.

- 1. View software inventory. If there are software detection problems, troubleshoot them. For more information, see the topic *Troubleshooting software inventory problems* in the Troubleshooting guide.
- 2. Optional: If there is a newer version of the software catalog, **update the catalog**.
- 3. If a software item that is installed in your infrastructure is not displayed in Software Use Analysis, customize the software catalog. Analyze the Raw Usage Data or Scan Data report and identify a file, registry entry, or other type of information that can be used to identify the software item or its usage. If the software item can be detected with a simple signature, that is a file or an installation package, create a signature by using the simple catalog management functionality that is available directly in Software Use Analysis.

If the software item cannot be detected with a simple signature, use Software Knowledge Base Toolkit to create a complex signature. **Important:** A signature can be edited only in the application in which it was created.

- Optional: Check the version of the software catalog in Software Knowledge Base Toolkit. If a newer version is available, import the catalog.
- 5. If the software item exists in the software catalog, add the signature to the existing hierarchy.
- If the software item does not exist in the catalog, create the software hierarchy and then add the signature.

**Important:** After you start customizing your software catalog in Software Knowledge Base Toolkit, you can no longer import the latest IBM<sup>®</sup> catalog directly to Software Use Analysis. You must use Software Knowledge Base Toolkit to keep your catalog customization.

- 7. Publish the catalog that you customized in Software Knowledge Base Toolkit to make it available for Software Use Analysis.
- 8. Importing software scan data. The inventory results are stored on your Endpoint Manager server. To import software scan data, the software catalog, and other settings that changed since the last update, you must extract the data from the Endpoint Manager server and load it into Software Use Analysis.

### **Reviewing software inventory**

After new components are discovered by software scans, the server associates those components with products based on their relationships in the software catalog. If the initial association does not reflect your actual environment, that is, the discovered components do not in fact belong to the automatically assigned products, you must change the assignment. You can reassign, confirm, and share software product instances. You can also include them in and exclude them from the pricing calculations. Work with software instances to ensure that the software associations match your entitlements.

### Before you begin



You can watch video tutorials about managing software on the wiki.

### **IBM Software Classification**

Correct assignment of software components reduces the cost of software ownership and ensures audit readiness. Use the **IBM Software Classification** panel to ensure that software assignments reflect your entitlements.

2	Unconfirmed Classifications 👻 🛅 📑 🎆 Actions	,			Product/Rele	ase/Component	▼ Filter	
	Product/Release/Component	Host Name	Confirmed	Bundling Rules Used	Current Server ID	Operating	Part Numbers	Installation Path
	📧 IBM Endpoint Manager Starter Kit for Lifecycle Managemen		4					
	IBM Tivoli Directory Server		4					
	IBM Tivoli Directory Server 6.2 (2)		4					
3	IBM Tivoli Directory Server - Client 6.2 Client 6.2 C	ssign instances to this product ssign instances to another produ firm the assignment of instances ude instances in pricing calculatic	uct	Based on: the relation in the software catalog, the stand-alone product discovery.	IBM 8676 KBRD742	Win2003 5.2.3790		C:Instaild Isignatures Ibeta_signatures\IB M WebSphere Application Server Network Deployment\IBM Tivoli Directory Server - Client_6.2\
	생 Exc IBM Tivoli Directory Server - Client 6.2 영	ude instances from pricing calcul re instance NC046213	lation	Based on: the relation in the software catalog, the stand-alone product discovery.	IBM 8676 KBRD742	Win2003 5.2.3790		C1signatures \beta_signatures\IB M WebSphere Application Server Network Deployment\IBM Tivoli Directory Server - Client_6.2\
	IBM Tivoli Endpoint							

### **1** Refreshing

To update the results according to the selected time range, click **Update**.

#### **2** Selection of products

After new components are discovered, the server associates them with products based on their relationships in the software catalog. If the relationships do not guarantee a 100% match, the product instances are unconfirmed. To start working with your inventory, specify whether you want to display confirmed, unconfirmed or all classifications. Focus on the unconfirmed classification as they require your action.

### **3** Actions

The actions menu is available from the list at the top of the table or when you right-click a row on a product, release, or component. Use the following actions on the selected items to ensure that they match your entitlements:

- "Reassigning software instances to a product" on page 13
- "Confirming the assignment of a software instance" on page 12
- "Including software instances in pricing calculations" on page 15
- "Excluding software instances from pricing calculations" on page 14
- "Sharing software instances" on page 15

**Tip:** To select more than one product or release at a time, hold down the Ctrl key. To select a range of products or releases, hold down the Shift key.

### 4 Filter

You can narrow down the number of products that are displayed on the panel by filtering them down.

#### 5 Part numbers

This column shows the part numbers that you purchased and imported to the server. Make sure to systematically import a list of your part numbers, because they facilitate software assignment. You can import the list from Passport Advantage<sup>®</sup> or create it yourself.

### Automated bundling

Automated bundling is the process of automatically assigning component instances to products based on four rules: part numbers, partition collocation, infrastructure collocation, and stand-alone product discovery. The results of automated bundling are shown on the **IBM Software Classification** panel.

After a software scan, new component instances are automatically associated with products based on a combination of four product-component linking rules.

- 1. First, the *automated bundling* process assigns points to product-component connections.
- 2. Next, the connections that have the highest number of points are marked as the ones with the greatest internal score.
- 3. After that, assignments are selected when the final bundles are calculated.

Each of the rules in the following table contributes to the internal score that is calculated when components are assigned to product bundles.

Rule	Description
"Part numbers" on page 8	This rule uses the part numbers list to identify possible target products. Part numbers are the records of the software offerings that were purchased from IBM. They can be downloaded from Passport Advantage or obtained from your customer records.
"Partition collocation" on page 10	This rule discovers the component instances that are on the same partition, and are related to a product in the software catalog. For example: DB2 <sup>®</sup> that is installed on the same computer as Software Use Analysis is bundled with Software Use Analysis.
"Infrastructure collocation" on page 10	This rule discovers the component instances that are installed in the same infrastructure, and are related to a product in the software catalog. The search does not include the agent on which the product is installed.
"Stand-alone product discovery" on page 11	This rule identifies the component instances of particular products, and indicates the product that contains the lowest number of components.

Table 1. Bundling rules

#### Important:

• If the internal score is low, more actions might be necessary, for example manual bundling.

• Instances that are a part of an excluded product cannot be rebundled automatically. Instances can be bundled with excluded products only if they are associated with the excluded products based on the software catalog or the stand-alone product discovery. Any new instance that is assigned to the excluded product is also excluded on the agent.

### Part numbers

Part numbers represent software products that you purchased. They can be used to increase the accuracy of automated bundling by narrowing down the number of possible products to which a discovered component can be assigned.

### Example

Automated bundling assigns a database component to one of the products that were discovered in your infrastructure. However, the database component can also be potentially assigned to another software product.



Before you confirm the assignment of the database component or change it manually, you can import the part numbers list into Software Use Analysis. Based on the list and the component-product relations that are defined in the software catalog, the initial assignment of the database component is more accurate.



### Limitations

The extent to which part numbers can improve automated bundling is limited by the following factors:

- Part numbers influence the assignment of only those components whose assignment is not confirmed yet
- Part numbers that were purchased before 2010 are not contained in the software catalog
- Part numbers that represent products that have limited availability are not contained in the software catalog
- Part numbers that represent products that are available only outside of the United States are not included in the catalog

#### Preparing the part numbers file:

The part numbers file can be used to increase the accuracy of automated bundling by narrowing the number of possible products to which a discovered component can be assigned. You can download the file from Passport Advantage or create it manually.

#### Procedure

- To download the file from Passport Advantage:
  - 1. Log in to Passport Advantage.
  - 2. From the menu on the left, select **Reporting** > **Order history**.
  - **3**. If applicable, select the relevant site or sites.
  - 4. In the Type of order section, select All.
  - 5. Specify the **Sales order date** and click **Submit detail report**. Your report is ready.
  - 6. To save the file, click **Download report**, and then select **Comma delimited**.
- To create a CSV file on your own, create a file in which the column with part numbers is called Part number. Use a comma as a field separator and quotation marks (" ") as a text delimiter. For example:

"Part number", "Order type" "D07UMLL", "Licenses" "D08UMLL", "Licenses" "D09UMLL", "Licenses"

**Tip:** Only the column named Part number is treated as the one that contains part numbers. If your part numbers file also contains a column that is named Order type, only the rows that contain the Licenses element are imported.

#### Uploading part numbers:

Upload and import part numbers to increase the accuracy of automated bundling of software components.

### Before you begin



You must have the Manage Uploads permission to perform this task.

#### Procedure

- 1. Prepare the part numbers file.
- 2. In the top navigation bar, click Management > Part Numbers Upload.
- **3**. Click **Browse** and choose the part numbers file to upload. You can upload either a csv or zip file.
- 4. Optional: If you want to overwrite the existing part numbers, select the Overwrite existing part numbers check box.

**Note:** The check box is enabled only if you have previously imported a part numbers file.

5. Click Upload.

When you upload the file, a new entry is created in the Upload History table. The status is Pending until you run the import. **Important:** If more than one entry is Pending in the table, only the latest one will be executed during the import.

 In the top navigation bar, click Management > Data Imports, and then click Import Now.

#### Results

The part numbers were imported to Software Use Analysis and saved in the adm.current\_part\_numbers table in the database. If you want to remove the part numbers from the server, click **Remove All Part Numbers** and then run the import. You can remove the part numbers only if you have previously imported the part numbers file to the server.

#### Partition collocation

Partition collocation is a rule that discovers component instances that are on the same partition and are related to a product in the software catalog. If any of the discovered component instances has a confirmed, one-to-one, or auto-bundled relation to the product, the other instances are automatically bundled with the same product.

#### Example

The assignment of the Server 2 component to Product 4 is simple, auto-bundled, or manually confirmed. The database component is assigned to Product 1. Both components are on the same partition.



Based on the software catalog data, the database component is automatically reassigned to Product 4.



#### Infrastructure collocation

Infrastructure collocation is a rule that discovers component instances that are installed in the same infrastructure and that are related to a specific product in the software catalog. The search does not include the agent on which the product is installed. If any of the discovered component instances has a confirmed,

one-to-one, or auto-bundled relationship with the product, the other instances are automatically bundled with the same product.

### Example

The assignment of the Server 2 component to Product 4 is simple, auto-bundled, or manually confirmed. The database component is assigned to Product 1. Both components are in the same infrastructure.



Based on the software catalog data, the database component is automatically reassigned to Product 4.



### Stand-alone product discovery

Stand-alone product discovery is a rule that identifies component instances of particular products, and indicates the product that contains the lowest number of components. If the possibility that the instances belong to a product is above a specific threshold, they are automatically bundled.

### Example

The agent discovers the database component and the server checks which products contain this particular database component in the software catalog. The database component is assigned to the product with the lowest number of components, in this case, Product 2.



### Confirming the assignment of a software instance

After new components are discovered, the server associates them with products based on their relationships in the software catalog. If the relationships do not guarantee a 100% match, the product instances are unconfirmed. If the default bundling matches your environment, you must manually confirm the instances in default products. If the default bundling does not match your environment, you must reassign instances to achieve a 100% match.

### Before you begin

You must have the Manage IBM Software Classification permission to perform this task.

### Procedure

- 1. In the top navigation bar, click **Management** > **IBM Software Classification**.
- 2. If the default bundling reflects your environment, right-click the instance whose bundling you want to confirm, and click **Confirm the assignment of instances**.
- **3.** If the default bundling does not reflect your environment, reassign instances to correct products.

### Reassigning software instances to a product

You can reassign software instances to another product in two ways. You can select instances that you want to reassign and choose a product with which you can bundle them from a list. Alternatively, you can find a software product to which you want to reassign the instances and see whether all instances that you want to reassign are eligible for that product. Reassignment of software instances to proper products lowers the total cost of ownership, reduces the risk of unplanned cost of license compliance payments, and the risk of not meeting the conditions of your contractual licensing.

### Before you begin

You must have the Manage IBM Software Classification permission to perform this task.

### About this task

The two main reasons for reassigning instances are:

- Fixing mistakes If a component is assigned to a wrong product, you can identify the correct product, select the instances, and bundle them to the right product.
- Repurposing If a component is assigned to a software product that you want to uninstall, you can simply reassign the component to another legitimate product.

### Procedure

- 1. In the top navigation bar, click Management > IBM Software Classification.
- 2. You can reassign software instances from the level of the instances or from the level of the product. To reassign software instances to another product from the level of the instances, perform the following steps.
  - a. Find the product to which you want to reassign the software instances.
  - b. Right-click the product, and click **Reassign instances to this product**.
  - c. Select the instances that you want to reassign to the product, and click **Reassign**.
- **3.** To reassign software instances to another product from the level of the product, perform the following steps.
  - a. Find the instance that you want to reassign.
  - b. Right-click the instance, and click **Reassign instances to another product**. A list of eligible products to which all instances can be reassigned is displayed.
  - c. Select the product to which you want to reassign the instances, and click **Reassign**.

### Example

According to the software catalog, *Product 4* is associated with *Database component*. If you know that *Database component* is a part of *Product 1*, you have to reassign this component from *Product 4* to *Product 1*. After you reassign it, *Product 4* disappears from the inventory, and *Product 1* replaces it. If either *Product 1* or *Product 4* is PVU-based or CPU-based, during the next recalculation, the consumption of processor value units or central processing units will be recalculated according to the new association.



#### Example 2

Both *Product 1* and *Product 4* can contain *Database component*. In your current infrastructure, the component is assigned to *Product 4*. If you decide to uninstall *Product 4* and install *Product 1*, you only need to rebundle *Database component* from *Product 4* to *Product 1*.

### Excluding software instances from pricing calculations

You can exclude one or more product instances from the PVU and systems software calculations if it is allowed by your license agreement.

### Before you begin

You must have the Manage IBM Software Classification permission to perform this task.

### Procedure

- 1. In the top navigation bar, click Management > IBM Software Classification.
- 2. Right-click an instance that you want to exclude from the pricing calculations, and click **Exclude instances from pricing calculation**.

**Tip:** To select more than one product or release at a time, hold down the Ctrl key.

- 3. If the instances that are displayed in the table are correct, click Next.
- 4. Choose the reason for excluding the instances. The possible reasons are:
  - Backup, disaster recovery
  - Alpha, beta, early support program
  - Component of a non-licensed product: if the product has a different licensing model than PVU or systems model, its component might be excluded from the calculations, depending on your license agreement.
  - Evaluation, trial
  - Not eligible for licensing: the PVU or systems license agreement was not signed for a product.
  - Component is not compatible with the server or agent system: the component is installed on a server and cannot be initiated because of differences, for example, in the architecture or operating system. An example might be a file server.
  - Other: you must enter a comment to justify the exclusion.
- 5. Click **Exclude**.

**Important:** Instances that are assigned to the excluded product cannot be reassigned.

### Including software instances in pricing calculations

You can include one or more instances in the PVU and system software pricing calculations to reduce the risk that you do not meet your contractual licensing conditions. You can include only those instances that were previously excluded.

### Before you begin

You must have the Manage IBM Software Classification permission to perform this task.

### Procedure

- 1. In the top navigation bar, click **Management** > **IBM Software Classification**.
- 2. Right-click an instance that you want to include in pricing calculations, and click **Include instances in pricing calculation**.

**Tip:** To select more than one product or release at a time, hold down the Ctrl key.

### Sharing software instances

You can share an instance of a component between more than one product. It contributes to the pricing of all products that are assigned to the particular instance.

### Before you begin

You must have the Manage IBM Software Classification permission to perform this task.

### Procedure

- 1. In the top navigation bar, click **Management** > **IBM Software Classification**.
- 2. Right-click the instance that you want to share, and click Share instance.
- **3**. Choose products with which you want to associate the selected instance, and click **Share**.

### Example

The same instance of *Database component* can be used by both *Product 1* and *Product 2*. After the association, both products appear in the inventory. If either *Product 1* or *Product 2* is PVU-based or CPU-based, the consumption of processor value units or central processing units is recalculated according to the new associations.



### Working with software catalogs

To correctly identify the components of various software products in your infrastructure, ensure that your software catalog is always up-to-date. Periodically import a software catalog that contains the most recent software products. Also, manually add those products that are installed in your infrastructure but do not have corresponding entries in the catalog.

### Catalog customization process

The process of adding custom signatures to the software catalog requires careful planning and consideration. It starts with identifying products that you expect to discover but are not reported or are missing from the software catalog. Next, you should organize your work to ensure that the most important products are given the highest priority. Then, you determine what files or packages can be used to detect the software and report its usage. Finally, you can create the signatures.

**Note:** Software Use Analysis is intended for software inventory and license management. It is suggested that you extend the software catalog for those purposes only.

### **Process input**

The input to the catalog customization process is a list of software products that you want to be discovered. The list can be based on the general knowledge of your environment and the procurement data. As the discovery, monitoring, and license management of every software product require extra effort, target products on the basis of license expenses. Focus on a few selected products and adopt an iterative approach instead of trying to work on all products simultaneously.

### **Required skills**

A set of skills that are helpful during the creation of the custom catalog content includes:

- General knowledge of the software products that are used in your company, their architecture, and licensing models
- · General knowledge of the operating systems on which the software is installed

### Step 1: Prioritize the work

Before you start adding custom signatures to the software catalog, prioritize your work. Start with products that are critical from the business perspective. Then, iteratively continue with the remaining products until all software that is used in your company is discovered.

To optimize your work on the custom catalog content, adopt an iterative approach. Start by grouping all software products that are used in your company into software families and focus on one software family per iteration. Analyze and create software signatures for all products that belong to the family on which you are working. If a software family is too extensive, split it into smaller groups, for example based on editions or distributions. The iterative approach allows for continuously extending the catalog content and verifying its correctness at the same time. Thus, you can gain more benefits in less time.

### Step 2: Analyze your software

Extend the software catalog only with information that is related to products that are used in your company but are not reported or do not exist in the catalog. Consult the product administrators and available documentation to gather information that is related to the product architecture and licensing model.

To gather basic information about a software product, work with the administrator who is responsible for its installation and has the knowledge of its architecture and licensing model. Try to establish a reference installation. Investigate the architecture of the product to obtain the following details:

- Separately installable pieces (components) that constitute the product and are important for discovery or licensing purposes
- Version number of each component
- Ways to check whether the component is installed
- Platforms on which the component can be installed
- · Licensing model

If the product administrator is unable to provide the information necessary for creating the licensing model, consult the available documentation. It can be found on the installation media, in the product installation path, license agreements, installation instructions, or online resources.

### Step 3: Review information about files and packages

To identify candidates for software signatures, review information about files and packages that exist on the computer where a particular software product is installed.

#### Candidates for file and package signatures

Most efficient signatures are file-based signatures with constant size that is different for each release or signatures that are based on package data where a wildcard (\*) can be used. In both cases, the file and package data should be removed during the product uninstallation or changed during the product upgrade or downgrade.

When you are looking for candidates for such signatures, always check:

- Whether any product documentation describes methods for determining the product edition and release based on files or package data
- Whether the product name and version can be unambiguously determined, for example, by the file name
- Whether there are any component-specific files:
  - Executable files whose version, part of version, or size is specific to the particular release
  - Files whose name or its part is specific to the particular release
  - Files whose content defines the product name and version

- Other files with constant size, for example, a graphic that contains the product release number
- Libraries with version or constant size
- · Whether there are application-specific packages

Do not create signatures that are based on:

- Shared or external libraries
- Files that can be used by another product
- File names that are commonly used, for example, readme.txt

#### Available reports

Use one of the following reports to identify candidates for signatures.

### Package Data

The report provides information about the packages that are installed on the computers in your infrastructure. To find a package that can be used as a signature, filter the report to the data from the computer on which the particular software product is installed.

#### Scanned File Data

The report provides information about files that were detected on the computers in your infrastructure. To find a file that can be used as a signature, filter the report to the data from the computer on which the particular software product is installed. To further narrow down the results, specify the whole or part of the path to the directory where the software is installed. Then, look at the following columns:

- **Recognized** the column shows whether the file was recognized as part of an existing signature
- **Caused Detection** the column shows whether the file contained enough information to cause detection of the related software

**Important:** The columns are not displayed by default. To display the columns, click **Configure View** and select the appropriate check boxes.

If the value in both columns is false, the file is not used for software detection and can be used to create a new signature.

Only files with the following extensions can be used to create software signatures:

```
*.A, *.APP, *.BAT, *.BIN, *.CMPTAG, *.EAR, *.EXE, *.FXTAG, *.ITLM, *.LIC,
*.NLM, *.0, *.OCX, *.PL, *.PRODUCT, *.PTF, *.RPM, *.SGN, *.SH, *.SIG,
*.SIGNATURE, *.SL, *.SPB, *.SWIDTAG, *.SWTAG, *.SY, *.SYS, *.SYS2, *.TCL,
*.XPM, *.a, *.app, *.bat, *.bin, *.cmd, *.cmptag, *.com, *.ear, *.exe,
*.fxtag, *.ink, *.itlm, *.lic, *.mdb, *.nlm, *.o, *.ocx, *.pl, *.product,
*.ptf, *.rpm, *.sgn, *.sh, *.sig, *.signature, *.sl, *.so, *.spb, *.swidtag,
*.swtag, *.sy, *.sys, *.sys2, *.tcl, *.xpm
```

#### **Unrecognized Files**

The report creates a ranking of files that are most commonly encountered in your computer infrastructure but do not produce matches for any signature. The ranking of 1000 file names is separate for each computer group. It is based on the number of computers on which the files were detected, the number of copies of a particular file, and the alphabetical order. The files are listed by name with no regard to their size or version metadata. To access such detailed information, click the file name.

### Step 4: Create component signatures

Use the following guidelines to avoid common mistakes and to create the most accurate signatures that better recognize software.

To obtain the best results, try to create signatures that meet the following requirements:

- The signature is based on the main executable file of the software.
- The signature combines the main executable file of the software with package data if it is available.
- The signature discovers only one release. If it discovers release 7.2, it cannot be valid for releases 7.1 or 7.3.
- The signature is generic and discovers a particular release and all its mod-releases and fix packs. To ensures that the signature is generic:
  - Use a wildcard (\*) in the package version, for example: 7.2.\*
  - Specify the version of the file rather than its size
  - If a signature combines a file and package data and neither of them has a version, accept a file with any size

**Tip:** If you are unable to cover all fix packs and mod-releases, combine separate conditions for each of them.

Version of the software that are provided in the package and in the file might sometimes be inaccurate and might not match the version that is displayed in Software Use Analysis. If such discrepancy occurs, ensure that the proper version is defined in the software catalog. Consider creating more specific rules for handling issues related to software versioning.

### Downloading a new software catalog

You can download the latest software catalog from the IBM Endpoint Manager server.

### About this task

The **Software Catalog Update (SUA 9.x)** task downloads a ZIP file that contains a software catalog in an XML format and two CSV files with charge unit data. Charge unit data consists of information about charge unit definitions, their relations with the products, and additional parameters and part numbers that are used for software licensing purposes.

If the task is not applicable on your endpoint, see **Server operation problems** in the Troubleshooting section.

### Procedure

- 1. Start the IBM Endpoint Manager console.
- 2. In the navigation bar, click Sites > External Sites > IBM Endpoint Manager for Software Use Analysis > Fixlets and Tasks.
- 3. In the upper-right pane, click **Software Catalog Update (SUA 9.x)**, and then click **Take Action**.
- 4. Click the name of the computer on which you want to download the software catalog, and click **OK**.

### Results

The software catalog was downloaded to the sua\_catalog folder in the Software Use Analysis installation directory, by default: /opt/IBM/SUA/sua\_catalog.

### What to do next

Copy the catalog file to the computer from which you access the Software Use Analysis web user interface and then update the catalog.

### Updating a software catalog

Regularly update the software catalog and check for updates every month to keep your software inventory up-to-date. If you do not edit the content of the software catalog that is provided by IBM, update the catalog directly in Software Use Analysis.

### Before you begin

1 You must have the Manage Uploads permission to perform this task.

### About this task

If you do not edit the content of the software catalog or if you use the built-in catalog management functionality to create your customized catalog content, you can upload a ZIP file that contains both the catalog in an XML format and two CSV files with charge unit data. If the catalog is modified in Software Knowledge Base Toolkit, you must import the software catalog in Software Knowledge Base Toolkit, publish, and then import it to Software Use Analysis. You must upload a ZIP file there that contains only the CSV files. Then, you can use Software Knowledge Base Toolkit to update the catalog file. For more information about updating the catalog in Software Knowledge Base Toolkit, see: "Importing a software catalog to Software Knowledge Base Toolkit" on page 33.

### Procedure

- 1. Download the catalog from the IBM Endpoint Manager console.
- 2. In the navigation bar, click Management > Catalog Upload
- 3. Click **Browse**, select the file in a ZIP format, and click **Upload**. The default location of the file is /opt/IBM/SUA/sua\_catalog.

#### Results

The software catalog file and the charge unit data are listed in the table. The statuses are **Pending** until you import the scan data to process and update new data.

### Searching the catalog

You use the search feature to quickly locate software items in which you are interested. Software items are structured into hierarchies that consist of the software publisher, title, version, release, component, and signature. You can search for the software by any of these categories.

### Before you begin



🛐 You must have the Manage Catalogs permission to perform this task.

### Procedure

- 1. In the top navigation bar, click **Home**.
- 2. In the **Catalog Search** area, enter a part or all of the publisher, title, version, release, component, or the signature name for which you want to search. For example, to search for software products that are published by IBM, you can enter IB, BM, or IBM.

### Software Catalog

8,383 Publishers 34,974 Software Products 46,563 Software Versions 58,967 Software Releases 49,222 Software Components 79,287 Signatures

Catalog Search

Search

3. Click Search.

#### Results

The search results are displayed in Catalog Search. You can drill down through the results to view more detailed information.

### Creating catalog entries

You can use the built-in functionality to add software products that are installed in your infrastructure but are not present in the IBM catalog to your custom catalog.

### Before you begin

🛐 You must have the Manage Catalogs permission to perform this task.

### Procedure

- 1. In the top navigation bar, click **Management** > **Catalog Customization**, and then click New.
- 2. In the Create Catalog Entry window, provide the publisher name, product name, and release number.

Create Catalog Entry	
Publisher Name*	Software Publisher
Product Name*	Product
Release*	2.1
	A component will be created based on the release information. It represents a discoverable software item that is displayed on reports.

- **3**. Select a condition or conditions that must be fulfilled for the software item to be discovered.
  - To create an installation package signature, select the first condition, and specify the name of the package, its version, and vendor.
  - To create a file signature, select the second condition, and specify the name of the file and its size or version. If neither the file size nor the version are relevant, select **Any size or version**.

**Tip:** If you select one condition and specify multiple files or installation packages, detection of any of them causes that the software item is discovered. If you select both conditions, at least one file and one installation package must be detected for the software item to be discovered.

Report release when the following conditions are fulfilled. If you specify two conditions, they both must be accomplished.

The following installation package is found:

Name*	Version	Vendor	
Package	1		Remove
Name*	Version	Vendor	
Package_1	2	Vendor	Remove Add
The following file is found:			
Name*	With		
file.exe	Any size or version 💌	Remove Add	

If you select both conditions, at least one installation package and one file must be detected to report the release.
Submit

4. To save the catalog entry, click Submit.

### **Editing catalog entries**

You can use the built-in catalog management functionality to edit publishers, software products, and releases that exist in your custom catalog.

### Before you begin

🚊 You must have the Manage Catalogs permission to perform this task.

### About this task

**Restriction:** When you edit the name of a publisher, product, version or release you cannot change it to a name that already exists in the custom catalog.

### Procedure

- 1. To edit a publisher that exists in your custom catalog:
  - a. In the top navigation bar, click **Management** > **Catalog Customization**.
  - b. In the left pane navigation tree, search for the name of the publisher and click it.
  - c. Edit the name and add the website address of the publisher, and click Save.

🚈 ᡖ Software Publisher 🛓 🛱 Product	Edit Publisher	
🛓 🖻 Product 2	Name*	Software Publisher
🛓 🖻 Product 2.1 🛓 🌄 Product 2.1	Website	Save

- 2. To edit a software product or release that exists in your custom catalog:
  - a. In the top navigation bar, click **Management** > **Catalog Customization**.
  - b. In the left pane navigation tree, search for the name of the software product, its version, or release, and click it.

<ul> <li>Software Publisher</li> <li>Product</li> </ul>	Edit Software Product	
📥 🖻 Product 2	Name*	Product
الله الله Product 2.1 الله الله الله Product 2.1 الله الله Signature		Save

c. Edit the details of the entry, and click **Save**.

### **Deleting catalog entries**

You can use the built-in catalog management functionality to delete entries from your custom catalog.

### Before you begin

1 You must have the Manage Catalogs permission to perform this task.

### Procedure

- 1. In the top navigation bar, click **Management** > **Catalog Customization**.
- 2. In the left pane navigation tree, search for the entry that you want to delete.
- **3**. Click the entry that you want to remove from your custom catalog, and click **Delete**.

**Important:** You can delete an entire hierarchy, that is a publisher, software product, version, release, component, and signature simultaneously. However, you cannot delete multiple entries, for example multiple publishers, at the same time.

### Creating signatures from package data

You can use the scanned file data to amend your custom catalog. You can add signatures for software products that are installed in your infrastructure but are not present in the IBM catalog. You identify the product name, or another piece of information that can be used to identify the software and add the signature.

### Before you begin

You must have the View Endpoints and Manage Catalogs permissions to perform this task.

### Procedure

- 1. Log in to Software Use Analysis.
- 2. In the top navigation bar, click **Reports** > **Package Data**.
- **3**. To filter the report data, click **Configure View** and specify the appropriate filtering options.

Configure View	
Columns Computer	
<ul> <li>Computer Name</li> <li>Data Source Name</li> <li>Last Seen</li> <li>Operating System</li> <li>Registry Data</li> </ul>	DNS Name IP Address Computer ID
<ul><li>✓ Name</li><li>✓ Version</li><li>✓ Vendor</li></ul>	<ul><li>✓ Description</li><li>✓ Type</li></ul>
Filters Include registry data which match all  of the followin +	g conditions:
	Submit Cancel

4. In the **Name** column, look for the location where the missing software title is installed. Click the arrow on the right from the **Name** of the file that you want to use as a signature, and click **Create Signature**.

• (Base Report) -	Save	Save As	Schedule		CSV	B PDF		
Computer Name	Last See	ı		Na	me			Version
NC046213	about 4 ho	ours ago		IBI	M 32-bit SDK	(for Java 2	2, v5.0	5.0
NC046213	about 4 ho	ours ago		IBI	M 32-bit SDK	(for Java 2	2, v5.0	5.0
VMW009128109094	about 4 ho	ours ago		IBI	M 64-bit Run	tim <u>Cre</u>	ate Signatu	<u>ıre</u>
VMW009128109094	about 4 ho	ours ago		IBI	M 64-bit Run	time Envir	onment for	6

5. In the Create Catalog Entry window, provide the publisher name, product name, and release number.

Create Catalog Entry							
Publisher Name*	IBM	IBM					
Product Name*	IBM 32-bit SDK for	IBM 32-bit SDK for Java 2, v5.0					
Release*	5.0	5.0					
	A component will b software item that	A component will be created based on the release information. It represents a discoverable software item that is displayed on reports.					
Report release when the following installation	owing conditions are ful package is found:	filled. If you specify two conditions	s, they both must be ad	ccomplished.			
Name*	Version	Vendor					
IBM 32-bit SDK for Jav	5.0	IBM	Remove	Add			
The following file is found	d:						
Name*	With	Damaya Add					
	Any size or version	Remove Add					

If you select both conditions, at least one installation package and one file must be detected to report the release.

Submit

**Tip:** The most efficient signatures are file-based signatures with a constant size that is different for each release, or signatures that are based on registry entries where a wildcard (\*) can be used. You can use a wildcard in the **Name**, **Version**, and **Vendor** fields for a package. A wildcard represents any string and can be combined with other characters. For example, you might use IBM \* SDK for Java<sup>TM</sup>, 5.\*, \* for the name, version, and vendor.

6. To save the catalog entry, click **Submit**.

**Important:** If you create an entry that exists in the software catalog an informational message is displayed, and both signatures are saved in the catalog.

### Results

You added a software signature to your custom catalog. The signature can now be used to detect software or its usage.

### Creating signatures from scanned file data

You can use scanned file data to amend your custom catalog. You can add signatures for software products that are installed in your infrastructure but are not present in the IBM catalog. You identify the file name, or another item of information that can be used to identify the software and add the signature.

### Before you begin

You must have the View Endpoints and Manage Catalogs permissions to perform this task.

### Procedure

- 1. Log in to Software Use Analysis.
- 2. In the top navigation bar, click **Reports** > **Scanned File Data**.
- **3**. To filter the report data, click **Configure View** and specify the appropriate filtering options.

Configure View		
Columns		
Computer		
Computer Name	DNS Name	
Data Source Name	IP Address	
🗹 Last Seen	Computer ID	
Operating System		
Scan Data		
File Path	Size	
🗷 File Name	File Version	
Filters		
Include scanned file data which match all 🖵 of the fol	owing conditions:	
+		
		Submit Cancel

- a. Optional: Select the **Recognized** and the **Caused Detection** check boxes to add two columns to the view of scan data.
  - The **Recognized** column shows whether the file was recognized as part of an existing signature. If the value is true, the file meets one or all conditions of the signature.
  - The **Caused Detection** column shows whether the file contained enough information to cause detection of the related software.
- 4. Optional: In the **File Path** column, look for the location where the missing software title is installed.
- 5. Click the arrow on the right from the File Name that you want to use as a signature, and click Create Signature.

(Base Report) -	Sav	/e Save As	Schedule	CS\	D PDF				
Computer Name Last Seen			File Path		File Name		е		
VMW009128109094		about 5 hours ago			C:\airgap		BESAirgapTool.exe	~	
VMW009128109094		about 5 hours ago		C:\cygwin\bin		a2p.exe	Create Signature		
VMW009128109094		about 5 hours ago			C:\cygwin\bin		addftinfo.exe		_
VMW009128109094		about 5 hours ago			C:\cygwin\bin		arch.exe	~	
VMW009128109094		about 5 hours ago			C:\cygwin\bin		ascii.exe	~	

6. In the Create Catalog Entry window, provide the publisher name, product name, and release number.

Create Catalog Entry				
Publisher Name*				
Product Name*				
Release*	The release should use the following format: number.text. For example: 6.3a.			
	A component will be created based on the release information. It represents a discoverable			

software item that is displayed on reports.

Report release when the following conditions are fulfilled. If you specify two conditions, they both must be accomplished. The following installation package is found:

Name*	Version	Vendor		
			Remove	Add
The following file is found:				
Name*	With	Size		
BESAirgapTool.exe	Size (in bytes)	1850304	Remove	
Name*	With	Version		
BESAirgapTool.exe	Version	• 9.0	Remove	Add

If you select both conditions, at least one installation package and one file must be detected to report the release.

7. To save the catalog entry, click Submit.

**Important:** If you create an entry that exists in the software catalog, an information message is displayed, and both signatures are saved in the catalog.

8. To make the signatures available for software detection, click **Reports** > **Import Now**, or wait for a scheduled import.

### Results

You added a software signature to your custom catalog. The signature can now be used to detect software or its usage.

### Viewing catalog audits

You can display a list of all changes that were made to the content of your customized catalog. The changes include creating an entry, modifying an existing entry, and deleting an entry. You can add, remove, and sort the report columns, and apply filters.

### Procedure

- To display a list of changes to customized catalog content, click Reports > Catalog Audit. In this view, you can see information about customized catalog entries that were created, modified, and deleted.
- 2. Optional: You can resize and sort the report columns by clicking and dragging. You can also customize the type of information displayed. To add or remove columns, and to apply filters, use the **Configure View** feature.
- 3. To view a detailed report for an item, click one of the items in the Action list.

### Advanced catalog management

You can use the catalog management functionality that is available in Software Use Analysis to create your custom software catalog. However, this functionality cannot be used to create complex signatures. If you want to create such signatures, use Software Knowledge Base Toolkit.

### Software model

Software items can be classified into two software types: software products and components. In Software Knowledge Base Toolkit, for all those types, you can define software hierarchies, which consist of the parent product level, versions, and releases.

### Software types

The software types into which you can classify software items that are stored in the knowledge base differ in terms of licensing attributes and the types of dependencies that can be defined for them. The software type determines the role that the software item can play in relation to other items.

#### Software product

A logical unit of software packaging and sharing that has a managed development and maintenance lifecycle and customer visible attributes. It can be a collection of components and other products whose licensing may be dependent on the licensing of the product as a whole.

#### Component

A unit of software, which cannot be offered and licensed independently of other software items. It cannot be installed separately but it can be detected as installed or running on computer systems by means of its own signatures. It can be assigned to products and shared between many different product definitions.

The structure of those items in the knowledge base is hierarchical - components can be assigned to software products and products can be bundled into more complex products. A graphic representation of the structure is shown in the figure below. Many components can be assigned to one product, and that the same component can be assigned to many products. Similarly, many products can be assigned to one product, and one product can be shared between many products. The software item to which one or more other items are assigned is referred to as the enclosing software item.



*An example of a structure in which two products are bundled* **Product** 

### Software levels

The following tables present terminology differences between Software Knowledge Base Toolkit and Software Use Analysis.

Table 2. Differences in software hierarchy

Software Knowledge Base Toolkit	Software Use Analysis	Description
Product	Software product	It is the root of the hierarchy. It groups all the versions of a software item. Some of the attributes that are specified for the product are inherited by subordinate levels of the hierarchy. Every software hierarchy can contain only one parent product.
Version	Software version	It is a separately licensable software item immediately subordinate to the parent product. It can group one or more releases.
Release	Software release	It is a separately licensable software item immediately subordinate to an item at the version level. It can only be subordinate to one version.

Table 2. Differences in software hierarchy (continued)

Software Knowledge Base Toolkit	Software Use Analysis	Description
Variation	Software release	It is a modification of a release (for example, a patch or a fix pack) which can be separately identified during software scans and influences the discovery of the release to which it is subordinate. It cannot be licensed individually. Variations are converted into software releases during data import from Software Knowledge Base Toolkit to Software Use Analysis and some precision is lost at that stage.

Table 3. Differences in component-related information

Software Knowledge Base Toolkit	Software Use Analysis
Product component	x
Component version	x
Component release	Software component
Component variation	
# *Graphical representation of changes in the software model* **IBM software model**



#### Independent Software Vendor model



# Software Knowledge Base Toolkit signatures supported in Software Use Analysis

In Software Knowledge Base Toolkit, there are eight types of signatures that can be defined for software items and used to detect those items on computer systems. Five of them are supported in Software Use Analysis. Every signature depending, on its type and function, can be classified as a recognition signature, a monitoring signature, or a signature used both for recognition and monitoring.

For more information about Software Knowledge Base Toolkit signatures, see the section Managing software signatures in Software Knowledge Base Toolkit 1.2.2 information center.

Signature type	Description	Recognition function	Monitoring function	Example		
File	A generic file that is always installed with a specific release of the item.	Yes	Yes	<ul><li>File name: <i>BBPICVU.EXE</i></li><li>Size: 474112</li></ul>		
Installation registry	A key that is recorded in the operating system installation registry or the InstallShield MultiPlatform (ISMP) registry when a software item is installed.	Yes	No	<ul> <li>Key: csm.client</li> <li>Value: Cluster Systems Management Client 1.4.0.0</li> <li>Source: operating_system</li> </ul>		
Filter	A signature that is used to identify software items that were installed on a computer system via an installation package.	Yes	No	<ul> <li>Package name: new_package</li> <li>Package version: 20.4.76*</li> <li>Package vendor: new_vendor</li> </ul>		
Windows registry	A key that is recorded in the Windows registry when a software item is installed.	Yes	No	Key: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ Windows\CurrentVersion\Uninstall\{79DA B940-B5EA-DBED-A348-B1B687CE38A6}\		
Common Inventory Technology (CIT) XML	A native representation of a signature in Common Inventory Technology.	Yes	No	Signature content: <variable export="&lt;br&gt;true" name="IS_INSTALLED"><packageinfoequal <br="" provider="os">code="SNbnr" value="Core OS 1.7.0 SNbn r" /&gt;</packageinfoequal></variable> <variable export="&lt;br" name="IS_INSTALLED">"true"&gt;<and><compare <br="" type="string">relation="ne"&gt;<vectortoscalar> <findfilepathex name="WBSFFP0601.SYS2"></findfilepathex> </vectortoscalar><valueof value=""></valueof> </compare><compare relation<br="" type="string">="ne"&gt;<vectortoscalar><findfilepathex name="WBSFFP0601.SYS2"></findfilepathex> </vectortoscalar><valueof value=""></valueof> </compare><compare relation<br="" type="string">="ne"&gt;<vectortoscalar><findfilepathex name="fabric-federation-vmm-8.0.jar"/&gt; </findfilepathex </vectortoscalar><valueof value=""></valueof> </compare></and></variable>		

Table 4. Types of signatures supported in Software Use Analysis

## Checking the version of the software catalog

Compare your software catalog version with the one that is stored in Software Knowledge Base Toolkit to ensure that you can detect the latest software releases.

## Before you begin

🔂 You must have the Manage Catalogs permission to perform this task.

- 1. Log in to Software Use Analysis.
- 2. In the navigation bar, click **Management** > **Catalog Upload**. The current catalog version is displayed on the panel.
- 3. To compare the current catalog version with the latest version that is stored in the knowledge base, open Software Knowledge Base Toolkit, and click Manage Exports > Publish Catalog. The catalog version is displayed on the panel

4. If you see any changes in the catalog, export the new catalog. To export the catalog, in the navigation bar click **Manage Exports** > **Publish Catalog** 

**Important:** You must publish the catalog in the canonical 2.0 format.

# Importing a software catalog to Software Knowledge Base Toolkit

To ensure accuracy of software inventory data, regularly check for new versions of the software catalog that is published by IBM. If a new software catalog is available, import it to Tivoli<sup>®</sup> Software Knowledge Base Toolkit and publish its content so that it is available for Software Use Analysis.

## Before you begin

Xou must have the Manage Catalogs permission to perform this task.

The following procedure is relevant if you maintain your custom catalog in Software Knowledge Base Toolkit. If you use the simple catalog management functionality that is available in Software Use Analysis, import the software catalog directly into Software Use Analysis. For more information, see: "Updating a software catalog" on page 20.

## About this task

Import of the software catalog into Software Knowledge Base Toolkit is time-consuming. If it is possible, import the catalog during a less busy period.

## Procedure

- 1. Download the software catalog and save it on your computer.
- 2. From the IBMSoftwareCatalog\_canonical\_2.0\_form\_date.zip file that you downloaded, extract the XML file with the canonical 2.0 catalog.

**Important:** After you extract the catalog file, ensure that the IBMSoftwareCatalog\_canonical\_2.0\_form\_date.zip contains only the charge unit data and part numbers file. You will have to upload this compressed files to Software Use Analysis.

- 3. Log in to Software Knowledge Base Toolkit.
- 4. From the navigation bar, select Manage Imports > Canonical XML Document.
- 5. Click New Import.
- 6. Choose the mode of importing the catalog:
  - If you do not maintain your own content that you want to merge with the imported information, select **Quick mode**.
  - If you maintain your own content that you want to merge with the imported information, select **Advanced mode**.
- 7. Provide the reason for importing the catalog.
- 8. Browse for the catalog file and click **OK**. You must wait for the import to complete.



## What to do next

After you import the IBM software catalog and customize its content, you must publish it in Software Knowledge Base Toolkit so that it can be imported to Software Use Analysis.

## Publishing software catalog in Software Knowledge Base Toolkit

When you import a new IBM software catalog into Software Knowledge Base Toolkit and customize it, you must publish the catalog so that it becomes available for Software Use Analysis.

## Before you begin



A You must have the Manage Catalogs permission to perform this task.

## About this task

When you are importing a software catalog from Software Knowledge Base Toolkit, you must upload charge unit data and part numbers file separately to Software Use Analysis to properly discover software.

- 1. Log in to Software Knowledge Base Toolkit.
- 2. From the navigation bar select Manage Exports > Publish Catalogs.
- 3. Select Canonical 2.0 (for Software Use Analysis 2.0) and click Publish.

Publish Catalog

#### **Publish Catalogs**

Use this window to publish the most recent version of knowledge base content to software catalogs that will be available to other Published Catalog Attributes

Knowledge base data version: 63429

There are no published catalogs available.

#### Publish Catalog

Select the format of catalogs to be published:

🔲 Canonical 1.0 (for Tivoli Asset Management for IT and IBM Tivoli Asset Discovery for Distributed 7.2.2 and above)

IBM Tivoli Asset Discovery for Distributed 7.2.1 and lower

Canonical 2.0 (for Software Use Analysis 2.0)

Publish

- 4. Log in to Software Use Analysis.
- 5. In the top navigation bar, click **Management** > **Catalog Servers**.
- **6**. To automatically import the software catalog from Software Knowledge Base Toolkit, in the upper left corner of the top navigation bar, click **Update Catalog**.
- 7. To upload charge unit data and part numbers file, click **Management** > **Catalog Upload**.
- 8. Browse for the IBMSoftwareCatalog\_canonical\_2.0\_form\_date.zip file, and click Upload.

**Important:** The IBMSoftwareCatalog\_canonical\_2.0\_form\_date.zip file contains the software catalog file, charge unit data, and a part numbers file. Before you upload the compressed file to Software Use Analysis, remove the catalog XML file. The compressed file that you upload should contain only the charge unit data and part numbers file.

#### What to do next

You published the software catalog and updated it in Software Use Analysis. Then, you uploaded charge unit data and part numbers file. To generate an accurate report, import software scan data from IBM Endpoint Manager into Software Use Analysis.

## Managing publishers in Software Knowledge Base Toolkit

Every software item in the software catalog must be associated with a software publisher. Managing publisher entries in Software Knowledge Base Toolkit involves creating new publishers, modifying their profiles, and associating software items with them.

## About this task

The following procedure is relevant if you want to create complex signatures and manage the content of the catalog in Software Knowledge Base Toolkit. However, you can create simple signatures and maintain your custom catalog in Software Use Analysis by using the built-in simple catalog management functionality.

## Procedure

If the information related to a particular software publisher that is contained in the software catalog does not reflect your infrastructure:

- 1. Find information about the publisher.
- 2. If the publisher exists in the software catalog, edit information that is associated with the particular publisher:
  - Modify publisher details.
  - Manage publisher-related software.
  - · Reassign software to another publisher.
  - Manage publisher aliases.
- 3. If the publisher does not exist in the software catalog, add the publisher.

## Managing software in Software Knowledge Base Toolkit

Software items include software products and components. Their versions, releases, and variations are organized into hierarchies. Managing those items in Software Knowledge Base Toolkit involves creating new items, modifying their profiles, and specifying signatures for them. All software items must be assigned to software publishers. In most cases, before you can manage software entries you must run a search of Software Knowledge Base Toolkit for those entries.

## Before you begin

Before you start managing software, become familiar with the software model and software relationship types.

## About this task

The following procedure is relevant if you want to create complex signatures and manage the content of the catalog in Software Knowledge Base Toolkit. However, you can create simple signatures and maintain your custom catalog in Software Use Analysis by using the built-in simple catalog management functionality.

#### Procedure

If the information related to a particular software item that is contained in the software catalog does not reflect your infrastructure or you would like to customize that information:

- 1. Find the existing software entry.
- 2. If the software entry exists in the software catalog, edit the information that is associated with the particular software item:
  - Edit details in the software entry profile.
  - Customize software aliases.
  - Manage product identifiers.
  - Manage licensing attributes.
  - View products to which the software item belongs.

- Add a level to the software hierarchy.
- Manage components that are assigned to the software item.
- Manage bundled products.
- View replacement relationships between software items.
- Reassign a software hierarchy to another publisher.
- Rename a software hierarchy.
- **3**. If the software entry does not exist in the software catalog, add the software entry.
- 4. If some data related to a particular level of a software hierarchy is no longer valid or relevant, delete the software entry.

**Restriction:** Entries that are marked as deleted are exported to the catalog as deleted and are not displayed in the default search results. If the data that applies to those entries is still relevant, you can undelete the entries. For data consistency reasons, you cannot undelete individual software entries unless no parent entries are defined for them in the hierarchy tree. Every time you undelete an item in the hierarchy, all the items located above it in the same branch are also undeleted.

## Managing signatures in Software Knowledge Base Toolkit

Signatures are file names, registry entries, and other types of information that are unique to a particular software item and can be used to identify it. Signatures can be manually added to Software Knowledge Base Toolkit or generated in the process of mining data that is obtained through scans of computer systems on which the software items are installed or running.

## Before you begin

Before you start managing software signatures, become familiar with signature types.

## About this task

The following procedure is relevant if you want to create complex signatures and manage the content of the catalog in Software Knowledge Base Toolkit. However, you can create simple signatures and maintain your custom catalog in Software Use Analysis by using the built-in simple catalog management functionality.

## Procedure

If a software item that you have installed in your infrastructure is not detected:

- 1. Find a signature that is defined for an existing software item.
- 2. If the signature exists in the software catalog:
  - View the details of the signature.
  - Edit the signature.
- 3. If the signature does not exist in the software catalog, add the signature.

**Important:** If a signature is no longer used to effectively detect a software item, you can delete it.

## Adding signatures to an existing software title based on raw data

If the software that was not detected in Software Use Analysis exists in the software catalog, you must identify the file, registry entry, or other information that can be used to identify the software and add the signature.

## Before you begin

🙀 You must have the View Endpoints permission to perform this task.

## About this task

The following procedure is relevant if you want to create complex signatures and manage the content of the catalog in Software Knowledge Base Toolkit. However, you can create simple signatures and maintain your custom catalog in Software Use Analysis by using the built-in simple catalog management functionality.

## Procedure

- 1. Log in to Software Use Analysis.
- 2. If you want to add a detection signature:
  - a. In the top navigation bar, click **Reports** > **Scanned File Data**.
  - b. To filter report data to the computer on which the missing software is installed, click **Configure View** and specify appropriate filtering options.

Configure View		
Columns Computer		
Computer Name	DNS Name	
Data Source Name	IP Address	
🗹 Last Seen	Computer ID	
Operating System Scan Data		
File Path	Size	
🗷 File Name	V File Version	
Filters		
Include scanned file data which match a	II 💌 of the following conditions:	
	Subm	nit Cancel

c. In the **File Path** column, look for the location where the missing software title is installed, and choose the file that you want to use as a signature.

• (Base Report) - Sa	ve Save As Schedule 🗅 CS	V D PDF	
Computer Name	Last Seen	File Path	File Name
NC042208	about an hour ago	/IBM Software/MQ	IBM_WebSphere_MQ_Server.7.5.0.swtag
NC042208	about an hour ago	/IBM Software/MQ	IBM_WebSphere_MQ_Managed_File_Trai
NC047055	about a month ago	/IBM Software/MQ	IBM_WebSphere_MQ_Server.7.5.0.swtag
NC047055	about a month ago	/IBM Software/MQ	IBM_WebSphere_MQ_Managed_File_Trai

- 3. If you want to add a usage signature:
  - a. In the top navigation bar, click **Reports** > Metering Data.

b. To filter report data to the computer on which the missing software is installed, click **Configure View** and specify appropriate filtering options.

Filters Include metering data which match all	<ul> <li>of the following conditions:</li> </ul>	
Computer Name equals	NC107073	+
		Submit Cancel

c. In the **Process Name** column, look for the process that runs the missing software product.

• (Base Report) -		Save	Save As	S Schedule	B CS	V D PDF	
Computer Name	Last Seen		Process Name		First Used	Last Used	
NC107073	about 11 hours ago		snmpdv3ne		6 months ago	about a month ago	
NC107073	about 11 hours ago		snmpmibd		6 months ago	about 11 hours ago	
NC107073	about 11 hours ago		software		6 months ago	about a month ago	
NC9128109015	20 minutes ago		sort		about a month ago	12 days ago	

- 4. Log in to Software Knowledge Base Toolkit.
- To search for the software title to which you want to add a signature, click IBM Tivoli Software Knowledge Base Toolkit > Manage Software > Find Software
- 6. Click the name of the software and then select the exact version and release of the software title.

Find Software	
<b>Find Software</b> Use this window to search the knowledge base for existing software items. Afte	r you perform the search, you can view software details.
Search Criteria	Search Results
Search by text: Existing software title ⓒ Contains ⓒ Exact match ⓒ Fuzzy	There are 1 software items found.
Software type:	Select Software
Software product C Component C Any	C Existing software title
Software level:	Download as CSV
● Product ○ Version ○ Release ○ Any	

7. From the **Signature type** list, select the type of signature that you want to create, and click **Add**.

#### Edit Software

Edit Software Software Titile

Use this window to edit software details including the signatures, aliases, and licensing attributes.

Software Hierarchy	Software Tasks
- Software Titile	Select task: Manage signatures 💽 Go
	Manage Signatures
	Add New Signature
	Signature type: File signature • Add Installation registry signature Th File signature fro CIT XML signature Windows registry signature Filter signature

- 8. Provide the name of the file that is to be used as a signature and its size.
- 9. Select the signature scope, platform, and confidence level.
- 10. Provide the reason for adding the signature and click Create.

## Results

You added a software signature that will be now used to detect software or its usage.

## Adding signatures to new software titles based on raw data

If the software that was not detected in Software Use Analysis does not exist in the software catalog, you must identify the file, registry entry, or other information that can be used to identify the software. Then you must create the software hierarchy and add the signature.

## Before you begin



You must have the View Endpoints permission to perform this task.

## About this task

The following procedure is relevant if you want to create complex signatures and manage the content of the catalog in Software Knowledge Base Toolkit. However, you can create simple signatures and maintain your custom catalog in Software Use Analysis by using the built-in simple catalog management functionality.

- 1. Log in to Software Use Analysis.
- 2. If you want to add a detection signature:
  - a. In the top navigation bar, click **Reports** > Scanned File Data.
  - b. To filter report data to the computer on which the missing software is installed, click **Configure View** and specify appropriate filtering options.

Configure View		
Columns Computer		
Computer Name Data Source Name Last Seen Operating System Scan Data	DNS Name P Address Computer ID	
<ul><li>✓ File Path</li><li>✓ File Name</li></ul>	<ul><li>✓ Size</li><li>✓ File Version</li></ul>	
Filters Include scanned file data which match +	all 💌 of the following conditions:	
		Submit Cancel

c. In the **File Path** column, look for the location where the missing software title is installed, and choose the file that you want to use as a signature.

• (Base Report) - Sa	ve Save As Schedule 🗅 CS	V DPDF		
Computer Name	Last Seen	File Path	File Name	
NC042208	about an hour ago	/IBM Software/MQ	IBM_WebSphere_MQ_Server.7.5.0.swtag	
NC042208	about an hour ago	/IBM Software/MQ	IBM_WebSphere_MQ_Managed_File_Trai	
NC047055	about a month ago	/IBM Software/MQ	IBM_WebSphere_MQ_Server.7.5.0.swtag	
NC047055	about a month ago	/IBM Software/MQ	IBM_WebSphere_MQ_Managed_File_Trai	

- **3**. If you want to add a usage signature:
  - a. In the top navigation bar, click **Reports** > **Metering Data**.
  - b. To filter report data to the computer on which the missing software is installed, click **Configure View** and specify appropriate filtering options.

Filters					
Include metering data	which match all 💽	of the following conditions:			
Computer Name	- equals	▼ NC107073	<b></b>	+	
				Submit	Cancel

**c.** In the **Process Name** column, look for the process that runs the missing software product.

• (Base Report) -		Save	Save As	s	Schedule	e CS	V	D PDF	
Computer Name	Last Seen		Process Name		First Used		Last Used		
NC107073	about 11 hours ago		snmpdv3ne		6 months ago		about a month ago		
NC107073	about 11 hours ago		snmpmibd		6 months ago		about 11 hours ago		
NC107073	about 11 hours ago		software		6 months ago		about a month ago		
NC9128109015	20 minut	tes ago		sort			ab	out a month ago	12 days ago

- 4. Log in to Software Knowledge Base Toolkit.
- 5. Check whether the software title that was not detected is in the catalog:
  - a. In the left pane, click **IBM Tivoli Software Knowledge Base Toolkit** > **Manage Software** > **Find Software**.
  - b. Search for the software title to which you want to add a signature.
- 6. If the software title does not exist in the software catalog, add it.
  - a. Click Manage Software > New Software.
  - b. Specify the name of the product.
  - **c**. Select the software publisher from the list if the publisher exists in the software catalog or create the publisher if it is not in the catalog.
  - d. Provide the reason for adding the software title to the catalog, and click **Create**.

Create Software					
Use this window to add new softwar	e items to the know	vledge base an	d associate them with	software	publishers
*Name:					
Software Titile					
Version identifier:					
Publisher:					
·		-			
Create publisher Publisher name: Software Publisher	Create				
Software type:					
Software Product 💌					
*Reason of change:					
The software was not detected.	.::				
Create Clear					

7. From the **Signature type** list, select the type of signature that you want to create, and click **Add**.

Edit Software	
Edit Software Software Titile	
Use this window to edit software details including the signatures, aliases,	and licensing attributes.
Software Hierarchy	Software Tasks
└── 🖻 <u>Software Titile</u> 💌	Select task: Manage signatures 💽 Go
	Manage Signatures
	Add New Signature
	Signature type: File signature • Add Installation registry signature fro CIT XML signature • Offware. Windows registry signature Filter signature

- 8. Provide the name of the file that is to be used as a signature and its size.
- 9. Select the signature scope, platform, and confidence level.
- 10. Provide the reason for adding the signature and click Create.

## Results

You added a new software title to the catalog and a signature that will be now used to detect the software or its usage.

## **Reports**

Reports provide detailed information about the computers in your infrastructure and the software items that are installed on these computers. You can decide what type of information you want to display by choosing the appropriate type of report. You can also customize the type and amount of information that is displayed in a report and save the report settings to reuse them.

# **Viewing reports**

You can view the reports that are generated by Software Use Analysis to monitor the software that is installed in your infrastructure and to ensure compliance with software licenses. Each report provides you with different information about your infrastructure, for example the computer groups, software installations, and the content of your software catalog.

## **Available reports**

Reports are the primary source of information about computers in your infrastructure and software that is installed on these computers. The type of report that you view depends on what information you need.

## **Saved Reports**

## Saved Reports

Saved reports provide quick access to information that is frequently used in your enterprise. You can specify filters and parameters of any report that you want to reuse and save the settings for quick reference.

## Software Inventory

#### **Inventory Exploration**

The report provides information about the software items that are installed in your infrastructure. It shows the time and frequency of use of the software items, and the contracts that are created for them. The information about a software product is structured into a hierarchy. You can drill down from the publisher of the software product to software titles, versions, releases, and components.

On each level of the software product hierarchy, you can view information about contracts to which the products are assigned. The report shows the number of software instances that are covered by contracts and the cost of acquisition and maintenance of the licenses for that product. You can use the report to efficiently manage your software inventory by monitoring the cost of software licenses and the use of the particular software products.

#### **Software Installations**

The report provides information about the computers in your infrastructure and the software items that are installed on these computers. You can use the report to get an overview of your software inventory and the time and frequency of use of the software products in your infrastructure. You can also see the signatures that were used to detect the software products.

#### Package Data

The report provides information about the packages that are installed on the computers in your infrastructure. You can find out what is the name of every package, its version, vendor, description, and type.

#### Scanned File Data

The report provides information about all files that the software inventory tool scanner found on the computers in your infrastructure. You can track every computer and find out which files were detected on a computer. You can see the location, size, and version of each file. The data from this report is used to generate other reports.

## **Unrecognized Files**

The report creates a ranking of files that are most commonly encountered in your computer infrastructure but do not produce matches for any signature. The ranking of 1000 file names is separate for each computer group. It is based on the number of computers on which the files were detected, the number of copies of a particular file, and the alphabetical order. The files are listed by name with no regard to their size or version metadata. To access such detailed information, click the file name.

You can use the report to investigate the unrecognized files and to create matching signatures, thus improving the signature coverage in your infrastructure. However, the aggregation of unrecognized scan data slows down the imports, particularly in large deployments. Thus, it is disabled by default. You can enable it by selecting the right option in the **Management** > **Unrecognized Scan Data**.

#### Metering Data

The report provides information about the use of software items that are installed on the computers in your infrastructure. You can track every computer and find out what processes it runs. You can learn when each process was used for the first and last time, and what was the total time and frequency of its use. You can also see what is the average number of runs of each process per day and what is the average run time of each process. The data from this report is used in other reports.

## License Usage

#### **IBM PVU Subcapacity**

The report shows PVU products that are eligible for subcapacity licensing. For every product, you can see the history of license consumption over the specified period, and the maximum license consumption. You can create a snapshot of this report for auditing purposes.

#### **All IBM Metrics**

The report shows all PVU and RVU products for both subcapacity and full capacity licensing. For each product, you can see the type of license, history of license consumption over the specified period, and the maximum license consumption. You can create a snapshot of this report for auditing purposes.

#### Audit Trail

The report provides information about software bundling actions, uploads and imports of the PVU table, software catalog and charge units, as well as changes to the VM managers. You can view details of each action, its type, date, and the user who performed it. You can use the report to track all actions that have influence on the information that is displayed on other reports.

## Infrastructure

#### Computers

The report provides information about each computer in your infrastructure. You can see what operating system is installed on each of the computers, what is the ID, DNS name, and the IP address of the computer. You can also find out how many software items are installed on every computer and when information about the particular computer was displayed.

## **Computer Groups**

The report provides information about computer groups that are defined in your infrastructure. The information includes the ID of the computer group, its name, and description. You can find out how many computers and subgroups are in the computer group, and what is the number of software items that are installed in that group. The report also provides information about the contracts that are assigned to a computer group, with the acquisition and maintenance cost for each contract.

#### Hardware Inventory

The report provides information about the state of agents in your infrastructure. For every computer on which an agent is installed, you can view processor details, and the number of PVUs assigned to each core. In the **Default PVU Value** column, you can see whether the number of PVUs assigned to a particular processor was based on the PVU table or a default value was used. A default value is used if a particular type of a processor is not listed in the PVU table.

## Catalog

#### Software Catalog

The report provides information about the author and content of the

software catalog. The report shows the total number of publishers, software products, versions, releases, and signatures in your software catalog.

#### Signatures

The report provides information about the software items that are installed in your infrastructure, the software catalog, and signatures. You can view information about software products, their publishers, versions, and releases. You can find out when the software catalog was created and who the author of each software record was. You can also learn when the signature was created and modified, and what its detection type is.

#### **Catalog Audit**

The report provides information about all modifications that were made to the content of your custom software catalog. For each modification, you can see detailed information about the current status of the software entity, as well as its status before and after modification.

#### Contracts

#### **Contract Usage Data**

The report provides information about the contracts that you created for the software items. You can see the relationship between the number of software products that you are entitled to use and the actual number of software instances that are used. You can use the report to eliminate unused licenses and track computers that use unlicensed instances of a software product.

## Viewing computers

You can display a list of all computers that are available in your infrastructure. You can view information about computer properties and the software that is installed on your computers. You can customize the type and amount of information that is displayed by adding, removing, and sorting the report columns, and by applying filters.

## Before you begin



🚉 You must have the View Endpoints permission to perform this task.

## Procedure

1. To display a list of all the computers in your infrastructure, click **Reports** > **Computers.** In this view, you can see information about your assets, including computer name, operating system, IP address, and the software installed.

**Note:** The date in the **Latest Scan Import** column is only updated if there are changes in the content of the scan file. If scan data is unchanged after any new scan, the Latest Scan Import column will not be updated.

- 2. To view the details report of a single computer, click one of the items in the list.
- 3. Optional: You can resize and sort the report columns by clicking and dragging. You can also customize the type of information displayed. To add or remove columns, and to apply filters, click **Configure View**.
- 4. Optional: To choose the type of report that you want to display about the selected item, in the upper-right corner click Home and select one of the following options:
  - To see computer properties and a summary of license data, click Home.

- To see information about the software that is installed on the computer and its usage, click **Software Installations**.
- To see information about all applications that are installed on the computer and their usage, click **Metering Data**. The report lists all applications, whether they were matched by the signatures in the catalog or not.
- To see information about registry keys, Red Hat Package Manager (RPM) files, and AIX<sup>®</sup> packages, click **Package Data**.
- To see information about all files that were detected on the computer, click **Scanned File Data**.

## Viewing metering data

The data that is displayed in the metering data report is obtained from monitoring the process tables of endpoints. It can be used to create and diagnose signatures. You can view detailed information about all applications that are installed, either in your entire infrastructure, or on a single computer in that infrastructure. The applications that are listed in the metering data report are matched against signatures to provide confirmed usage data.

## Before you begin

Xou must have the View Raw Data permission to perform this task.

## Procedure

- 1. To see a list of all applications that are installed on all computers in your infrastructure, click **Reports** > **Metering Data**.
- 2. Optional: You can resize and sort the report columns by clicking and dragging. You can also customize the type of information displayed. To add or remove columns and to apply filters, click **Configure View**.
- **3**. To filter the information to the details report of a single computer, click one of the items in the **Computer Name** column. In this view, you can see computer properties and a summary of license data.

## Results

The information that is displayed in the metering data report is constrained by several factors. The information that is listed in the **First Used** column can be constrained by the date on which the administrator of Endpoint Manager enabled the tracking of application usage on the computer. The **Last Used** column is constrained by the last time the computer reported to Endpoint Manager and had its data that is imported to Software Use Analysis. If a program that you expected to see in the metering data report is not listed, its usage cannot be detected by a signature.

## Viewing contract usage reports

Contract usage reports are based on the contracts that you create for software licenses. The report shows the number of software instances that you are entitled to under a license and the actual number of instances that are used. You can use the report to reduce spending on unused licenses, and to track computers that use unlicensed instances of a software product.

## Before you begin

- 🔂 You must have the Manage Contracts permission to perform this task.
- You must create contracts for the licenses that you have for software products.

## Procedure

- 1. In the top navigation bar, click **Reports** > **Contract Usage Data**.
- 2. To see details of a contract, click the contract name.

## Viewing software inventory and usage

You can view detailed information about the software items that are installed in your infrastructure and the time and frequency of use for that software.

## Before you begin

1 You must have the View Endpoints permission to perform this task.

## **Procedure**

- 1. To see a list of all software items that are installed on all computers in your infrastructure, click **Reports** > **Software Installations**.
- 2. To filter the information down to the details report of a single software item that is installed on a computer, click the link in the Details column. This view shows information about the software title, usage time and frequency, and the signatures that were used to detect the software item.

#### Results

The page with the details of a software item shows information about the signatures that were used to detect that software. The signatures are accompanied by an icon that indicates whether the signature matched the data.

- V All or part of the signature matched the software item.
- 👗 All or part of the signature did not match the software item.

Other information includes excerpts of raw data from the viewed computer that was used to match the signature. If you believe that the software was erroneously detected, you can use that data to examine how the signature was evaluated. You can also view the installation path of matched software that has file-based signatures. If a software item uses a complex signature, you can view the hierarchical structure of the signature to better understand the process of detection.

## Exploring software inventory

Software items are structured into hierarchies that consist of the software publisher, software title, its version, release and components. You can drill down through the hierarchy to gather more detailed information about the software items that are installed in your infrastructure.

#### Before you begin



🚉 You must have the View Endpoints permission to perform this task.

#### About this task

Information about a software product is structured into a hierarchy that can be drilled down from the publisher of the software product to software titles, versions, releases, and components. On each level of the software product hierarchy, you can view information about contracts that the product is assigned to. This information includes the number of software instances that are covered by the contracts, and the cost of the acquisition and maintenance of the licenses for that product. You can use the report to efficiently manage your software inventory by monitoring the cost of software licenses and the use of the software products.

## Procedure

- 1. To see the list of publishers of the software items that are installed in your infrastructure, click **Reports** > **Inventory Exploration**.
- 2. To see software titles by the publisher that are installed in your infrastructure, click a link in the **Publisher** column.
- **3**. Drill down through the software hierarchy by browsing the aggregated data of publishers, software titles, versions, releases and components.

## Viewing audit trail

You can display a list of all actions that influence the information that is displayed on the reports and check when they were performed and by whom. The tracked actions include modifications to software classification, uploads and imports of the PVU table, software catalog and charge units, as well as changes to the VM managers.

## Before you begin

1 You must have the View Audit Trail permission to perform this task.

## Procedure

- 1. To display a list of user actions, click **Reports** > **Audit Trail**.
- 2. Optional: You can resize and sort the report columns by clicking and dragging. You can also customize the type of information displayed. To add or remove columns, and to apply filters, click **Configure View**.

## **Results**

The audit trail contains information about the following actions:

- Modifications to the software classification: confirming and changing the default classification, sharing an instance between products, including an instance in and excluding it from pricing calculations
- Uploads: successful or failed upload of the software catalog, charge unit data, PVU table
- Imports: successful or failed import of the software catalog, charge unit data, PVU table
- VM managers: adding, modifying, and deleting VM managers

## Managing reports

You can manage the reports that are generated by Software Use Analysis so that they suit your needs. You can customize the reports by applying filters and saving your personal settings for future use. You can also export the reports to a CSV or PDF file, and schedule report emails so that specified recipients are notified when important events occur.

## Applying report filters

The type of information that is displayed on all reports is set by default. If you find the information either insufficient or excessive, you can apply report filters to adjust the amount of information to your needs.

## Procedure

- 1. In the top navigation bar, click **Reports** and select the report that you want to view.
- 2. In the upper right corner, click Configure View to access the filtering options.

		2870 rows (al	l data)	🖀 Configure View
Total Run Time	Total Runs	Average Runs per Day	Average Run Time	
165 days, 17:08:37	1	0.006		165 days, 17:08:37
165 days, 17:08:37	1	0.006		165 days, 17:08:37
165 days, 17:08:37	1	0.006		165 days, 17:08:37

**3**. To add a filter, click the plus sign (+).

Tip: Click the trash can to delete a filter.

4. Select the filter operator. The filter operators that are available depend on the type of column header you are filtering on.

## Filters

Include software installations which match all 🚽 of the following conditions:

Total Run Time	-	equals 💽	<b></b>	+		
		equals				
		does not equal				
		less than				
		less than or equal to			Submit	Cancel
		greater than				
		greater than or equal to				

- 5. Enter the value that you want to use as a filter.
- 6. If you are adding multiple filters, select **all** or **any** from the drop-down list. If you select **all**, then only items that meet every condition are shown. If you select **any**, items must meet only one of the conditions to be shown.
- 7. Click **Submit**.

## Exporting reports to a file

If you need a hardcopy of a report that is generated in Software Use Analysis you can export the report to a CSV or PDF file. You can also use the CSV file to create charts and statistics that are based on the information from the report.

- 1. In the top navigation bar, click **Reports** and select the report that you want to view.
- 2. To export the report into a file, click one of the following toolbar buttons:



## Saving report settings

You can specify the report filters and parameters that you want to reuse and save the report settings. You can view the exact type of information that you need, or send a saved report to other users of Software Use Analysis.

## Creating saved reports:

You can save the report settings to access the exact information that you need.

## Procedure

- 1. To save a report, click **Reports** and select the type of report that you want to save.
- 2. Optional: Resize and sort the report columns by clicking and dragging. Adjust the report view by adding or removing columns and applying filters. To customize the report view, click **Configure View**.
- **3**. In the upper left corner of the window, click **Save As**. Specify the name of the report that you want to save. Select the **Private** check box if you do not want other users of Software Use Analysis to view the report.

## Viewing and sending saved reports:

You can reuse the saved reports and send them to other users of Software Use Analysis.

- To see the list of all saved reports, click **Reports** > **Saved Reports**.
- To view a saved report, click the name of a saved report in the Name column.

Delete 2 rows	
Name	User Name
Metering Data - customized report	Administrator
Scanned File Data - customized report	Administrator

- To rename the report or modify its privacy status, click the row in which the saved report is located. In the **Edit Report** section, type the new name of the report. You can also change the privacy status of the report by selecting or clearing the **Privacy** check box.
- To send the report to other users of Software Use Analysis by email, click the row in which the saved report is located. Select the **Report Subscription** check box in the bottom of the window. Specify the report format and recipient email address. You can also specify the starting date and frequency of sending the report.

Edit Report					
Name*	Metering Data - customized report				
	Private				
Report Subscription					
Format*	PDF -				
Page Size	Letter				
Orientation					
	Portrait				
	Candscape				
Email*	mame@example.com				
	Separate multiple recipients with a comma.				
Start Time	11/06/2013 09:47AM				
Frequency	Weekly				
Every	1 week(s) on				
	Su Mo Tu We Th Fr Sa				
Language*	English				
	Save				

## Scheduling report emails

You can schedule report emails so that reports are automatically sent to the specified recipients by email. This option is especially useful if a person does not work with Software Use Analysis or is not familiar with the application, but must have access to the reports.

## Before you begin

- You must configure mail notifications.
- You must save the report that you want to send.

## Procedure

- 1. Open the report that you want to send.
- **2.** To schedule a report export, click **Schedule**. The Schedule Report Export window opens.
- 3. Select the file format of the report and adjust the page settings as necessary.
- 4. Specify the email address to which you want to send reports. If you want to specify multiple recipients, separate their email addresses with commas.
- 5. Define the start time and frequency of sending the reports.
- 6. Select the language of the reports.
- 7. To save the export schedule, click **Save**.

# Working with PVU and RVU reports

You can view PVU and RVU MAPC (Managed Activated Processor Cores) full capacity and subcapacity reports. You can recalculate PVU and RVU MAPC values, and generate snapshots of PVU and RVU MAPC license consumption.

## **PVU and RVU license usage reports**

The report shows a list of all the software products included in PVU and RVU MAPC (Managed Activated Processor Cores) reports. You can see the license type and usage for each product, and the history of license consumption over the specified time period.

The software products in the report are divided according to license type. You can drill down through the report for PVU and RVU MAPC reports to access the full capacity or subcapacity reports for a product. You can also view a computer report that shows details of servers and computers on which the products are deployed. The information in the report columns and the calculations on which the information is based are explained for each of the reports in the following tables.

Table 5. Columns in PVU and RVU MAPC license usage reports

Name of the column	Description
Product	Name of the product.
License Type	Type of license.
License Peak Value	The maximum PVU or RVU MAPC values that are used by the product over the specified time period.
License Peak Value History	Graphic representation of the history of license consumption over the specified time period.

## Table 6. Columns in PVU and RVU MAPC full capacity reports

Name of the	
column	Contents
Server Name	Name of the server.
Processor	Details of the processor.
CPU Core Full Capacity	The total count of physical processor cores for the server on which the product is deployed.
PVU Full Capacity	PVU only. The total count of PVUs for the server on which the product is deployed.

Table 7. Columns in PVU and RVU MAPC subcapacity reports

Name of the column	Description
Server Name	Name of the server.
Processor	Details of the processor.
CPU Core Subcapacity	The number of processor cores that are used by a product.
CPU Core Subcapacity Limit	The total count of physical processor cores for the server on which the product is deployed, counted at the time when subcapacity is maximal. Maximal subcapacity is when the number of cores that are used by the product is the highest.
PVU Subcapacity	PVU only. The number of PVUs that are used by a product.
PVU Subcapacity Limit	PVU only. The total count of PVUs for the server on which the product is deployed, counted at the time when subcapacity is maximal. Maximal subcapacity is when the number of cores that are used by the product is the highest.

Table 8. Columns in the PVU and RVU MAPC computer reports

Name of the column	Description
Computer	Name of the computer that uses the product.
OS	Operating system of the computer.
IP Address	IP address of the computer.
Product Version	Software product version.
Component	Product component that was found on the computer.
Path	Path to the software that was found on the computer.
Last Seen	Last date the software was found.

Apart from the license usage data, the following additional information is displayed on the detailed subcapacity report for a particular product:

#### **Time Range**

Specifies the time frame for which subcapacity data was calculated. Data from the products that were not installed within this time range is not included in the report.

## License Peak Value Time

The day and time when the highest PVU value was recorded for a software product within the specified time range.

## Viewing PVU and RVU consumption

You can view a list of all software products included in PVU and RVU MAPC (Managed Activated Processor Cores) reports. You can see the license type and usage for each product, and the history of license consumption over a specified time period. You can drill down through a report to view details of servers and computers that are used by each software product.

## Before you begin

1 You must have the View License Metrics permission to perform this task.

- 1. You can view full and subcapacity reports, or only PVU subcapacity reports:
  - To view a list of full and subcapacity products, click Reports > All IBM Metrics.
  - To view a list of PVU subcapacity products, click Reports > IBM PVU Subcapacity.
- 2. Optional: You can resize and sort the report columns by clicking and dragging. You can also customize the type of information displayed. To add or remove columns, apply filters, or set the time range for the report, click **Configure View**.
  - To specify the time range for which you want to view the report, customize one of the available options in the Time Range section.

Time Range	
Last 0 da	ays 💌
0 10/29/2013	to now
0 10/29/2013	to 10/29/2013

**3**. To recalculate the PVU or RVU MAPC value for a product, click **Recalculate**. The option is enabled only if the PVU or RVU MAPC values need to be recalculated. If values need to be recalculated, you can see a red square in the **License Peak Value** column for a product. After you initiate the recalculation process, the progress is displayed below the top menu bar.

Product	License Type	License Peak Value	License Peak Value History		
			09/09/2013	-	09/12/2013
IBM WebSphere MQ	PVU Subcapacity	<b>4</b> 00	•		

- 4. To view a PVU full capacity, RVU MAPC full capacity, PVU subcapacity, or RVU MAPC subcapacity report for a product, click the product name in the **Product** column.
- 5. To view a computer report for a product, click the computer name in the **Server Name** column.

## Creating snapshots of PVU and RVU consumption

You can create a snapshot of the **IBM PVU Subcapacity** and **All Metrics** report, and store it as a record of PVU and RVU MAPC (Managed Activated Processor Cores) consumption in your enterprise over a particular period. You can create the snapshots with any frequency that is suitable for your purposes.

## Before you begin

You must have the View License Metrics and View Audit Trail permissions to perform this task.

## Procedure

- 1. Open the IBM PVU Subcapacity or All IBM Metrics report.
- 2. Optional: To configure the period for which you want to create the snapshot, click **Configure View**, and then select the time range.

## Tip:

- If you select **Last**, and provide a number of days, for example 5, the report contains entries from the last five days until the current date and exact time. Entries from five days and 2 hours ago are not included.
- If you specify a period from a particular date until now, the reports contain entries from that date starting at 00:00:00.
- If you specify a period from a date to a date, the reports contain entries from the first date starting at 00:00:00 to the second date ending at 23:59:59.
- **3**. Optional: To limit the number of products that are included in the snapshot, click **Configure View**, and then specify the name of the product in the Filters section.

Time Range					
Last 0 days	•				
0 10/29/2013	to now				
0 10/29/2013	to 10/29/2013				
Filters Include subcapacity whi	ich match all 💌 of the	following conditions:			
Product	equals	IBM Tivoli Storage Mar	÷ +		
				Submit	Cancel

4. To create the snapshot, in the top navigation bar, click Audit Snapshot.

#### **Results**

The csvreport.zip file is downloaded to your computer. It contains the following files:

- audit\_trails.csv it contains information about software classification actions, uploads and imports of the PVU table, software catalog and charge units, and changes to the VM managers.
- checksums.txt it contains checksums that are used to verify whether any CSV files from the audit snapshot were tampered with. On Linux computers, the following command can be used to verify the report CSV files.

sha256sum -c checksums.txt

- data\_condition.txt it contains information about the period that is covered by the snapshot, the version of the PVU table and software catalog, dates of the last aggregation, and whether recalculation was required at the time of creating the snapshot.
- part\_numbers.csv it contains information about part numbers that were uploaded to Software Use Analysis when the snapshot was created.
- pub\_key.pem it contains a public key file that can be used to verify the signature.rsa file against the checksums.txt file.
- pvu\_full\_capacity.csv the file is generated only when you create a snapshot of the **All IBM Metrics** report. It contains information about software products, their PVU consumption under full capacity license, and details of the computers on which the software is installed.
- pvu\_sub\_capacity.csv it contains information about software products, their PVU consumption under subcapacity license, and details of the computers on which the software is installed.
- rvu\_full\_capacity.csv the file is generated only when you create a snapshot of the **All IBM Metrics** report. It contains information about software products, their RVU MAPC consumption under full capacity license, and details of the computers on which the software is installed.
- rvu\_sub\_capacity.csv the file is generated only when you create a snapshot of the **All IBM Metrics** report. It contains information about software products, their RVU MAPC consumption under subcapacity license, and details of the computers on which the software is installed.

**Note:** The **IBM PVU Subcapacity** snapshot generates only a pvu\_sub\_capacity.csv file.

• signature.rsa - is a digital signature that can be used to verify whether the checksums.txt file was tampered with. Verification can be achieved with OpenSSL. On Linux computers, the following command can be used to verify the checksums.txt file.

openssl dgst -sha256 -verify pub\_key.pem -signature signature.rsa checksums.txt

## Contracts

You use contracts to track license compliance for the software products that are installed in your environment. When you purchase a software license, you create a contract that contains information about the cost of acquiring and maintaining the license, and the period of entitlement. You use that information to track spending that is associated with software licenses and manage costs of extending or downsizing licenses for the software products. You can also avoid costs that are related to license non-compliance by ensuring that enough software licenses are purchased.

# **Maintaining contracts**

You can create contracts to store information about your software licenses, their cost, and periods of entitlement. If there is a discrepancy between software entitlement that you defined in the contracts and your infrastructure, you must balance your software or modify the contracts.

## About this task

The following workflow shows one way of maintaining accurate contracts and is intended as a starting point for new users. You can use your own method of ensuring that your contracts are up-to-date and accurate.



- 1. Enter your contracts in Software Use Analysis to store the information about your software licenses, their cost, and the period for which they entitle you to use the particular piece of software.
- 2. Optional: **Modify your computer groups**. If the existing computer groups are not adequate for your contracts, create new computer groups or edit the existing ones to improve the distribution of your contracts.
- 3. Make changes to your software catalog. To correctly identify the components of various software products in your infrastructure, ensure that your software catalog is always up-to-date. Periodically import a software catalog that contains the most recent software products. Also, manually add those products that are installed in your infrastructure but do not have corresponding entries in the catalog.
- 4. **Import scan data** from IBM Endpoint Manager to make your changes available to Software Use Analysis.
- 5. View the contract usage report to verify what your current usage of the licenses is:
  - If you have more licenses than software instances, you can deploy more software instances within your infrastructure.
  - If you have more software instances than licenses, you can buy more licenses or uninstall the software from some of the computers.
  - If the software is installed on the wrong computers, you can modify the contracts so that they apply to the computers on which the software is installed. You can also uninstall the software from the computers that are not entitled.
- 6. Scan the computers in your infrastructure to obtain the latest software data that reflects the changes in your contracts.
- 7. **Import software scan data** to Software Use Analysis to generate accurate reports.

You have accurate record of your software contracts.

# Creating contract custom fields

You can customize your contracts by creating custom fields that store information of your choice about the software licenses in your environment. Choose a meaningful name for each custom field to reflect its purpose. After you create a custom field, it is available in the Create Contract pane, among other fields that are required to create a contract.

# Before you begin



You must have the Manage Contracts permission to perform this task.

## Procedure

- 1. In the top navigation bar, click **Management** > **Contract Custom Fields**.
- 2. To create a custom field for a contract, in the upper left corner of the Contract Custom Fields window, click **New**.
- **3.** In the Create Contract Custom Field pane, enter the name of the field, specify whether the field is required for a contract, and choose the type of the requested input.

## Create Contract Custom Field

Name*	Part number
	Required
Туре*	String 💌
	Create

- 4. To save the custom field, click **Create**.
- To make the custom field available for the reports, click Reports > Import Now.

## Results

You created a custom field for a contract. You can now create a contract or edit the existing ones to add the values for the new fields.

# Creating contracts

You create contracts to store information about your software licenses, their cost, and the period for which they entitle you to use a piece of software. The contracts are then used to generate a contract usage report. The report shows the number of software instances that you are entitled to and the actual number of software instances that are used.

## Before you begin

A You must have the Manage Contracts permission to perform this task.

## About this task

You can create a contract for a single software title or for multiple titles. You can create contracts for software items on the level of a software product, its version, or release. If you have a single contract for any version of a product, you can assign the contract to that product. The contract then applies to all versions of that product.

- 1. In the top navigation bar, click **Management** > **Contracts**.
- 2. To create a contract for a software license, in the upper left corner of the Contracts window click **New**.
- **3**. In the Create Contract pane, enter the name of the contract and specify the software product or products that you want to assign to that contract. When you start typing in the title, version, or release of the software product, a list of

possible values is displayed below the search field. Scroll through the list to locate the exact software product and to avoid providing an incorrect or misspelled name of the product.

Name*	IBM contract		
Software	IBM Endpoint Manager	for Core Protection *	
	Software Version	IBM Endpoint Manager fo	
License Type	⊚ Seats ⊚ ELA	IBM Endpoint Manager for Core Protection 9 IBM Endpoint Manager for Core Protection Data Protection	▲ Ⅲ
Computer Group	All Computers 💌	Add-on 8	
Acquisition Cost*		IBM Endpoint Manager for Core Protection Data Protection Add-on 9	
Maintenance Cost*		IBM Endpoint Manager for Lifecycle Management 8	-

- 4. Choose the type of licensing that is used for the product or products that you assigned to the contract:
  - Choose **Seats** if a limited number of product instances can be deployed. Additionally, you must specify the number of software instances that you are entitled to under the license.
  - Choose ELA if an unlimited number of product instances can be deployed.

Create Contract	
Name*	IBM contract
Software	IBM Endpoint Manager for Core Protection
	IBM Endpoint Manager for Core Protection 9 💌
	Software Version  Enter a software version
License Type	⊚ Seats ⊚ ELA
Seats*	200
Computer Group	All Computers
Acquisition Cost*	20000
Maintenance Cost*	1000
Entitlement Start*	11/14/2013
Entitlement End	11/14/2014
Maintenance Start	
Maintenance End	
	Create

- 5. Choose the computer group to which you want to assign the contract. Provide the acquisition and maintenance cost, and the entitlement start date. You can also specify the entitlement end date, and the maintenance start and end dates.
- 6. To save the contract, click **Create**.

7. To make the contract available for generating a contract usage report, click **Reports** > **Import Now**.

## Results

You created a contract that reflects your entitlement to use a particular software product under the license that you have for that product. You can now generate a contract usage report to find out whether you conform to the license regulations.

## Viewing contract usage reports

Contract usage reports are based on the contracts that you create for software licenses. The report shows the number of software instances that you are entitled to under a license and the actual number of instances that are used. You can use the report to reduce spending on unused licenses, and to track computers that use unlicensed instances of a software product.

## Before you begin

- 🛃 You must have the Manage Contracts permission to perform this task.
- You must create contracts for the licenses that you have for software products.

## Procedure

- 1. In the top navigation bar, click **Reports** > **Contract Usage Data**.
- 2. To see details of a contract, click the contract name.

# Contract usage report

Contract usage report shows the relation between the contracts for software licenses and the software products that are installed in your infrastructure. Before you can analyze the report, you must be familiar with the meaning of the report columns and the calculations on which the information is based.

Contract usage report shows the relation between the number of software product instances that you are entitled to under a particular license and the actual number of software instances that are being used. You can analyze the report and use the information that it provides to reduce license-related spending. You can eliminate unused licenses and track computers that use unlicensed instances of a software product. The information in the report columns and the calculations on which the information is based are explained in the table.

Table 9. Columns in the contract usage report

Name of the column	Contents
Name	Name of the contract.
Entitled Computers	Computers that are entitled to use the software.
Licensed Computers	Computers that are entitled to use the software and have this software installed.

Table 9. Columns in the contract usage report (continued)

Name of the column	Contents
Total Licenses	Number of licenses for the particular software product that are available. If the product is licensed per computer, the number of computers entitled to use the product is provided. If an unlimited number of products can be deployed under the particular license, the column includes the abbreviation ELA (Enterprise Licensing Agreement). Higher-level users can define a contract that applies to a broad group. If lower-level users view a contract usage report that is defined in such a way, they see the larger total number of licenses for the product. However, when the lower-level users view the list of instances, they see only those instances of the product for which they have permissions.
	For example, a global administrator defines a contract for 5000 instances of Lotus Notes <sup>-</sup> , out of which 3500 instances are used. A lower-level user has an infrastructure that consists of 100 computers. The user is entitled to 100 instances of Lotus Notes, but only 70 instances of the product are used. If the global administrator makes the contract viewable to the lower-level user, the user sees that 3500 instances of Lotus Notes out of 5000 available instances are used. However, when lower-level users view the list of instances that are pertinent to their computer group, they see only the numbers that reflect the use of licenses in their computer group. The report shows 70 used instances of Lotus Notes out of 100 instances available under the particular license.
License Delta	Difference between the number of software product instances that you are entitled to under a particular license and the actual number of software instances that are used. If the license delta is a positive number that is displayed in green, the number of product instances that are used does not exceed the license entitlement. If the license delta is a negative number that is displayed in red, the number of product instances that are used are used exceeds the license entitlement.
Cost Delta	Difference between the cost of purchasing the license for the particular software product and the cost of used or unused instances of that product. If the cost delta is a positive number that is displayed in green, the number of product instances that are used does not exceed the license entitlement. The number indicates that you have some spare licenses that you can distribute in your enterprise or that you can reduce the license-related cost by not extending the excessive licenses. If the cost delta is a negative number that is displayed in red, the number of software product instances that are used exceeds the license entitlement. You must either reduce the number of product instances of the software product.
Acquisition Cost	Overall cost of purchasing the license for the particular software product.
Cost per Seat	Cost of the license for the software product for each product instance.

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