IBM Endpoint Manager for Software Use Analysis
Version 9.0

Troubleshooting Guide

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

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Troubleshooting and support

This section explains how to find logs, messages, and trace files that you might need to troubleshoot issues that could arise while using the product.

Troubleshooting a problem

Troubleshooting is a systematic approach to solving a problem. The goal of troubleshooting is to determine why something does not work as expected and explain how to resolve the problem.

The first step in the troubleshooting process is to describe the problem completely. Problem descriptions help you and the IBM Support person know where to start to find the cause of the problem. This step includes asking yourself basic questions:

- What are the symptoms of the problem?
- Where does the problem occur?
- When does the problem occur?
- Under which conditions does the problem occur?
- Can the problem be reproduced?

The answers to these questions typically lead to a good description of the problem, and that is the best way to start down the path of problem resolution.

What are the symptoms of the problem?

When starting to describe a problem, the most obvious question is "What is the problem?" This might seem like a straightforward question; however, you can break it down into several more-focused questions that create a more descriptive picture of the problem. These questions can include:

- Who, or what, is reporting the problem?
- What are the error codes and messages?
- How does the system fail? For example, is it a loop, hang, crash, performance degradation, or incorrect result?
- What is the business impact of the problem?

Where does the problem occur?

Determining where the problem originates is not always easy, but it is one of the most important steps in resolving a problem. Many layers of technology can exist between the reporting and failing components. Networks, disks, and drivers are only a few of the components to consider when you are investigating problems.

The following questions help you to focus on where the problem occurs to isolate the problem layer:

- Is the problem specific to one platform or operating system, or is it common across multiple platforms or operating systems?
- Is the current environment and configuration supported?

Remember that if one layer reports the problem, the problem does not necessarily originate in that layer. Part of identifying where a problem originates is understanding the environment in which it exists. Take some time to completely describe the problem environment, including the operating system and version, all corresponding software and versions, and hardware information. Confirm that you are running within an environment that is a supported configuration; many problems can be traced back to incompatible levels of software that are not intended to run together or have not been fully tested together.

When does the problem occur?

Develop a detailed timeline of events leading up to a failure, especially for those cases that are one-time occurrences. You can most easily do this by working backward: Start at the time an error was reported (as precisely as possible, even down to the millisecond), and work backward through the available logs and information. Typically, you need to look only as far as the first suspicious event that you find in a diagnostic log; however, this is not always easy to do and takes practice. Knowing when to stop looking is especially difficult when multiple layers of technology are involved, and when each has its own diagnostic information.

To develop a detailed timeline of events, answer these questions:

- Does the problem happen only at a certain time of day or night?
- How often does the problem happen?
- What sequence of events leads up to the time that the problem is reported?
- Does the problem happen after an environment change, such as upgrading or installing software or hardware?

Responding to questions like this helps to provide you with a frame of reference in which to investigate the problem.

Under which conditions does the problem occur?

Knowing which systems and applications are running at the time that a problem occurs is an important part of troubleshooting. These questions about your environment can help you to identify the root cause of the problem:

- Does the problem always occur when the same task is being performed?
- Does a certain sequence of events need to occur for the problem to surface?
- Do any other applications fail at the same time?

Answering these types of questions can help you explain the environment in which the problem occurs and correlate any dependencies. Remember that just because multiple problems might have occurred around the same time, the problems are not necessarily related.

Can the problem be reproduced?

From a troubleshooting standpoint, the *ideal* problem is one that can be reproduced. Typically, problems that can be reproduced have a larger set of tools or procedures at your disposal to help you investigate. Consequently, problems that you can reproduce are often easier to debug and solve. However, problems

that you can reproduce can have a disadvantage: If the problem is of significant business impact, you do not want it to recur. If possible, re-create the problem in a test or development environment, which typically offers you more flexibility and control during your investigation.

- Can the problem be re-created on a test system?
- Are multiple users or applications encountering the same type of problem?
- Can the problem be re-created by running a single command, a set of commands, a particular application, or a stand-alone application?

Troubleshooting software inventory problems

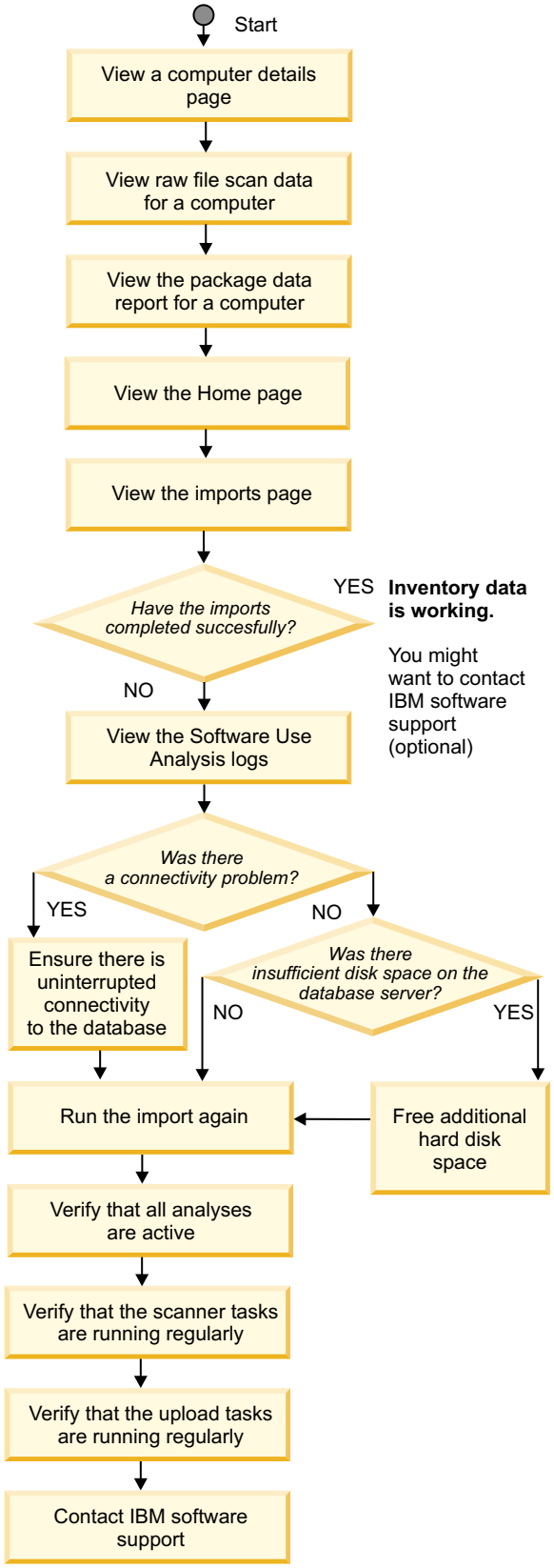
Problems with software inventory might be caused by, among others, incomplete imports, connectivity problems, or insufficient disk space.

Before you begin

The Software Use Analysis log files are in `<installation_path>/wlp/usr/servers/server1/logs/`.

About this task

The following steps are the most typical ones that you might want to perform to troubleshoot software inventory problems:



1. In the Software Use Analysis web user interface, view the details page for a computer that is missing inventory: click **Reports** > **Computers** > *Computer_name*.
   - If only specific titles are missing, see **Managing the content of a software catalog**.
   - If all data is missing, go to the next step.
   - If the computer has inventory, go to another computer that is missing inventory.
2. Access the raw scan data page to verify whether inventory data is missing: click **Reports** > **Scanned File Data**.

   If there is no data, go to the Endpoint Manager console and perform steps 10, 11, 12 and 13. Otherwise, go to the next step.
3. Verify whether package data is available: Click **Reports** > **Package Data**.

   If the data is still not complete, you might want to perform step 10. Otherwise, go to the next step.
4. View the Software Catalog widget on the Home page to verify whether there are titles and signatures in the catalog. In the top navigation bar, click **Home**.
   - If there are no publishers in the catalog, load a catalog.
   - If there is no inventory for any computers, go to the next step.

   For information about how to update and maintain your software catalog, see **Working with software catalogs**.
5. Verify whether imports are completing successfully: click **Management** > **Data Imports**.
   - If they completed successfully, your inventory data is probably working. You might want to contact IBM® support, so be prepared to provide the logs.
   - If the imports cannot be completed, go to the next step.
6. Access the log file data that is displayed in the Software Use Analysis user interface: click **Management** > **Data Imports**.

   If IBM support has requested the log files, you can find them in the following location: `<installation_path>/wlp/usr/servers/server1/logs/`.
7. Ensure that you have uninterrupted connectivity to the database. Restore the connection between the Software Use Analysis server and the Endpoint Manager database, if it was not established during the data import.
8. Ensure that there is sufficient amount of disk space for the Software Use Analysis database, if this problem was revealed in the logs.
9. **Import the data from IBM Endpoint Manager again** to see whether the previous steps remedied the situation.
10. In the Endpoint Manager console, verify that all analyses are active:
    a. Click **Sites** > **External** > **IBM Endpoint Manager for Software Use Analysis** > **Analyses**.
    b. Verify whether the analyses display in the upper right pane.
11. In the console, verify that all the scanners are running regularly:
    a. Click **Sites** > **External Sites** > **IBM Endpoint Manager for Software Use Analysis** > **Fixlets and Tasks**.
    b. In the upper right pane, click **Initiate Software Scan**.
    c. In the lower pane, click the **Action History** tab to check when the scans were run.
12. Verify that upload tasks are running regularly:
    a. Click **Sites** > **External Sites** > **IBM Endpoint Manager for Software Use Analysis** > **Fixlets and Tasks**.
    b. In the upper right pane, click **Upload Software Scan Results**.
    c. In the lower pane, click the **Action History** tab to check when the results were last uploaded.
13. If your imports are still failing, contact IBM software support.

Common problems

Learn how to solve some common problems with the server installation, configuration and administration.

The following list contains descriptions of common installation problems:

Installation and upgrade problems

Solve common problems that are related to the installation, configuration, and upgrade of Software Use Analysis.

During the installation of Software Use Analysis for non-English-language locales, some Java exceptions are displayed in English.

Even for non-English-language locales, some Java exceptions that might occur during the installation are displayed in English. However, the Details view that contains the exceptions also includes more information that can help you to understand and solve the issue. If you want to see the translated description of a problem, you can switch to the Problems view where all the available details are provided.

The installation of the server cannot continue and an error is displayed.

The installation of the Software Use Analysis server cannot continue and the following message is displayed:

```
./tools/getArch: line 108: print: command not found
./tools/getArch: line 109: print: command not found
./tools/getArch: line 116: print: command not found
setup-server-9.0-linux-x86_64.sh: line 52: print: command not found
```

The error might be caused by the fact the operating system is not fully configured. You might also need to reboot the operating system.

The list of non-English languages in the installation wizard is reduced.

To see your language as an option in the installation wizard, change your system locale to a chosen language:

1. On Linux, open the Terminal and run the following command:

   ```
   export LC_ALL=language_code
   ```

   For example, **export LC_ALL=en_US**.
2. Run the **locale** command to verify changes.
3. Restart the installation and choose the language.

Server operation problems

Server operation problems in Software Use Analysis might include general issues that you might encounter while using the application and its functions. However, you can easily recover from these problems.

The RPM scanner fixlet fails on AIX® 6.1

The scanner fails and the RPM installation package returns `undefined` during the software scan. To remedy this problem, upgrade your IBM Endpoint Manager server, console, and clients to version 8.2.1175.

Version 8.0 and 8.1 BigFix® Enterprise Server Clients cannot subscribe to the Software Use Analysis server.

The solution is to unsubscribe all computers from the current site or remove the site, and then subscribe the clients back.

Import of the software scan data fails. After rerunning the import, the software inventory is empty.

One of the scenarios in which the problem occurs is when you run an import and the Endpoint Manager server is not running. After you restart the server and rerun the import, the software inventory is empty.

To solve the problem, manually initiate the scanner. Gather fresh scan data, and run the import.

When migrating signatures with a specified platform from Software Knowledge Base Toolkit to Software Use Analysis, the platform is changed to any.

After creating a signature from registry data with a specified platform in Software Knowledge Base Toolkit and migrating it to Software Use Analysis, the platform is changed to `any` There is no solution for this problem.

The software catalog cannot be downloaded because the Software Catalog Update task is not applicable.

When you install Software Use Analysis, the target computer sends information about the new software to the IBM Endpoint Manager server. Then, the IBM Endpoint Manager server checks the computers that are linked to it to verify that this particular endpoint is linked to this server. If it does, the server marks it with the custom setting `SUA_Server_Present`. If the setting is set to 1, the task is applicable.

The problem might occur because the setting was not specified for a particular endpoint. If you are sure that Software Use Analysis is installed on this endpoint, you can specify the setting manually. To do that, complete the following steps:

1. Log in to the IBM Endpoint Manager console that is linked to your IBM Endpoint Manager server.
2. In the navigation bar, click **Computers**.
3. In the right-upper pane, locate the endpoint on which you installed Software Use Analysis.
4. Right-click on the endpoint and select **Edit Computer Settings**.
5. Click **Add**.
6. In the Setting Name, type `SUA_Server_Present`.
7. In the Setting Value, type `1`.
8. Click **OK**.

The software scans cannot be initiated because the Initiate Software Scans task is not applicable.

The software scans depend on the scanner catalogs that are used by the scanner to discover software. The scanner catalogs are created when you upload the software catalog to Software Use Analysis. If you cannot run the software scans, it might mean that the catalogs were not created. Before you update the scanner catalogs manually, complete the following steps to check the cause of this problem:

1. Go to the `<BES_Client>\LMT\CIT` directory.
2. Check if the `catalog.bz2` file exists. The file contains the scanner catalogs.
3. Log in to the IBM Endpoint Manager console that is linked to your IBM Endpoint Manager server.
4. In the navigation bar, click **Actions**.

5. In the upper-right pane, locate the **Catalog Download** action and select it.
6. Check the details of the action. You can check on which endpoints the actions failed and investigate the failed steps. Try to determine the cause of the problem and fix it.

If you cannot determine the cause, you can update the catalogs manually. To do that, see Updating scanner catalogs.

The import fails because the transaction log is full.

After a failed import, the import log contains the following error:

```
Batch failure. The batch was submitted, but at least one exception
occurred on an individual member of the batch.
Use getNextException() to retrieve the exceptions for specific
batched elements. ERRORCODE=-4229,
```

Also, the following can be found in the `tema.log` file:

```
Batch execution error: Error for batch element #903:
The transaction log for the database is full.
```

To solve the problem, complete the following steps:

1. Increase the size of the transaction log for the database. For more information, see the **Tuning** section.
2. Restart the DB2 and Software Use Analysis servers.

The import fails because the Java heap size is too low.

After a failed import, the import log contains the following error:

```
E SRVE0777E: Exception thrown by application class
'java.lang.StringBuilder.ensureCapacityImpl:342'
java.lang.OutOfMemoryError: Java heap space
```

To solve the problem, increase the Java heap size. For more information, see the **Tuning** section.

The import fails and the following message is written in the logs: `Overflow occurred during numeric data type conversion.`

The problem occurs when you create a contract custom field that requires an integer value, and then enter a value that is greater than 32767. To solve the problem, enter a smaller value.

During the initial import, the following error is written in the logs: `Error was getaddrinfo: name or service not known (SocketError).`

During the initial import, the following error is written in the logs:

```
ERROR: Datasource file citsearch_0_4580013_cit.xml.bz2 raised an exception
while reading from {:port=>"52311", :path=>"/UploadReplication",
:query=>{:BaseDirectory=>1,
:Name=>"\\13\\4580013\\citsearch_0_4580013_cit.xml.bz2",
:sha1=>"5B0FE15F7E097171566F0AC3B9BE93826FDC0D41", :offset=>0}}.
Error was getaddrinfo: name or service not known (SocketError)
```

The problem might be caused by an incorrect DNS name settings. To solve the problem, ensure that Software Use Analysis can ping the IBM Endpoint Manager server by using the DNS name that is specified in the action site. To find the DNS name, on the computer where the IBM Endpoint Manager server is installed, go to the `C:\Program Files (x86)\BigFix Enterprise\BES Installers\Server`, and find the `ActionSite.afxm` file. If Software Use Analysis cannot ping the IBM Endpoint Manager server by using this DNS name, add the name to the `etc\hosts` file on the Software Use Analysis server.

A report was created correctly but it could not be sent as a PDF attachment to an email. The PDF report could not be sent because the mail server in your company does not accept large email attachments. To fix the problem:

1. Determine the size of large reports that are generated by Software Use Analysis: generate a sample PDF by clicking the **PDF** icon in the Software Use Analysis web user interface.
2. Contact your mail server administrator and request a higher size limit for email attachments in both the outgoing and incoming mail server configuration.

Data that is gathered by an analysis property is incorrect.

The same analysis property can exist in multiple external sites. In such a situation, the data that is gathered by the analysis might come from any of the sites, not necessarily the intended one. If some unexpected data is gathered by an analysis property, ensure that the analysis that you defined comes from the correct site. In the top navigation bar of Software Use Analysis, click **Management**, and then one of the properties: **Usage Properties**, **Package Properties**, **UNIX Package Properites**. Click the name of the property, and in the Data Source Property list, check whether the site is correct. The name of the site is displayed below the name of the property. If the site is incorrect, change it.

After restarting the computer, the Software Use Analysis user interface cannot be launched.

When you restart the computer on which you have Software Use Analysis installed, you must start the DB2 database before starting the application. Otherwise, you will not be able to log in to Software Use Analysis.

If you restart your computer, complete the following steps before starting the application:

1. Switch to the DB2 instance owner:
   ```
   su - db2inst1
   ```
2. Start the database:
   ```
   db2start
   ```
3. Restart Software Use Analysis:
   ```
   /etc/init.d/wlpserver stop
   /etc/init.d/wlpserver start
   ```

Entries in the Unrecognized Files report are empty.

This problem occurs if you choose to aggregate the unrecognized scan data for the **Next Import Only**. In such case, the unrecognized files are aggregated only for one import and the data is no longer available after running the second one. You can always view the top page of the report where the files are listed but you cannot access details for a particular entry.

If you want to use the report more often, go to **Management** > **Unrecognized Scan Data** and set the aggregation to **Every Import**.

User interface problems

User interface problems in Software Use Analysis are mostly related to information that is incorrectly displayed in the application or to errors that arise in the non-English-language versions of the software. However, you can easily recover from these problems.

On a low-resolution monitor, the user interface is not displayed correctly.

The minimal supported screen resolution is 1024x768 pixels.

On the Catalog Audit report, the values are displayed in an incorrect time zone.
Values that are related to dates and time are based on the time zone that is set in your operating system. However, the daylight saving time is not taken into consideration. Thus, values are set to an incorrect time zone.

When you leave a page while modifying data, there is no warning that the data will be lost.
When you modify data, for example, in one of the panels from the Catalog Customization menu, the data will be lost if you change the view or close the page. No warning is displayed. Ensure that you save all data before navigating to another view.

Text in reports cannot be selected when using Internet Explorer.
When trying to copy the content of the tables in reports, the text cannot be selected and copied when using the Internet Explorer browser. To solve this issue, use a different browser.

The user interface of Software Use Analysis is not displayed correctly in Internet Explorer
The problem occurs on Internet Explorer version 8. To solve the problem, use Internet Explorer version 9 or higher.

The `Import is now running` message is not refreshed even after the import is complete.
The page with the `Import is now running` message is not refreshed and the message is still displayed even when the import is complete. To solve this issue, you can hover over the Reports menu and check the percentage status of the import on the bottom of the drop-down list. You can also refresh the page manually.

The PDF reports open in the same browser tab as Software Use Analysis.
The generated PDF reports open in the same tab as Software Use Analysis. Because of this issue, you might be forced to stop any activity in the application until the PDF opens. To solve the issue, change the settings in your browser.

The PDF reports that are downloaded by using Firefox are corrupted.
Although the PDF reports are correctly displayed in the browser, the downloaded file is corrupted. The problem occurs in Firefox. To solve the issue, use a different browser.

Autocomplete suggests irrelevant results.
In some cases, autocomplete might suggest irrelevant results. For example, when you type IBM as a publisher and then start typing the software product, autocomplete will list all possible software products instead of only those that belong to IBM.

Paths for Korean and Japanese locales contain incorrect delimiter.
Paths for Korean and Japanese locales use a backslash (\) as a delimiter, instead of won (₩) or yen (¥).

There is a missing space before the colon (:) for French locale.
When a colon is used in text, there is a missing space before it although it is required in French language.

The string on the Browse button on the Catalog Upload panel is not displayed in languages other than English.
This error is caused by the web browser internal configuration and does not depend on Software Use Analysis.

Security problems

Security problems in Software Use Analysis might include issues with logging in to the application or those related to the security of your credentials. However, you can easily recover from these problems.

Login credentials and the authenticity token are stored as plain text in the HTTP packet.

After logging in, the login form that contains the credentials is sent as plain text in the HTTP packet. You can solve this issue by configuring SSL.

When creating a new user, autocomplete is enabled for the password field.

When creating a new user, the password field might be filled by autocomplete based on the password that is stored in the browser.

The server is not working properly after certificates are modified.

If the server is not working properly after certificates are modified and the server is restarted, then delete the keystore file `key_server.jceks` and restart the server. The keystore file is regenerated with a self-signed certificate. You can investigate the problem in the `tema.log` file.

Difficulty establishing a connection with HTTPS.

If you have difficulty when establishing a connection with HTTPS and you are using SSL, check that your browser supports TLS 1.2 and that it is enabled.

VM managers problems

Find the solution to the issues that you have encountered while working with virtual machine managers.

Error message CODVM0005E is displayed when attempting to connect to the VM manager over SSL.

When trying to connect to the VM manager over SSL, an error message is displayed: `CODVM0005E An error occurred when attempting to connect to the VM manager at the following address: hostName`. To solve the problem, complete the following steps:

1. Go to https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?source=jcesdk.
2. Provide your IBM ID and password and click **Sign in**. You might need to register with IBM to download the files.
3. Select **Unrestricted SDK JCE Policy files for Java 5.0 SR16, Java 6 SR13, Java 7 SR4 and later versions** and then click **Continue**.
4. View the license agreement, select **I Agree**, and then click **I confirm**.
5. Click **Download Now**.
6. Extract the files and copy them to the following directory:
   `<BES_Client>/LMT/VMMAN/java/jre/security`
7. Restart the server.

Server is running, but an exception in traces appears. The exception is related to the connection with the specified ESX with the following message: `javax.net.ssl.SSLException: Unrecognized SSL message, plaintext connection?`

1. Add the following lines to file `/etc/vmware/hostd/config.xml`:

```
..
    <ssl>
       <doVersionCheck> false </doVersionCheck>
       <handshakeTimeoutMs>30000</handshakeTimeoutMs>
    </ssl>
```

```
<http>
    <readTimeoutMs>45000</readTimeoutMs>
    <writeTimeoutMs>45000</writeTimeoutMs>
    <blacklistPeriodMs>3000</blacklistPeriodMs>
</http>
<vmdb>
  ...
```

2. Restart the hostd service using **service mgmt-vmare restart**.
3. Verify that the exception does not occur.

Server is running, but an org.xml.sax.SAXParseException exception in traces appears. The exception is related to the connection with the specified ESX.
Make sure you have the latest patches to your problematic ESX server installed.

Upgrade of vCenter server from v5.0 to v5.1 causing server connection failure.
The following message is displayed `CODVM0003E The VM manager denied access because of invalid credentials`. To solve this issue, perform the following steps:

1. In vCenter, stop all sessions under a user name that is defined as a user credential in VM manager for specific vCenter.
2. Remove this user name.
3. From vCenter, add the user name back with read-only or propagation authorities.
4. Redefine the VM manager entry for this specific vCenter using the same user name credential.

Specification of the domain for the User Name for VM Managers is inconsistent.
Different definitions of users are used for Microsoft Hyper-V and VMware:

- For Microsoft Hyper-V, the user is defined as *user_name**domain*, for example: `test\cluster.com`
- For VMware, the user is defined as *domain**user_name*, for example: `cluster.com\test`

Changes to the VM managers are not updated on the IBM Endpoint Manager server. Changes to the VM managers are not updated on the IBM Endpoint Manager server and the following error message is displayed in the VM Managers panel: `The last modification of VM managers was not processed correctly on the IBM Endpoint Manager server. The data is not synchronized with the VM Manager Tool.`

To solve the problem, make sure that the VM Manager Tool is installed. You can also check the history of the Configure VM Manager Tool action in the IBM Endpoint Manager console to investigate the failed step. Additional information can also be found in the IBM Endpoint Manager console log files that are in one of the following directories:

- Windows `C:\Program Files (x86)\BigFix Enterprise\BES Client\__BESData\__Global\Logs`
- Linux `/var/opt/BES Client/__BESData/__Global/Logs`

The connection test does not finish.
Data from VM managers is not updated on the IBM Endpoint Manager server.
If you run a connection test for a VM manager and it does not finish, it might indicate a problem with the IBM Endpoint Manager client that is installed on the IBM Endpoint Manager server. If the client is stopped, actions that you perform in Software Use Analysis are sent to the IBM

Endpoint Manager server but the status is marked as Not reported. To determine further actions, investigate the IBM Endpoint Manager client that is installed on the IBM Endpoint Manager server.

For the same reason, data from VM managers might not be uploaded to the IBM Endpoint Manager server. Check the value in the Last Successful Operation column to verify if the data was recently sent to the server.

Actions that are performed in the VM Managers panel, such as testing the connection or adding a new VM manager, fail.

If actions that you perform in the VM Managers panel fail, you can log in to the IBM Endpoint Manager console that is linked to your primary data source and check the history of recent actions, such as Configure VM Manager Tool or VM Manager Tool - connection test. By doing so, you can investigate details of the failed step and determine the solution. If you are not sure which data source to connect to, log in to Software Use Analysis and click **Management** > **Data Sources**.

To check the history of recent actions, complete the following steps:

1. Log in to the IBM Endpoint Manager console that is linked to your primary data source.
2. In the navigation tree, click **Computers**.
3. In the upper-right pane, select the computer that is defined as your primary data source.
4. In the lower-right pane, click the Action History tab.
5. Double-click on one of the recent actions that failed:
   - If the connection test was unsuccessful, check the VM Manager Tool - connection test action.
   - If modification of VM managers failed, check the Configure VM Manager Tool action.
6. In the new window, click the Computers tab.
7. Double-click on the action.
8. Locate the failed step and check the details.

The VM Managers panel is blocked or contains error messages.

The VM Managers panel is either blocked completely, with no possibility of performing any actions, or it contains one of the error messages that instruct you to install the VM Manager Tool or the IBM Endpoint Manager services.

To solve the problem, complete the following steps:

- Ensure that the IBM Endpoint Manager server and client are installed on the target endpoint.
- Install and start Web Reports on the IBM Endpoint Manager server.
- Subscribe the IBM Endpoint Manager server to the IBM Endpoint Manager for Software Use Analysis site.
- Make sure that the content of the IBM Endpoint Manager for Software Use Analysis site is up-to-date. If your computer does not have access to the Internet, see Downloading files in an air-gapped environment.
- Subscribe the target endpoint to the IBM Endpoint Manager for Software Use Analysis site.
- Make sure that the VM Manager Tool is installed. For more information, see Installing VM Manager Tool.

Removing the server manually

If you encounter any problems with uninstalling the Software Use Analysis server, you can remove it manually.

Procedure

1. Run the following command to verify that the process associated with the server is running:

   ```
   ps -ef | grep <installation dir>/cli | grep server1
   ```

   Tip: The ID of the process is the number next to the user name.
2. End the process by running the following command:

   ```
   kill -9 <process ID>
   ```
3. Remove the directory in which you installed Software Use Analysis:

   ```
   rm -rf <installation dir>
   ```

   For example:

   ```
   rm -rf /opt/IBM/SUA
   ```
4. Edit the `.com.zerog.registry.xml` file that is in the `/var` directory. If you installed the server as a non-root user, the registry file is in `$HOME/`.
5. In the registry file, locate the entries that are related to Software Use Analysis. Remove the entries that represent the product and all the related components. You can recognize them by the product name and a common file path. If the registry file contains entries only for Software Use Analysis, you can delete the whole file.

Backing up and restoring the database

Perform regular backups of the data that is stored in the database. It is advisable to back up the database before updating the software catalog or upgrading the server to facilitate recovery in case of failure.

Backing up the database

You can save your database to a backup file.

Procedure

1. Stop the Software Use Analysis server.
2. Check which applications connect to the database and then close all active connections:
   a. List all applications that connect to the database:

      ```
      db2 list applications for database SUADB
      ```
   b. Each connection has a handle number. Copy it and use in the following command to close the connection:

      ```
      db2 force application "( <handle_number> )"
      ```
3. Optional: If you activated the database before, deactivate it:

   ```
   db2 deactivate db SUADB
   ```
4. Back up the database to a specified directory:

   ```
   db2 backup database SUADB to <PATH>
   ```

Restoring the database

You can restore a damaged or corrupted database from a backup file.

Procedure

1. Stop the Software Use Analysis server.
2. Check which applications connect to the database and then close all active connections:
   a. List all applications that connect to the database:
      ```
      db2 list applications for database SUADB
      ```
   b. Each connection has a handle number. Copy it and use in the following command to close the connection:
      ```
      db2 force application "( <handle_number> )"
      ```
3. Optional: If you activated the database before, deactivate it:
   ```
   db2 deactivate db SUADB
   ```
4. Restore the database from a backup file:
   ```
   db2 restore db SUADB from <PATH> taken at <TIMESTAMP> REPLACE EXISTING
   ```

   Example:
   ```
   db2 restore db SUADB from /home/db2inst1/
   taken at 20131105055846 REPLACE EXISTING
   ```

Logs and return codes

Find logs and interpret return codes to troubleshoot issues.

Server installation logs

The installer generates log files with information that can help you check why an installation failed, or if a server installed successfully.

Log files created during installation

If you encounter problems while the installer is running, analyze the log file in the `$HOME/SUA9.0.0.0` directory, and the `$HOME/ia.log` file.

Log files created after an incomplete installation

If you encounter problems after the installer ran and the installation is not completed, analyze the log files that are contained in the `$HOME/SUA_9.0_`*`timestamp`*`_logs.tar.gz` archive file.

Log files created after a successful installation

Log files that are generated after a successful installation are contained in `install_path/SUA_9.0_timestamp_logs.tar.gz` archive file.

Log file contents

To understand the root cause of installation problems, review logs for messages with a severity level of WARN or ERROR. The following example shows a warning messages.

```
<Message Id="CODIN0215W" Severity="WARN">
 <Time Millis="1381929782997"> 2013-10-16 15:23:02.997+02:00</Time>
 <Server Format="IP">NC040226.kraklab.pl.ibm.com</Server>
 <ProductI>dCOD</ProductI>d
 <Component>Install</Component>
 <ProductInstance></ProductInstance>
 <LogText><![CDATA[CODIN0215W The following ports are in use: 9081, .
The installation process can be continued but the server will not be started.
```

```
The server has to be started manually after resolving the ports conflict.]]></LogText>
 <Source FileName="com.ibm.license.mgmt.install.ia.common.CommunicationCommon"
 Method="okToContinue"/>
 <TranslationInfo Type="JAVA" Catalog="userLocales.InstallMessageEWI" MsgKey="checkPorts">
 <Param><![CDATA[9081, ]]></Param></TranslationInfo>
 <Principal></Principal>
</Message>
```

Server log file

The server log file `tema.log` is in the *install_dir*`/wlp/usr/servers/server1/logs/` directory.

Settings that you can modify

Logging properties are set in the `server.xml` file. The `server.xml` file is in the *install_dir*`/wlp/usr/servers/server1` directory.

You can change the following settings:

messageFileName
The server log file name. The default name is `tema.log`.

logDirectory
The server log file location. The default location is *install_dir*`/wlp/usr/servers/server1/logs/`.

maxFileSize
The maximum size (in MB) that a log file can reach before it is rolled over. To disable this attribute, set the value to 0. By default, the value is 10.

maxFiles
If an enforced maximum file size exists, this setting is used to determine the maximum number of iterations of the server log file. If the log file reaches the maximum size that is defined in the **maxFileSize** parameter, the remaining messages roll over to another iteration of the file.

Log level

The log level controls which events are recorded in the server log file. The log level is set in the `log4j.properties` file. The `log4j.properties` file is in the *install_dir*`/wlp/usr/servers/server1/config` directory. You can use the `log4j.rootCategory` property to change the logging level. The default level is INFO. The following is a list of the possible log levels:

FATAL
Task cannot continue and component, application, and server cannot function.

ERROR
Error events that might still allow the application to continue running.

WARN
Potential error or impending error. This level can also indicate a progressive failure.

INFO General information that outlines the overall task progress.

DEBUG
Fine-grained informational events that are most useful to debug an application.

Import logs

You can access data import log files in the *install_dir*/wlp/usr/servers/servers/server1/logs/imports directory.

The latest import log can also be accessed from the navigation bar. Click **Management** > **Data Imports**.

Database creation logs and return codes

The create database script createdb.sh generates a log file with information that can help you check why database creation or validation failed. The createdb.sh log is in the /tmp directory. The file has a time stamp suffix, for example: /tmp/createdb_*20131018-131841*.

Return codes

Check the return code to find the reasons for database creation problems.

Table 1. Return codes for the create database script

Return code	Description and possible solutions
0	Database successfully created.
1	Help message is displayed, or incorrect syntax.
100	One or more errors occurred during the database creation. Database creation error. Check the database creation log: creation log /tmp/createdb_latest_timestamp.
101	Database already created.
102	One or more errors occurred during the database validation. There is something wrong with the DB2® commands run from the script. The script requires a correctly initialized DB2 environment.
103	The DB2 version could not be correctly read from the **db2level** command. The **db2level** command returned the DB2 version string in an unexpected format. DB2 10.1 FP 2 or later WSE, ESE or AESE editions are supported.
104	Unsupported database version. DB2 10.1 FP 2 or later WSE, ESE or AESE editions are supported. You can check the version by running the **db2level** and **db2licm -l** commands as the SYSADM user.
105	An unsupported edition of the database was found in the system. DB2 10.1 FP 2 or later WSE, ESE or AESE editions are supported. You can check the version by running the **db2level** and **db2licm -l** commands as the SYSADM user.
127	Cannot run the **db2** command. Incorrectly configured DB2 instance. The user that runs the script must have SYSADM authority. Try to run the script as the DB2 instance owner.

Server installation and uninstallation return codes

If the server installation or uninstallation fails, check the return code to find the reason of the problem and possible solutions.

The table lists return codes that are logged during the installation or uninstallation of the Software Use Analysis server.

Table 2. Server installation and uninstallation return codes

Return code	Possible cause and solutions
0	The server was successfully installed.
5	An unexpected error occurred.
6	An unexpected exception occurred.
7	An internal error occurred. The installer failed to save the file with information that was collected or generated during the preinstallation stage.
8	The installation was canceled.
9	A post-installation step was terminated before it was finished. Problems with resuming the installation might occur.
11	Validation of the communication ports failed. Either the same port is specified for more than one parameter or the specified port is in use. If you want to specify a port that is temporarily used but will be available later, set the **RSP_DISABLE_COMMUNICATION_WARNINGS** parameter to `true`.
13	Validation of the license agreement failed. Either the license agreement was not accepted or the path to the installation response file is not an absolute path. To accept the license agreement, set the **RSP_LICENSE_ACCEPTED** parameter to `true`.
14	There is not enough space for the installation. To check how much free disk space is required to proceed with the installation, see the following installation log: *installation_directory*`/SUA_9.0_`*timestamp*`_logs.tar.gz`.
18	Validation of the installation path failed. Either the specified path is incorrect or the installation directory is in read-only mode.
20	An unknown response file parameter was specified. Remove the parameter from the installation response file.
21	The response file was not found. It is either empty or contains Windows line endings instead of UNIX ones.
23	The command-line interface or another application from the Software Use Analysis installation path is still running. Either end the process manually or set the **RSP_AUTO_CLOSE_PROCESSES** parameter to `true`.
26	An internal error occurred. Creation of the log directory failed.
27	It was impossible to recognize the environment, for example, installed products.
28	The upgrading scenario is not supported.
29	A part of Software Use Analysis that is already installed, is corrupted.
30	The uninstallation wizard could not find product information in registries. Software Use Analysis was already uninstalled.
31	The host name was not obtained. To verify the host name, in the command-line interface, enter the following command: `nslookup` *host_name*
32	An exception was detected while reading the `setup.ini` file.
33	An attempt of creating a log directory in the installation path failed because a file called `SUA9.0.0.0` already exists. To proceed with the installation, delete the file.
34	The log directory is in read-only mode.
35	The system `TEMP` environment variable does not point to a valid directory.
36	Installation in console mode is not supported. Use interactive or silent mode.
37	The required resources could not be extracted from the installation image.

Table 2. Server installation and uninstallation return codes (continued)

Return code	Possible cause and solutions
38	The required resources could not be found inside the installation image.
41	The post-installation failed.
42	Another instance of the installer is already running.
46	The post-installation was interrupted.
50	Resuming a failed installation in silent mode is not supported.
55	All elements of the infrastructure are already installed.
59	An internal error occurred. Contact IBM support.
214	The uninstallation process could not connect to the X server. Verify that the `DISPLAY` variable is properly set and points to a working X server.

Contacting IBM Software Support

IBM Software Support provides assistance with product defects.

Before you begin

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. For information about the types of maintenance contracts available, see "Enhanced Technical Support" in the *Software Support Handbook* at: http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html

About this task

Complete the following steps to contact IBM Software Support with a problem:

Procedure

1. Define the problem, gather background information, and determine the severity of the problem. For help, see "Contacting Software Support" in the *Software Support Handbook*.
2. Gather diagnostic information.
3. Submit your problem to IBM Support in one of the following ways:
   - Online: Visit the IBM Software Support site: www.ibm.com/software/support/probsub.html
   - By phone: For the phone number to call in your country, go to the "Contact Information" section of the *Software Support Handbook*.

What to do next

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM Support website daily, so that other users who experience the same problem can benefit from the same resolution.

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