

IBM Endpoint Manager for Software Use Analysis
Version 9.1 (includes update 9.0.1, 9.0.1.1 and 9.0.1.2)

Managing Software Inventory Guide



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This edition applies to IBM Endpoint Manager for Software Use Analysis 9.0.1.2 (product number 5725-F57) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Managing software inventory



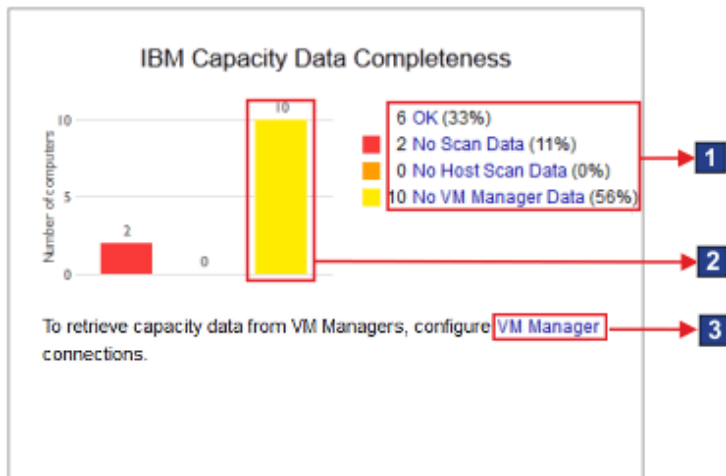
The topics in this section provide information about how to discover software in your IT infrastructure. You can check how to generate and view reports, analyze the findings, and adjust all processes and functions for creating these reports.

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.



Elements of the widget

- 1 Links to the Inventory Data report with results narrowed down to computers with the particular status.
- 2 The number of computers with a particular status.
- 3 A link to the VM Managers panel.

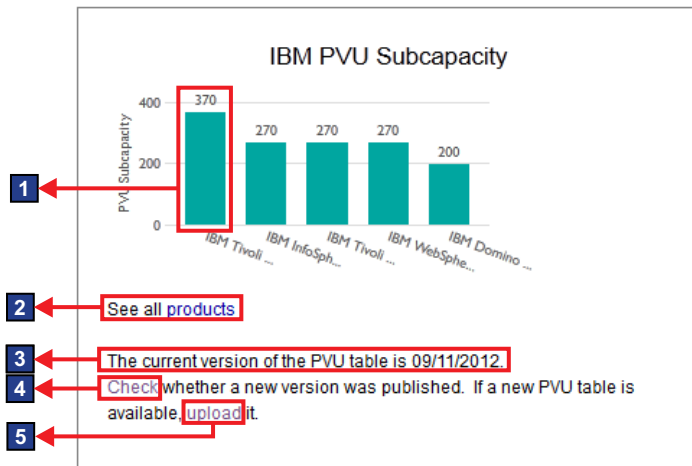
IBM PVU Subcapacity

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

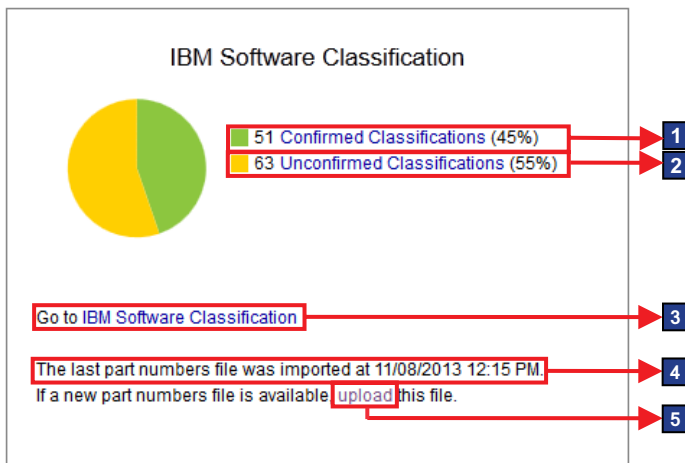
- 1 The PVU consumption rate of a product.
- 2 A link to the whole IBM PVU Subcapacity report.
- 3 The current version of the PVU table.
- 4 A link to the website on which you can check whether a new version of the PVU table is already available.
- 5 A link to the Metric Table Upload panel on which you 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.

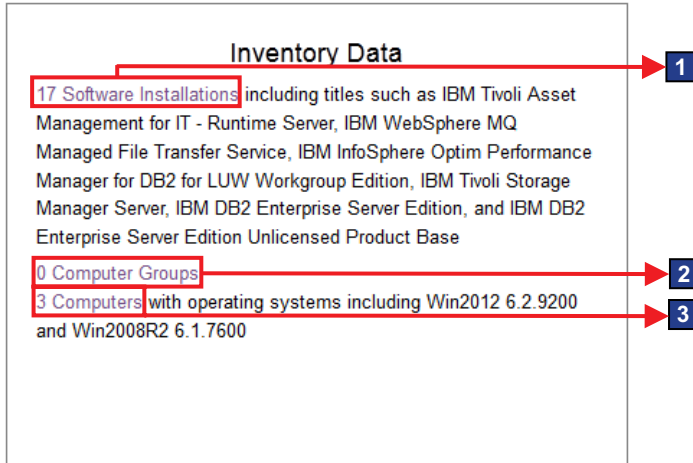


Elements of the widget

- 1 A link to the IBM Software Classification panel with results narrowed down to software installations whose assignment was confirmed.
- 2 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.

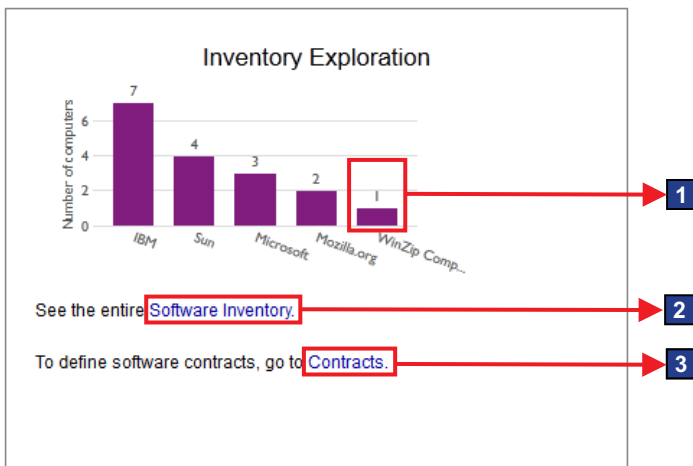


Elements of the widget

- 1 A link to the Software Installations report.
- 2 A link to the Computer Groups report.
- 3 A link to the Computers report.

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.

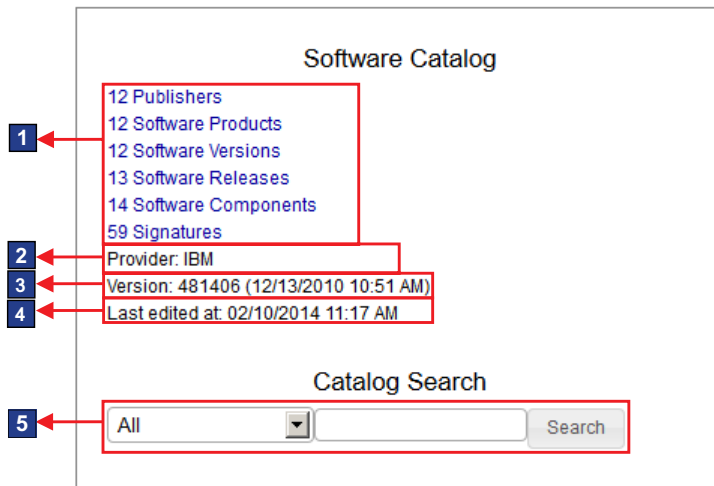


Elements of the widget

- 1 The number of products from a particular publisher.
- 2 A link to the Software Installations report.
- 3 A link to the Contracts panel.

Software Catalog

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



Elements of the widget

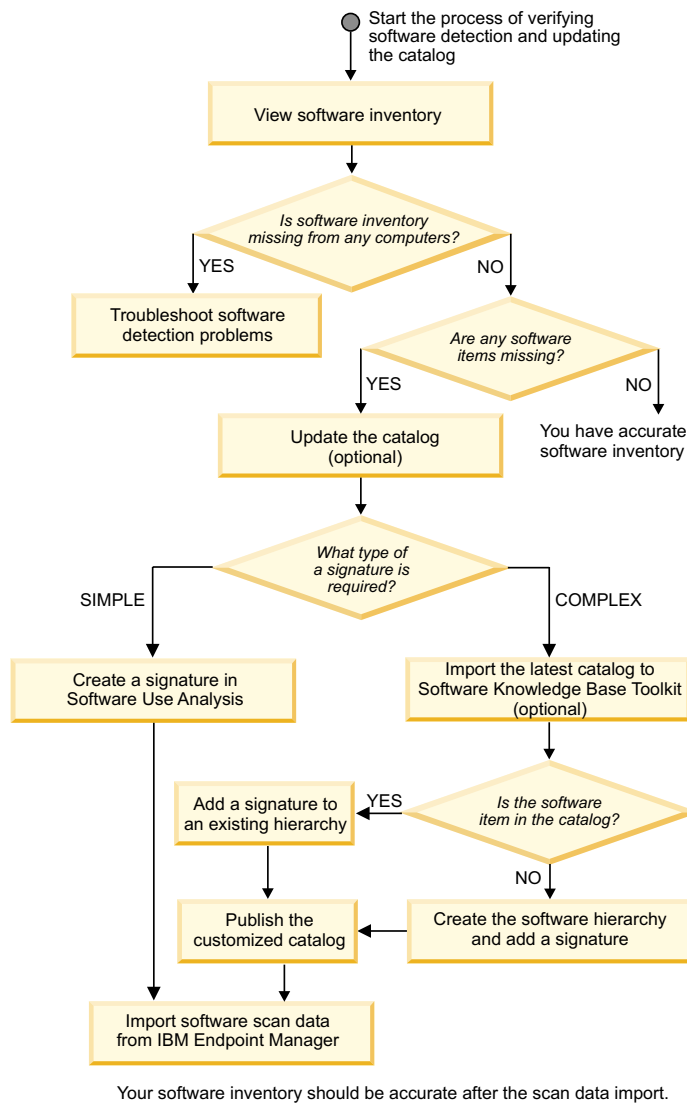
- 1** Catalog overview links for all publishers, software products, versions, releases, components, and signatures in the current catalog.
- 2** Name of the catalog provider.
- 3** Information about the current version of the catalog.
- 4** The date when the software catalog was last edited.
- 5** Catalog search field.

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.



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.
4. 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.
6. 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® 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.

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.

The screenshot shows the IBM Software Classification interface. At the top, there are filters for 'Discovery start' (9/1/2014) and 'Discovery end' (9/18/2014), with an 'Update' button. Below this, it says 'Displayed products: 16'. A dropdown menu is set to 'Unconfirmed Classifications'. The main table has columns: Product/Release/Component, Host Name, Confirmed, Bundling Rules Used, Current Server ID, Part Numbers, License Type, Discovery Start, Discovery End, and Installation Path. A context menu is open over the row for 'IBM Endpoint Manager Platform Agent 9.0', showing options like 'Reassign instances to this product...', 'Reassign instances to another product...', 'Confirm the assignment of instances', 'Include instances in pricing calculation...', 'Exclude instances from pricing calculation...', and 'Share instance...'. Numbered callouts 1-8 point to: 1. Unconfirmed Classifications dropdown; 2. Context menu; 3. Discovery start filter; 4. Discovery end filter; 5. Part Numbers column; 6. License Type column; 7. Discovery Start column; 8. Discovery End column.

1 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, 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 first as they require your action.

2 Actions

The actions menu is available from the list at the top of the table or when you right-click a release or a component. Use the following actions to ensure that software classifications reflect your entitlements:

- “Reassigning software instances” on page 14
- “Confirming the assignment of a software instance” on page 13
- “Including software instances in pricing calculations” on page 16
- “Excluding software instances from pricing calculations” on page 16
- “Sharing software instances” on page 17

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.

3 Options

Changes which columns are displayed or hidden.

Tip: The columns that are available for selection depend on whether the product tree is expanded or collapsed. If a particular column is not available for selection, expand at least one product.

4 Refreshing

Updates the data that is displayed on the panel according to the selected time range.

5 Part numbers

Shows 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® or create it yourself.

6 Update 9.0.1.1 License Type

Shows the type of license for each product. The possible values are PVU, RVU MAPC, and Other. You can use this information when you reassign or share software components to better understand the impact your actions might have on the PVU and RVU calculations.

7 Filter

Narrows down the number of products that are displayed on the panel according to the specified filter.

8 Update 9.0.1.1 Discovery start and end dates

Specify when the product or component was detected for the first time and when the detection finished (the product or component was uninstalled)

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.

Table 1. Bundling rules

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.

Table 1. Bundling rules (continued)

Rule	Description
"Partition collocation" on page 11	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® that is installed on the same computer as Software Use Analysis is bundled with Software Use Analysis.
"Infrastructure collocation" on page 11	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 12	This rule identifies the component instances of particular products, and indicates the product that contains the lowest number of components.

Important:

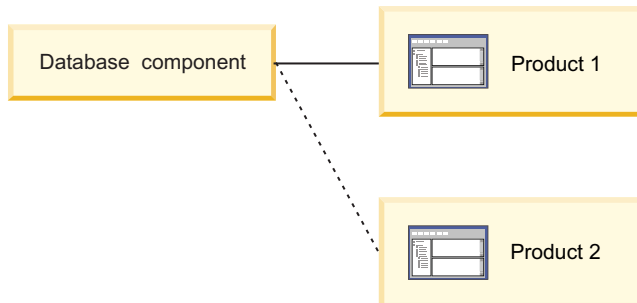
- If the internal score is low, more actions might be necessary, for example manual bundling.
- Instances that are a part of an excluded product cannot be rebundled automatically. Instances can be bundled with excluded products only if they are associated with the excluded products based on the software 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

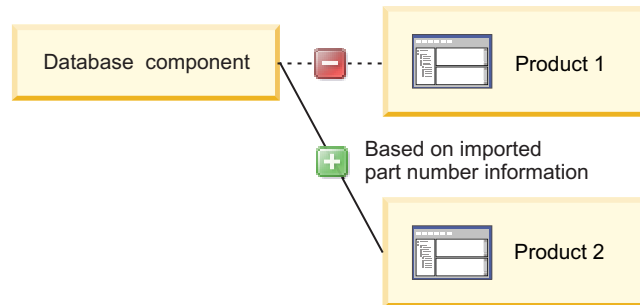
Part numbers represent software products that you purchased. They can be used to increase the accuracy of automated bundling by narrowing down the number of possible products to which a discovered component can be assigned.

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.



Types of the part numbers file

There are two types of the part numbers file:

- A file with part numbers that is provided by IBM together with the software catalog
- A file with part numbers that represent the IBM software that you purchased

The first file is uploaded in the Catalog Upload panel. The second file is downloaded from the Passport Advantage website or created manually and uploaded in the Part Numbers Upload panel. Part numbers that represent your purchased products are matched against the part numbers that are provided with the software catalog to improve the results of the automated bundling.

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.

Update 9.0.1.1 You can also create a CSV file with a single column in which you list each part number in a new line. For example:

```
D07UMLL  
D08UMLL  
D09UMLL
```

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.

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

Results

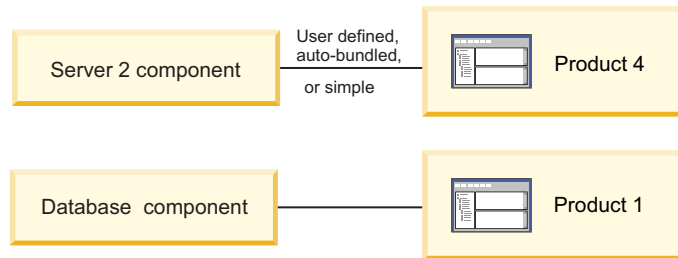
The part numbers were imported to Software Use Analysis and saved in the adm.current_part_numbers table in the database. If you want to remove the part numbers from the server, click **Remove All Part Numbers** and then run the import. You can remove the part numbers only if you have previously imported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

Partition collocation

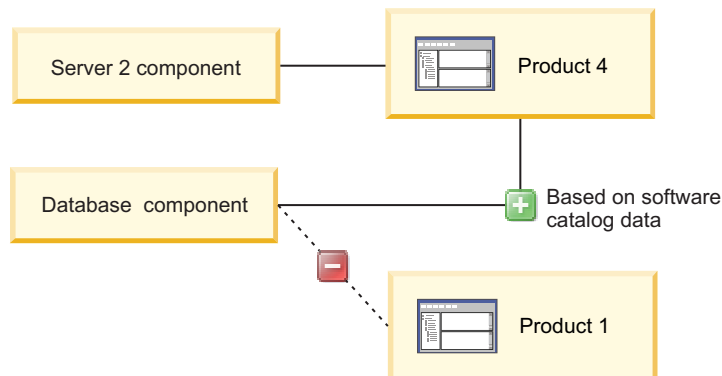
Partition collocation is a rule that discovers component instances that are on the same partition and are related to a product in the software catalog. If any of the discovered component instances has a confirmed, one-to-one, or auto-bundled relation to the product, the other instances are automatically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

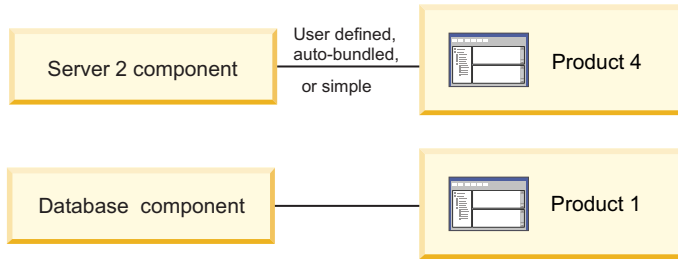


Infrastructure collocation

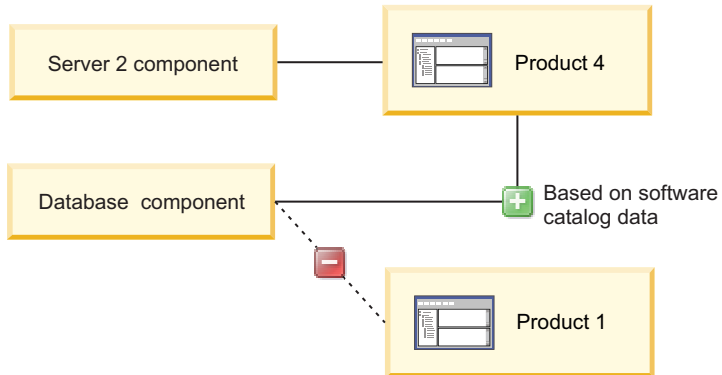
Infrastructure collocation is a rule that discovers component instances that are installed in the same infrastructure and that are related to a specific product in the software catalog. The search does not include the agent on which the product is installed. If any of the discovered component instances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

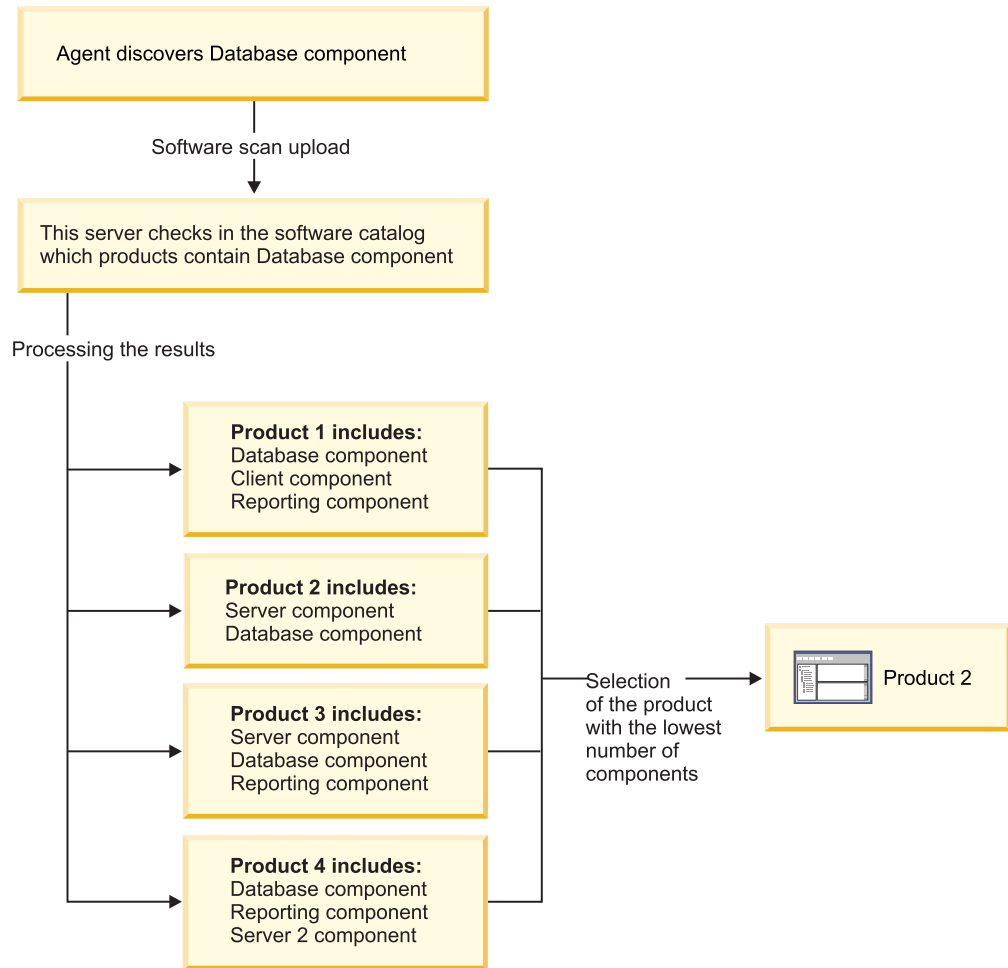


Stand-alone product discovery

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

Reassignment of software components 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. Two approaches to managing software classification exist. In the first approach, you start from a software instance and identify a release to which it can be reassigned. In the second approach, you start from a software release. You can identify instances that can be reassigned to this release. You can also find a product to which instances of this release can be reassigned.

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. If you want to manage software classification from the level of software instances, right-click an instance, and click **Reassign instances to another product**. Then, select the product to which you want to reassign this instance, and click **Reassign**.

Tip: **Update 9.0.1.1** The **License Type** column contains information about the type of license of products to which you can reassign this software instance.

Product/Release/Component	Host Name	Confirmed	Bundling Rules Used	Current Server ID	Operating	Part Numbers	License Type	Installation Path
IBM DB2 Developer Edition		⚠				D58N6LL, D58N7LL, D58N5LL, D58N8LL	Other	
IBM DB2 Developer Edition 10.5 (11)		⚠					...	
IBM Tivoli Monitoring for Databases - DB2 Agent 6.2	NC042080		Based on: the part	TLM_VM_50305bd3-1f09-7294-7033-b903767d4605	Win2003 5.2.3790		...	C:/Program Files/IBM/SQLLIB/itma/TMAITM6
IBM Tivoli Monitoring for Databases - DB2 Agent 6.2	rx7640			HP n7640 USE48223V7	HP-UX B.11.31		...	/opt/IBM/db2/V9.7/itma/hp1116/ud/itlm
IBM Tivoli Storage Manager Client 6.3	VMW009128109U94	⚠	co-location, the relation in the software catalog.	TLM_VM_42362841-6b4e-ea26-9755-07b28dc0fd41	Win2008R2 6.1.7601		...	C:/IBM Software/TSM

3. If you want to manage software classification from the level of software releases, right-click a release and choose one of the following options:

- To reassign a software instance to this release, click **Reassign instances to this product**. Then, select the instances that you want to reassign, and click **Reassign**.

Tip: **Update 9.0.1.1** The **License Type** column contains information about the type of license of product instances that you can reassign to this release.

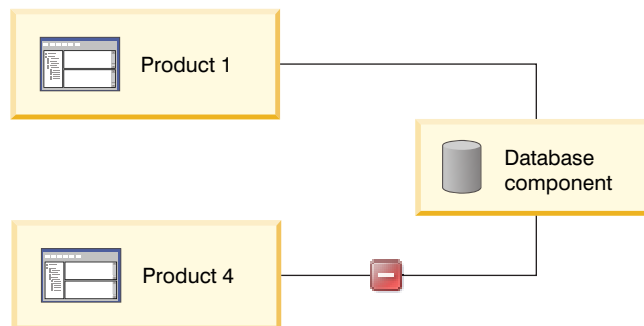
- To reassign the instances of this software release to another product, click **Reassign instances to another product**. Then, select the product to which you want to reassign, and click **Reassign**.

Tip: **Update 9.0.1.1** The **License Type** column contains information about the type of license of products to which you can reassign instances of this release.

Product/Release/Component	Host Name	Confirmed	Bundling Rules Used	Current Server ID	Operating	Part Numbers	License Type	Installation Path
IBM DB2 Developer Edition		⚠				D58N6LL, D58N7LL, D58N5LL, D58N8LL	Other	
IBM DB2 Developer Edition 10.5 (11)							...	
IBM Tivoli Monitoring for Databases - DB2 Agent 6.2	NO...		Based on: the part numbers, the infrastructure co-location, the relation in the software catalog.	TLM_VM_50305bd3-1109-7294-7033-b903767d4605	Win2003 5.2.3790		...	C:/Program Files/IBM/SQLLIB/itma/TMAITM6
IBM Tivoli Monitoring for Databases - DB2 Agent 6.2	NO...		Based on: the part numbers, the infrastructure co-location, the relation in the software catalog.	HP n7640 USE48223V7	HP-UX B.11.31		...	/opt/IBM/db2/V9.7/itma/hpi116/ud/itlm
IBM Tivoli Storage Manager Client 6.3	VMW009128109094	⚠	Based on: the part numbers, the infrastructure co-location, the relation in the software catalog.	TLM_VM_42362841-6b4e-ea26-9755-07b28dc0fd41	Win2008R2 6.1.7601		...	C:/IBM Software/TSM

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

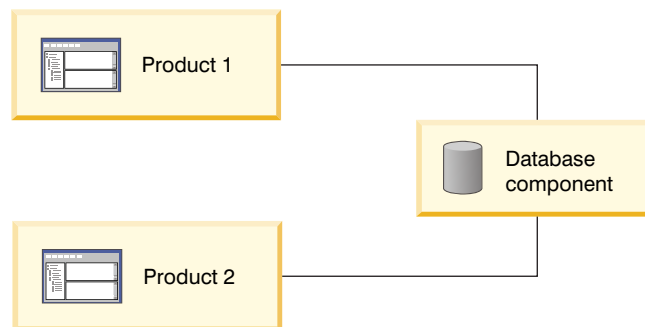
1. In the top navigation bar, click **Management > IBM Software Classification**.
2. Right-click the instance that you want to share, and click **Share instance**.

Tip: **Update 9.0.1.1** You can check the license type of the product with which you want to share the instance in the **License Type** column.

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, *.O, *.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 ensure that the signature is generic:
 - Use a wildcard (*) in the package version, for example: 7.2.*

Update 9.0.1 If you use a dot (.) in the package version, the dot is also matched with a dash (-). For example, if you specify the package version as 4.9.3.1*, version 4.9.3-1.e11 is also matched.

Update 9.0.1 If you specify a version without the wildcard, the signature also matches a package that contains a comma in the version number. For example, if the package version is **11.10.1,REV=2005.01.21.15.53**, signatures that have the following package version specified match it:

- 11.10.1
- 11.10.1,REV=2005.01.21.15.53

Signatures that have the following package version specified do not match it:

- 11.10
- 11.10.1,REV=2005.02.14.12.32
- 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 is 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 a discrepancy occurs, ensure that the proper version is defined in the software catalog. Consider creating more specific rules for handling issues that are related to software versioning.

Downloading the software catalog

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

Before you begin

If the computer where the Endpoint Manager server is installed does not have the Internet access, ensure that the content of the Software Use Analysis fixlet site is up-to-date. For more information, see: Updating the fixlet site.

Important: If you see any discrepancies between the fixlets in your site and the fixlets described in the documentation, check the version of your fixlet site and update it if necessary.

About this task

The **Software Catalog Update** task allows you for downloading the software catalog, charge unit data, and the part numbers file. Charge unit data consists of information about charge unit definitions, their relations with products, and additional parameters. The part numbers file contains information about part numbers that are used for software licensing purposes. If you want to update all of the files, you can download a single compressed file with the software catalog, charge unit data, and the part numbers file. If you want to update only one of the files, you can download either the software catalog or a compressed file with charge unit data and part numbers.

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

Procedure

1. Log in to the Endpoint Manager console.
2. In the navigation bar, click **Sites > External Sites > IBM Endpoint Manager for Software Use Analysis v9 > Fixlets and Tasks**.
3. In the upper-right pane, click **Software Catalog Update**, and then click **Take Action**.
4. Choose which files you want to download:
 - The software catalog, charge unit data, and the part numbers file compressed into a single file
 - Only the software catalog
 - Charge unit data and part numbers compressed into a single file
5. Click the name of the computer on which you want to download the files, and click **OK**.

Results

Depending on the option that you chose, the following file is downloaded:

- `IBMSoftwareCatalog_canonical_2.0_form_date.zip` - contains the software catalog in the XML format and two CSV files with charge unit data and part numbers
- `IBMSoftwareCatalog_canonical_2.0_form_date.zip` - contains the software catalog in the XML format

Important: The name of the file is the same as the name of the file that contains the software catalog, charge unit data, and the part numbers file.

- `ChargeUnits_date_dataversion_version.zip` - contains two CSV files with charge unit data and part numbers

The file is downloaded to the `sua_catalog` directory that is in the Software Use Analysis installation directory, by default: `/opt/IBM/SUA/sua_catalog`.

What to do next

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

Updating the 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 or use the built-in catalog management functionality, update the catalog directly in Software Use Analysis.

Before you begin



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

About this task

This procedure describes how to update the software catalog directly to Software Use Analysis. Follow these steps 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. If you customize the catalog content in Software

Knowledge Base Toolkit, see: “Updating the software catalog in Software Knowledge Base Toolkit” on page 36.

Procedure

1. Download the catalog.
2. In the navigation bar, click **Management > Catalog Upload**.
3. Click **Browse** and select the appropriate compressed file.
 - If you downloaded a compressed file that contains the software catalog, charge unit data, and the part numbers file, search for the `IBMSoftwareCatalog_canonical_2.0_form_date.zip` file.
 - If you downloaded a compressed file that contains only the software catalog in the XML format, search for the `IBMSoftwareCatalog_canonical_2.0_form_date.zip` file.
 - If you downloaded a compressed file that contains two CSV files with charge unit data and part numbers, search for the `ChargeUnits_date_dataversion_version.zip` file.

The default location of the file is `/opt/IBM/SUA/sua_catalog`.

4. To upload the file, click **Upload**.

Results

The software catalog file and the charge unit data are listed in the table. Their status is **Pending** until you import the scan data to process the 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

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*	<input type="text" value="Software Publisher"/>
Product Name*	<input type="text" value="Product"/>
Release*	<input type="text" value="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		Remove
Package	1			
Name*	Version	Vendor	Remove	Add
Package_1	2	Vendor		

The following file is found:

Name*	With	Remove	Add
file.exe	Any size or version		

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**.

Software Publisher	Edit Publisher	
Product	Name*	Software Publisher
Product 2	Website	
Product 2.1		Save
Product 2.1		
Signature		

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.

Software Publisher	Edit Software Product	
Product	Name*	Product
Product 2		Save
Product 2.1		
Product 2.1		
Signature		

- 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



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

Computer Name DNS Name

Data Source Name IP Address

Last Seen Computer ID

Operating System

Registry Data

Name Description

Version Type

Vendor

Filters

Include registry data which match **all** of the following conditions:

- 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**.

Computer Name	Last Seen	Name	Version
NC046213	about 4 hours ago	IBM 32-bit SDK for Java 2, v5.0	5.0
NC046213	about 4 hours ago	IBM 32-bit SDK for Java 2, v5.0	5.0
VMW009128109094	about 4 hours ago	IBM 64-bit Runtime	<input type="button" value="Create Signature"/>
VMW009128109094	about 4 hours ago	IBM 64-bit Runtime Environment for 6	

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

Create Catalog Entry

Publisher Name*

Product Name*

Release*

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	
<input text"="" type="text" value="5.0"/>	<input type="text" value="IBM"/>	<input type="button" value="Remove"/> <input type="button" value="Add"/>	

The following file is found:

Name*	With	
<input type="text"/>	<input type="text" value="Any size or version"/>	<input type="button" value="Remove"/> <input type="button" value="Add"/>

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

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™, 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
- Data Source Name
- Last Seen
- Operating System
- DNS Name
- IP Address
- Computer ID

Scan Data

- File Path
- File Name
- Size
- File Version

Filters

Include scanned file data which match of the following conditions:

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

Computer Name	Last Seen	File Path	File Name	Size
VMW009128109094	about 5 hours ago	C:\airgap	BESAirgapTool.exe	-
VMW009128109094	about 5 hours ago	C:\cygwin\bin	a2p.exe	-
VMW009128109094	about 5 hours ago	C:\cygwin\bin	addtinfo.exe	-
VMW009128109094	about 5 hours ago	C:\cygwin\bin	arch.exe	-
VMW009128109094	about 5 hours ago	C:\cygwin\bin	ascii.exe	-

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

Create Catalog Entry

Publisher Name*

Product Name*

Release*
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* <input type="text"/>	Version <input type="text"/>	Vendor <input type="text"/>	<input type="button" value="Remove"/>	<input type="button" value="Add"/>
----------------------------	------------------------------	-----------------------------	---------------------------------------	------------------------------------

The following file is found:

Name* <input type="text" value="BESAirgapTool.exe"/>	With <input type="text" value="Size (in bytes)"/> <input type="button" value="Remove"/>	Size <input type="text" value="1850304"/>
Name* <input type="text" value="BESAirgapTool.exe"/>	With <input type="text" value="Version"/> <input type="button" value="Remove"/>	Version <input type="text" value="9.0"/>

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

- 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.

- 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.

Exporting and importing custom catalog signatures

You can export and import custom catalog signatures to share signatures with other Software Use Analysis customers.

Before you begin



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

About this task

Simple signatures that are created by customers can be exported and shared with other customers. Simple signatures are based on a combination of file and package filters. Each exported signature is saved as an XML file. Signature files use the following naming convention: `sw_comp_software_component_GUID.xml`. Signature files are exported as a time stamped ZIP file that contains one or more signatures. Exported files can be uploaded and shared on a community website. You can import simple signatures that are shared by other customers to augment your software catalog.

Exporting signatures

Procedure

1. In the top navigation bar, click **Management > Catalog Customizations**.
2. Click **Export Mode**.
3. Select the signatures that you want to export by checking the appropriate check boxes. You can select individual signatures, all signatures for a publisher, and all signatures for all publishers by using **Select All**.

Note: To exit export mode and return to edit mode, click **Edit Mode**.

4. Click **Export**.
The XML files for exported signatures are created in a compressed file.
5. Save the file.

Results

The exported signatures XML files are exported in a compressed file. These signatures can be shared with other customers on a community website, or imported into another instance of Software Use Analysis.

Importing signatures

Before you begin

The signature XML files or ZIP file must be download to a location accessible to Software Use Analysis.

Procedure

1. In the top navigation bar, click **Management > Catalog Customizations**.
2. Click **Import** to open the Import Signatures window.
3. Import the file.

Signatures are imported from individual XML files or a ZIP file with valid signature XML files.

- a. Browse to the location of the file that you want to import.
- b. Select the file and click **Import**.
- c. Click **Done**.

Results

The imported signatures are available in the **Catalog Customizations** window. These signatures are now used by software scans to discover software in your environment.


Exporting and importing custom catalog content

You can export your custom catalog content from one instance of Software Use Analysis and import it into another to merge your custom data. Merging the software catalogs is useful if you maintain separate Software Use Analysis instances for test and production sites. In such case, you can reuse your custom catalog content instead of creating the new one.

Before you begin

Catalog with customizations can be exported into native format and uploaded into a new Software Use Analysis installation before the initial import.

Restriction:

- Native format overwrites the existing catalog. It can only be imported into a fresh Software Use Analysis installation.
- You can only transfer custom catalog content between two instances of Software Use Analysis if are the same version, for example 9.0.1.2.
-  You must have the Manage Catalogs permission to perform this task.
- The imported custom catalog overwrites all custom data that is already present in Software Use Analysis.

About this task

When you export the custom catalog content from Software Use Analysis, an XML file that contains all catalog entries is saved to your computer. Then, you must log in to another Software Use Analysis instance to which you want to import the custom catalog content and upload the XML file.

Procedure

1. Log in to Software Use Analysis instance from which you want to export the custom catalog content.
2. In the top navigation bar, click **Management > Catalog Upload**.
3. In the **Catalog Export** section, click **Export**. An XML file with your custom catalog content is saved to your computer.
4. Log in to Software Use Analysis instance to which you want to import the custom catalog content.
5. In the top navigation bar, click **Management > Catalog Upload**.
6. Click **Browse**, select the XML file with your custom catalog content, and click **Upload**.

Results

The software catalog file is listed in the table. The status is **Pending** until you go to **Management > Imports**, and click **Import Now** to process new changes.

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

1. 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.

Managing the catalog content in Software Knowledge Base Toolkit

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.

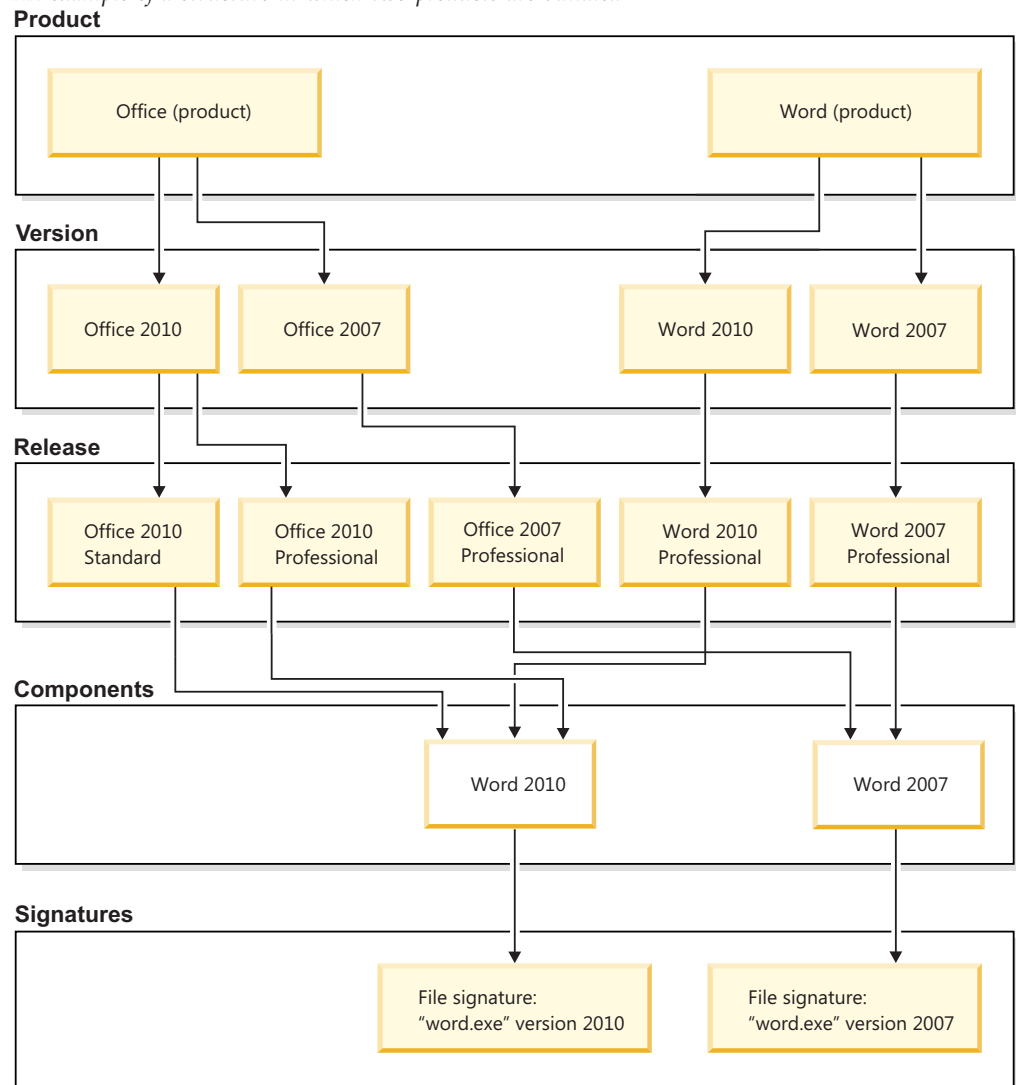
Component

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



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
<i>Product</i>	<i>Software product</i>	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.
<i>Version</i>	<i>Software version</i>	It is a separately licensable software item immediately subordinate to the parent product. It can group one or more releases.

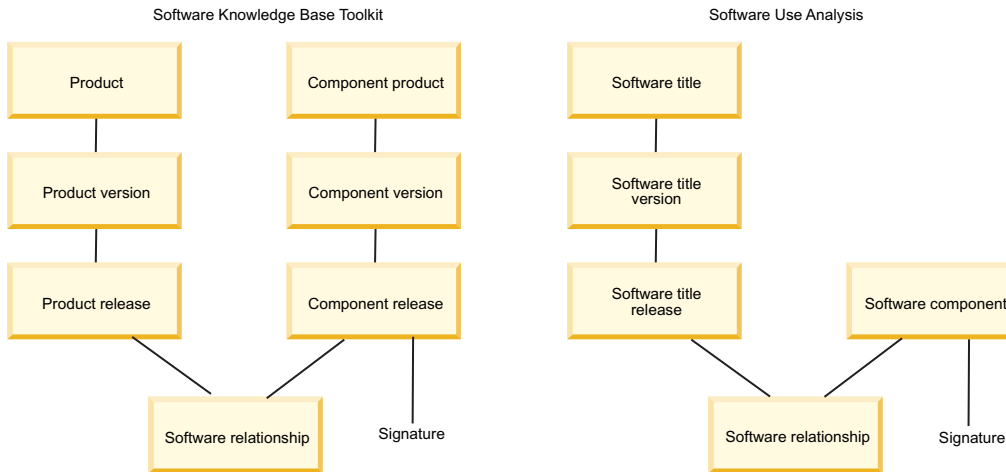
Table 2. Differences in software hierarchy (continued)

Software Knowledge Base Toolkit	Software Use Analysis	Description
<i>Release</i>	<i>Software release</i>	It is a separately licensable software item immediately subordinate to an item at the version level. It can only be subordinate to one version.
<i>Variation</i>	<i>Software release</i>	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.

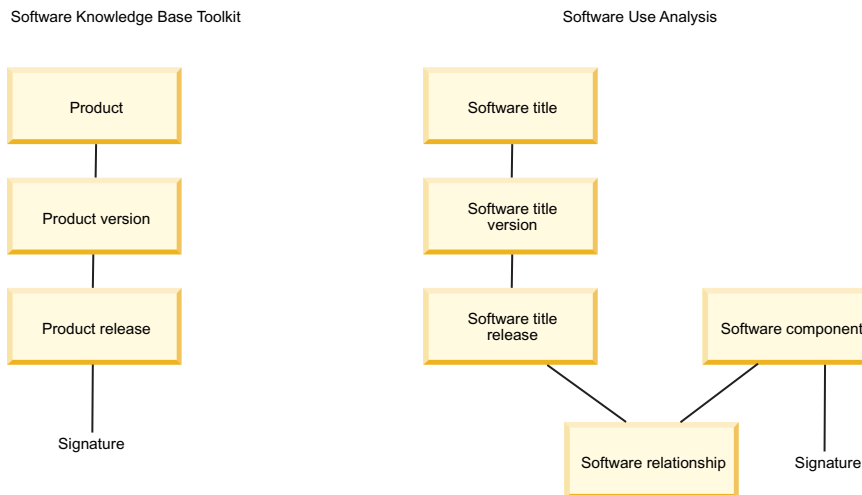
Table 3. Differences in component-related information

Software Knowledge Base Toolkit	Software Use Analysis
<i>Product component</i>	x
<i>Component version</i>	x
<i>Component release</i>	<i>Software component</i>
<i>Component variation</i>	

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 documentation.

Table 4. Types of signatures supported in Software Use Analysis

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 style="list-style-type: none"> File name: <i>BBPICVU.EXE</i> Size: <i>474112</i>
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 style="list-style-type: none"> Key: <i>csm.client</i> Value: <i>Cluster Systems Management Client 1.4.0.0</i> Source: <i>operating_system</i>
Filter	A signature that is used to identify software items that were installed on a computer system via an installation package.	Yes	No	<ul style="list-style-type: none"> Package name: <i>new_package</i> Package version: <i>20.4.76*</i> Package vendor: <i>new_vendor</i>
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\{79DAB940-B5EA-DBED-A348-B1B687CE38A6}\
Common Inventory Technology (CIT) XML	A native representation of a signature in Common Inventory Technology.	Yes	No	Signature content: <pre><Variable name="IS_INSTALLED" export="true"><PackageInfoEqual provider="os" code="SNbnr" value="Core OS 1.7.0 SNbnr" /></Variable> <Variable name="IS_INSTALLED" export="true"><And><Compare type="string" relation="ne"><VectorToScalar> <FindFilePathEx name="WBSFFP0601.SYS2"/> </VectorToScalar><ValueOf value="" /> </Compare><Compare type="string" relation="ne"><VectorToScalar><FindFilePathEx name="fabric-federation-vm-8.0.jar"/> </VectorToScalar><ValueOf value="" /> </Compare></And></Variable></pre>

Updating the software catalog in Software Knowledge Base Toolkit

To update the software catalog that is managed in Software Knowledge Base Toolkit, download the catalog and charge unit data from the Endpoint Manager server. Then, import the catalog file to Software Knowledge Base Toolkit. After you finish customizing the catalog, publish it in Software Knowledge Base Toolkit so that it becomes available for Software Use Analysis. Finally, upload the software catalog and the charge unit data to 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.

Procedure

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.

Downloading the software catalog for Software Knowledge Base Toolkit:

Download the latest software catalog from the Endpoint Manager server. Then, import it to Software Knowledge Base Toolkit.

Before you begin

If the computer where the Endpoint Manager server is installed does not have the Internet access, ensure that the content of the Software Use Analysis fixlet site is up-to-date. For more information, see: [Updating the fixlet site](#).

Important: If you see any discrepancies between the fixlets in your site and the fixlets described in the documentation, check the version of your fixlet site and update it if necessary.

About this task

The **Software Catalog Update** task allows you for downloading the software catalog, charge unit data, and the part numbers file. Charge unit data consists of information about charge unit definitions, their relations with products, and additional parameters. The part numbers file contains information about part numbers that are used for software licensing purposes. You can download the three files compressed into a single file. You can also download the software catalog as one compressed file, and charge unit data and part numbers as a second compressed file.

If you are using Software Knowledge Base Toolkit for catalog management, download the two compressed files separately. Import the software catalog to Software Knowledge Base Toolkit and the file with charge unit data and part numbers to Software Use Analysis.

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

Procedure

1. Log in to the Endpoint Manager console.
2. In the navigation bar, click **Sites > External Sites > IBM Endpoint Manager for Software Use Analysis v9 > Fixlets and Tasks**.

3. In the upper-right pane, click **Software Catalog Update**, and then click **Take Action**.
4. Choose the option to download only the software catalog file.
5. Click the name of the computer on which you want to download the file, and click **OK**.
6. Choose the option to download the charge unit data file.
7. Click the name of the computer on which you want to download the file, and click **OK**.

Results

The following files are downloaded:

- `IBMSoftwareCatalog_canonical_2.0_form_date.zip` with the software catalog in the XML format
- `ChargeUnits_date_dataversion_version.zip` with two CSV files with charge unit data and part numbers

They are downloaded to the `sua_catalog` directory that is in the Software Use Analysis installation directory, by default: `/opt/IBM/SUA/sua_catalog`.

What to do next

Import the software catalog file to Software Knowledge Base Toolkit.

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 Software Knowledge Base Toolkit and publish its content so that it is available for Software Use Analysis.

Before you begin



You 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 the software catalog” on page 22.

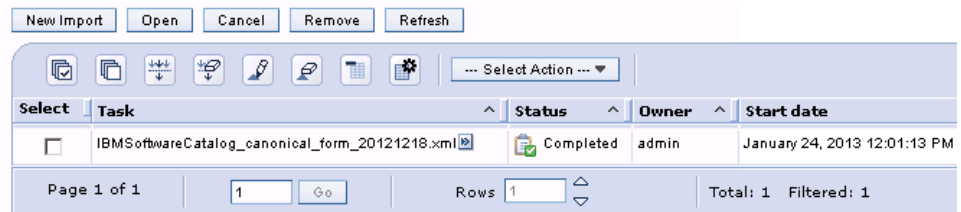
About this task

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.
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 XML catalog file and click **OK**. You must wait for the import to complete.



What to do next

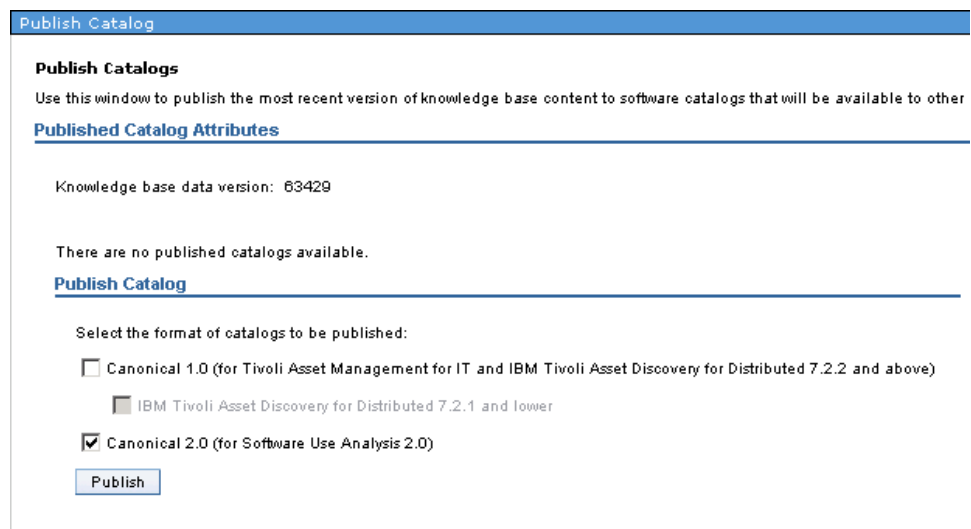
After you import the software catalog and customize its content, publish it in Software Knowledge Base Toolkit so that it can be imported to Software Use Analysis.

Publishing the software catalog in Software Knowledge Base Toolkit:

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

Procedure

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**.



What to do next

You published the software catalog. Now, upload the catalog, charge unit data, and the part numbers file to Software Use Analysis.

Uploading the catalog, charge unit data, and part numbers:

After you publish the software catalog in Software Knowledge Base Toolkit, upload it to Software Use Analysis. Then, modify the version of the charge unit data and the part numbers file so that it is consistent with the version of the published catalog. Next, upload the charge unit data and the part numbers file to Software Use Analysis.

Before you begin



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

About this task

You downloaded two files from the Endpoint Manager server:

- `IBMSoftwareCatalog_canonical_2.0_form_date.zip` file that contained an XML file with the software catalog
- `ChargeUnits_date_dataversion_version.zip` file that contained two CSV files:
 - A file with charge unit data:
`charge_unit_parameters_dataversion_version.csv`
 - A file with part numbers: `part_numbers_dataversion_version.csv`

After you publish the catalog file in Software Knowledge Base Toolkit, its version number is changed. You must manually modify the version number of the charge unit data and the part numbers file. Their version numbers must be consistent with the version number of the software catalog.

Update 9.0.1.2 Starting from application update 9.0.1.2, you can upload the catalog that is published in Software Knowledge Base Toolkit even if its version is lower than the version that is currently uploaded to Software Use Analysis. However, the version of the charge unit data and the part numbers file that you upload to Software Use Analysis must be higher than the version that is currently uploaded. You can upload the charge unit data and the part numbers file without modifying their versions on condition that it is higher from the currently uploaded version.

Procedure

1. Log in to Software Use Analysis.
2. In the top navigation bar, click **Management > Catalog Servers**.
3. To automatically import the software catalog from Software Knowledge Base Toolkit, in the upper left corner of the top navigation bar, click **Update Catalog**.
4. Modify the version number of the charge unit data and part numbers files so that it is consistent with the version of the catalog file that you published in Software Knowledge Base Toolkit.
 - a. Check the version of the published software catalog. You can check it in the following places:
 - The Upload and Import History table in Software Use Analysis

- The `dataVersion` attribute in the header of the XML catalog that you published in Software Knowledge Base Toolkit
 - In Software Knowledge Base Toolkit, under **Manage Exports > Publish Catalog**.
- b. Update the version number in the names of files with charge unit data and part numbers. For example, if the version of the published software catalog is 1090236, change the name of the charge unit data and part number files in the following way:
 - `charge_unit_parameters_dataversion_1090236.csv`
 - `part_numbers_dataversion_1090236.csv`
 - c. Compress those two files and name the compressed file `ChargeUnits_date_dataversion_version.zip`. The *version* must be the same as the version number of the catalog file. The name of the compressed file that contains files from step 4b would be `ChargeUnits_date_dataversion_1090236.zip`
5. To upload charge unit data and part numbers file, click **Management > Catalog Upload**.
 6. Browse for the `ChargeUnits_date_dataversion_version.zip` file, and click **Upload**.

What to do next

You uploaded the software catalog, charge unit data, and part numbers file into Software Use Analysis. The files are updated after the next data import.

Customizing the catalog content

You can use Software Knowledge Base Toolkit to create complex software signatures as well as to manage publishers and products. You can use the Scanned File Data and Metering Data reports that are available in Software Use Analysis to gather information necessary for creating complex software signatures in Software Knowledge Base Toolkit.

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 File Version

Filters

Include scanned file data which match all of the following conditions:

- 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.

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:

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

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

- 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**
- Click the name of the software and then select the exact version and release of the software title.

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

- Provide the name of the file that is to be used as a signature and its size.
- Select the signature scope, platform, and confidence level.
- 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.

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
- Data Source Name
- Last Seen
- Operating System
- DNS Name
- IP Address
- Computer ID

Scan Data

- File Path
- File Name
- Size
- File Version

Filters

Include scanned file data which match **all** of the following conditions:

+ [button]

[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.

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_Tra
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_Tra

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 of the following conditions:

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

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.
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 software items to the knowledge base and associate them with software publishers.

***Name:**

Software Title

Version identifier:

Publisher:

[Create publisher](#)

Publisher name:

Software Publisher

Software type:

Software Product

***Reason of change:**

The software was not detected.

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

Edit Software

Edit Software Software Title

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

Software Hierarchy

Software Title

Software Tasks

Select task:

Manage signatures

Manage Signatures

Add New Signature

Signature type:

File signature

Installation registry signature

File signature

CIT XML signature

Windows registry signature

Filter signature

- Provide the name of the file that is to be used as a signature and its size.
- Select the signature scope, platform, and confidence level.
- 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[®] 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



You 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

-  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.

Update 9.0.1 It also lists software identification tags related to a particular product.

Results

The details page shows information about signatures that were tried to detect a software item and about software identification tags that were discovered. The information is accompanied by one of the following icons:

-  - The signature matched the software item or the software ID tag was discovered on the computer.
-  - The signature did not match the software item.

If you believe that the software was erroneously detected, you can use this data to examine how the signature or the software ID tag 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



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**.

- 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
- Updates to the scan configuration in the Scan Configurations window

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. You can also specify whether to automatically size column widths.

Procedure

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

2870 rows (all 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

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

Tip: Click the trash can to delete a filter.

- 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 of the following conditions:

Total Run Time

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. Optional: Specify whether to automatically size column widths.
By default, columns are automatically resized to best fit the width of your browser. If your browser window changes in width, the report columns automatically adjust in width. You can also adjust the columns manually, if needed.
To disable automatically resizing column widths, clear the **Autosize Columns** check box. The width of all the columns becomes minimal. You can adjust the width of columns manually. A horizontal scroll appears if needed.
8. 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.

Procedure

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:

- - Generates a PDF file.
- - Generates a CSV file.

Note: If your reports are not displayed correctly, see the *User interface problems* section of **Troubleshooting**.

Saving customized report views

You can specify report filters and parameters that you want to reuse and save a customized report view. You can also set a customized report view as your default view or, if you are an Administrator, as a default view for all users. You can also send saved report views to other users of Software Use Analysis.

Procedure

1. Open the report for which you want to create a customized view.
2. To customize the report view, click **Configure View**. Add or remove columns and apply filters, then click **Submit**. Resize and sort the report columns by clicking and dragging.
3. In the upper left corner, click **Save As**. Specify the name of the report. You can also choose one of the following options:

- If you do not want other users of Software Use Analysis to view your customized report, select **Private**.
- If you want the customized view to be your default view for the particular report, select **Set as default**.

Tip: If the Administrator set a customized view as global default for a particular report, you can overwrite this setting by creating your default view. Your settings take precedence over the global settings.

- If you want the customized view to be the default report view for all users of Software Use Analysis, select **Set as global default**. You must be an Administrator to perform this task.

Changing the default report view:

To change the default view that you set for a particular report, you must first clear the settings and then set the new customized view.

Procedure

1. Open the list of all saved reports by clicking **Reports > Saved Reports**.
2. Open the report for which you want to edit or change the default customized view.
3. Clear the **Set as default** or **Set as global default** check box, and click **Save**.
4. Open the report for which you want to change the default view and customize it according to your needs.
5. In the upper-left corner, click **Save As**, specify the report name and select the **Set as default** or **Set as global default** check box. Click **Create**.

Viewing and sending saved report views:

You can send the customized report views to other users of Software Use Analysis.

Procedure

- 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 modify a saved report, click the row in which the saved report is located. In the **Edit Report** section, type the new name of the report. You can change the privacy status of the report by selecting or clearing the **Privacy** check box. You can also select whether to save the report view as your default view or as global default.
- 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*

Private

Set as default

Set as global default

Report Subscription

Format*

Page Size

Orientation

Portrait

Landscape

Email*

Separate multiple recipients with a comma.

Start Time

Frequency

Every day(s)

Language*

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 check the current license consumption for your software products by accessing the **All IBM Metrics** and **IBM PVU Subcapacity** reports. The license consumption can also be recalculated or saved and stored as a record for future use.

PVU and RVU license usage reports

The **All IBM Metrics** report shows the license consumption for all your products regardless of the license type they use. **IBM PVU Subcapacity** is an excerpt from this report and lists only IBM products that are eligible for PVU subcapacity licensing.

The **All IBM Metrics** and **IBM PVU Subcapacity** reports are multi-level reports, which means that you can drill down through them to view more detailed results. When you access one of those reports, you are on the first level that shows the list of your software products and their license consumption. After clicking one of the products, you can access a detailed full (**All IBM Metric** only) or subcapacity report. By further clicking the server name, you can access details of the servers and computers that a product is installed on.

The following table shows columns from the first level of the report. In other words, the report in this form is displayed each time you access it. The columns change while you drill down through the report.

Table 5. First-level view: The list of software products and their license consumption

Name of the column	Description
Product	Name of the product. Click it to access the second level of the report that shows a detailed full or subcapacity report.
License Type	Type of license. This column is available only in the All IBM Metrics report.
License Peak Value	The maximum PVU or RVU MAPC values that are used by the product over the specified time period.
Update 9.0.1.1 Imported Part Numbers	Part numbers that you imported to Software Use Analysis. They represent IBM products that you purchased.
License Peak Value History	Graphic representation of the history of license consumption over the specified time period.

The two following tables show columns from the second level of the report. This view can be accessed by clicking one of the products in the first level. The full capacity table is available only in the **All IBM Metrics** report.

Table 6. Second-level view: Detailed full capacity report for a particular product

Name of the column	Contents
Server Name	Name of the server. Click it to access the third level of the report that shows details of the servers and computers that a product is installed on.
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. Second-level view: Detailed subcapacity report for a particular product

Name of the column	Description
Server Name	Name of the server. Click it to access the third level of the report that shows details of the servers and computers that a product is installed on.
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.

The following table shows columns from the third level of the report. This view can be accessed by clicking the server name in the second level.

Table 8. Third-level view: Details of the server that a product is installed on

Name of the column	Description
Computer	Name of the computer that a product is installed on.
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 given software product within the specified time range.

Viewing PVU and RVU consumption

You can view the **All IBM Metrics** and **IBM PVU Subcapacity** reports by choosing the right options from the Reports menu. The reports show the license type and usage for each of your software products, and the history of license consumption over a specified time period.

Before you begin



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

About this task

For more information about the **All IBM Metrics** and **IBM PVU Subcapacity** reports, see PVU and RVU license usage reports.

Procedure

1. You can either view the license consumption for all your products regardless of the license type they use, or only for the IBM products that are eligible for PVU subcapacity licensing:
 - To view the license consumption for all your products, click **Reports > All IBM Metrics**.
 - To view the license consumption for 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 days

to now

to

3. To recalculate the PVU or RVU MAPC values for your products, click **Recalculate**.

The option is enabled only if the PVU or RVU MAPC values need to be recalculated. In such case, 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	 400	

4. To view a detailed full (**All IBM Metrics** only) or subcapacity report for a product, click the product name in the **Product** column.
5. To view details of the servers and computers that a product is installed on, click the server 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.

The screenshot shows a 'Configure View' dialog box. The 'Time Range' section has three radio button options: 'Last 0 days' (selected), '10/29/2013 to now', and '10/29/2013 to 10/29/2013'. The 'Filters' section has a label 'Include subcapacity which match all of the following conditions:'. Below this, there is a filter entry for 'Product' with a dropdown menu, followed by 'equals' with another dropdown menu, and the text 'IBM Tivoli Storage Mar'. To the right of this entry are a trash icon and a plus sign icon. At the bottom right of the dialog are 'Submit' and 'Cancel' buttons.

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` - a list of part numbers that are listed in the software catalog for software products included in any of the CSV report files.
- `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.

- **Update 9.0.1.1** `other_products.csv` - it contains information about software products that are not licensed under full or subcapacity licensing, and that do not generate any PVU or RVU MAPC consumption. It also lists details of the computers on which the software is installed.

Tip: By comparing the file with the other csv files you can get a detailed picture of the software bundling configurations in your environment.

- `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

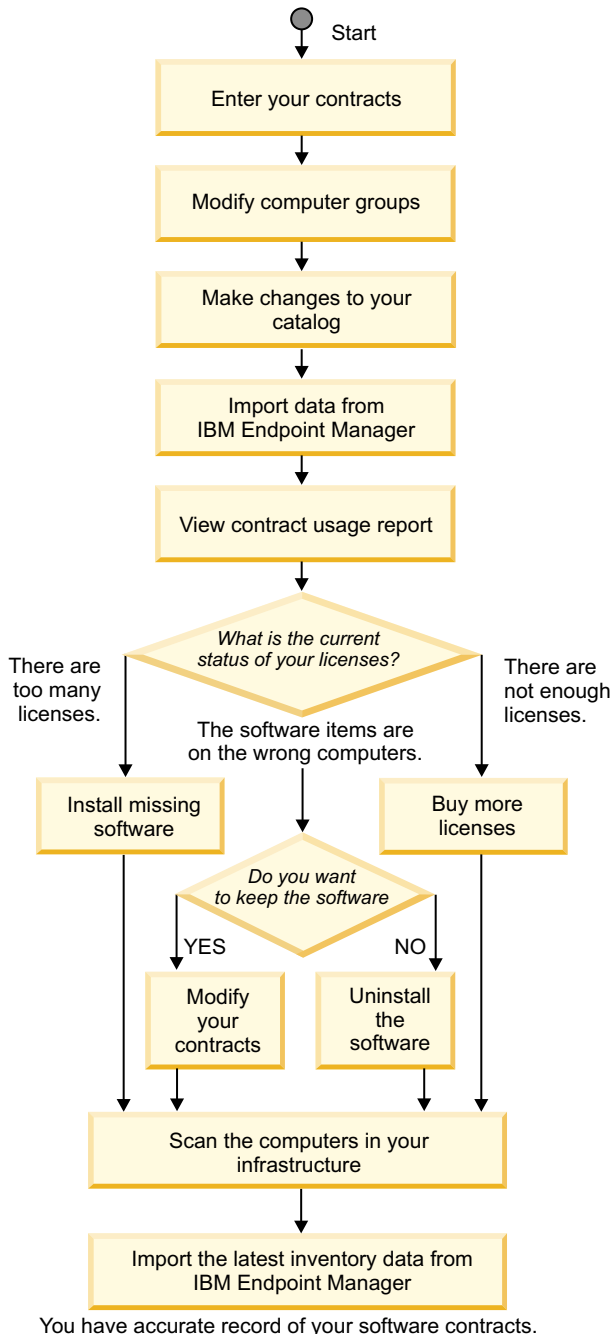
You use contracts to track license compliance for the software products that are installed in your environment. When you purchase a software license, you create a contract that contains information about the cost of acquiring and maintaining the license, and the period of entitlement. You use that information 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.

## 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* | <input type="text" value="Part number"/>     |
|       | <input checked="" type="checkbox"/> Required |
| Type* | <input type="text" value="String"/> ▼        |
|       | <input type="button" value="Create"/>        |

4. To save the custom field, click **Create**.
5. 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



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.

## Procedure

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**.

- 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.

Create Contract

Name\*

Software

Software Version

License Type  Seats  ELA

Computer Group

Acquisition Cost\*

Maintenance Cost\*

IBM Endpoint Manager for Core Protection 9  
 IBM Endpoint Manager for Core Protection Data Protection  
 Add-on 8  
 IBM Endpoint Manager for Core Protection Data Protection  
 Add-on 9  
 IBM Endpoint Manager for Lifecycle Management 8

- 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\*

Software

Software Version

License Type  Seats  ELA

Seats\*

Computer Group

Acquisition Cost\*

Maintenance Cost\*

Entitlement Start\*

Entitlement End

Maintenance Start

Maintenance End

- 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.
- To save the contract, click **Create**.
- 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     | <p>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.</p> <p>For example, a global administrator defines a contract for 5000 instances of Lotus Notes®, 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.</p> |
| License Delta      | <p>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 exceeds the license entitlement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Cost Delta         | <p>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 used or purchase licenses for more instances of the software product.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Acquisition Cost   | <p>Overall cost of purchasing the license for the particular software product.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Cost per Seat      | <p>Cost of the license for the software product for each product instance.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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