IBM Sterling B2B Integrator

IBM

Business Process Troubleshooting

Release 5.2

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Contents

Business Process Troubleshooting

Sometimes you may need to troubleshoot your IBM® Sterling B2B Integrator business processes to determine why something is not working as you intended.

Restarting and Resuming Business Process Instances

When your monitoring activities with IBM Sterling B2B Integrator uncover a process instance with a state of waiting, interrupted, or halted, or you have stopped a process for some reason, such as to correct a problem before the process continues, you may want to resume or restart the process.

Some distinctions can be made between resuming and restarting a process. The following list describes the three options you have for re-activating a stopped process instance, and when to use each:

Resume

Continues a process from the last step that fully completed (including full configured persistence). The instance retains its original instance ID.

Use this function when the error is related to services. For example, if a service is unavailable unexpectedly, a business process using that service stops at that point. After the service is restored and active, you can resume the business process.

Simple Restart

Starts a new instance of the same business process from the beginning (with the same document). The new process receives a new instance ID.

Advanced Restart

Runs the original document using the default version of a different business process model (you can select the default version of any process model saved in the system).

The new instance receives a new instance ID. Use this function when the error is related to the business process BPML code.

Viewing Execution Information after a Process Resumes or Restarts

When you restart or resume a business process, Sterling B2B Integrator opens the Execute Business Process page, which is like the Business Process Detail page. This page lists the service, status, advanced status, start and end times, troubleshooting reports, and documents for each step completed within a recently run business process.

Note: The information icon ( ) indicates that troubleshooting data is available. Click the link to view it.

Taking Actions with a Single Business Process Instance

About this task

To restart, resume, stop, expedite or terminate a single business process instance:

1

Procedure

1. From the Business Process Monitor, select the Instance ID for the appropriate process.
2. In the **Action** field, select **Restart**, **Stop**, **Expedite**, or **Terminate**, and click **Go!** The options displayed are the only options available for the selected instance or instances.

   Note: If you want to resume the process, select **Restart**.
3. Did you terminate or expedite the process instance?
   - If Yes, when Sterling B2B Integrator prompts you to confirm that you want to terminate or expedite the process, click **OK**. Skip step 5.
   - If No, proceed to step 5.
4. Complete one of the following actions:
   - To continue the business process instance from the point at which it stopped, in the Resume area of the page, click **Go!**
   - To restart the process from the beginning with a new instance ID, in the Simple Restart area, click **Go!**
   - To process the original document using a different business process model, in the Advanced Restart area, select the business process model you want to use for this new instance and click **Go!** The system runs the designated default version of the process you selected.

     A new page displays the execution of the selected action. If the business process runs to completion, you are finished. If the resumed or restarted business process stops responding, you must find and correct those errors before the business process can complete.

Taking Actions with One or More Business Process Instances Simultaneously

About this task

To resume, restart, stop, expedite, or terminate multiple process instances:

Note: You cannot perform an advanced restart, using a different business process model, using this procedure.

Procedure

1. From the **Administration** menu, select **Operations** > **System** > **Troubleshooter**.
2. Under System Status, select **Business Process Usage**.

   The system returns a list of processing states; when current process instances are in any of the listed states, an active link enables you to view the processing information for those instances.
3. Click the link to view the Monitor, showing the processes in the state you selected. For example, if the Business Process Usage monitor displays the following:

   Halted 9 (where 9 is the number of halted business process instances)

   You can click the number 9 to display the Monitor.
4. Click the check box under **Select** next to the instance or instances you want to restart, resume, stop, expedite or terminate. Select instances that you want to perform the same action on. To perform different actions, complete this procedure a separate time for each action.

5. In the **Activities** field, select **Restart**, **Resume**, **Stop**, **Expedite**, or **Terminate** and click **Go!** The options displayed are the only options available for the selected instance or instances.

6. When Sterling B2B Integrator prompts you to verify your selection, click **OK**.

Terminating and Restarting a Business Process

About this task

If a business process stops running, you can use the System Troubleshooter page to review the business process and to terminate and restart the business process when you see a state of Halted, Waiting, Waiting_On_IO, Interrupted_Man, or Interrupted_Auto. The System Troubleshooter page enables you to terminate and restart processing for business processes in one click.

To review, terminate, and restart a business process:

Procedure

1. From the Operations menu, select **System** > **Troubleshooter**.

2. In the System Troubleshooter page, under System Status, click **Business Process Usage**. The Business Process Usage page displays showing the state and process count of the business process. A link appears in the Process Count column if any of the following states appear:
   - Halted
   - Waiting
   - Waiting_On_IO
   - Interrupted_Man
   - Interrupted_Auto

3. In the Process Count column select the link of the business process you want to view. The business process instance appears.

4. In the select column, select the business process you want to terminate and restart.

5. In the **Activities** fields, select **Terminate And Restart** and click **Go!**

6. When Sterling B2B Integrator prompts you to verify that you are sure you want to terminate the business processes, click **OK**.

7. To verify that Sterling B2B Integrator terminated & restarted the business processes, review the report.

   Note: The Terminate and Restart Business Operations can only be applied to NON_ACTIVE workflows and is only available when a state both the Terminate and Restart operations.

Tips for Troubleshooting Your Processes

You can troubleshoot your business processes using various techniques.

What Happens to Subprocesses When I Terminate a Process?

When an instance is terminated, subprocesses required to continue this process report an error and stop with a halted state. The termination does not affect any subprocesses that are not meant to continue the parent process.

Using Properties Files to Dynamically Gather Business Process Information

Rather than hard coding variables directly within the business process model, one way you can save time gathering processing information is to use properties files to dynamically gather information. This can help with tracking down issues, and ultimately help Customer Support to recreate any problems more easily.

For example:

1. Create a properties file named "joeuser.properties" in your *install_dir*/properties directory.

2. Place a string "Testing=JOEUSERTEST" (without the quotes) within the file and save it.

3. Create a business process to pull that value in:

```
<process name="joeuser_property">
  <sequence>
    <assign to="VAR1" from="sci-get-property('joeuser', 'Testing')"></assign>
  </sequence>
</process>
```

The result, in process data is:

```
<?xml version="1.0" encoding="UTF-8"?>
<ProcessData>
<VAR1>JOEUSERTEST</VAR1>
</ProcessData>
```

You can use this technique for multiple variables. In this way, instead of hard-coding information that may eventually change within the process model, you can use the sci-get-property function to assign information from the properties files. This gives you the ability to centralize and only change one value (in the properties file) rather then throughout all your process models.

Why Is Linkage Information Between Parent and Subprocess Lost?

In certain circumstances you may find that linkage information between a parent process and subprocess is lost. Specifically, if your database has an isolation level setting, and the setting has the standard default value of Read Uncommitted, there is a possibility that you may lose linkage information (although no data is lost) if the following scenario occurs:

- A service or adapter is within a multiple step transaction, or the business process' Enable Transaction option is enabled
- The bootstrap adapter or parent process initiates a subprocess that has a persistence setting of Error Only
- The bootstrap adapter step, parent business process, or subprocess fails

Normally, Sterling B2B Integrator saves linkage information, but when the persistence setting is Error Only, no data is persisted unless and until an error occurs. Therefore, if the bootstrap step in this scenario encounters an error before the subprocess does, and the parent process is persisting data, the linkage information will be lost.

To prevent this loss of linkage information, set the database isolation level to Read Committed.

Index Service Status Report May Be Wrong

When the database cannot read the summary information of a business process, the status report of the Index service may be inaccurate. The report lists all business process IDs, when only the summary information for one ID cannot be read. Review the report for the Index service for possible error indications. The following example shows a report that lists IDs where summary information could not be obtained:

```
Indexing following complete business process:
1304
Can't get summary information for business process
1304,1305,1306,1308,1309,1310,1311,1347,1348,1349,1350,1351,1352,1353,1354,1355,1
356 ,1357,1358,1359
1360,1361,1362,1363,1364,1365,1366,1367,1368,1369,1370,1371,1372,1373,1374,1375,1
376 ,1377,1378,1379
1380,1381,1382,1383,1384,1385,1386,1387,1388,1389,1390,1391,1392,1393,1394,1395,1
396 ,1397,1398,1399
1400,1401,1402
Indexing following terminated business process:
Total number of Business Processes successfully indexed:62
```

Only business process 1304 had an error for summary information. The remaining business process instances were successfully indexed. When viewing the summary information, disregard all IDs listed after the first. Only the first ID reflects an error condition.

Responding to Different Status and State Indicators

While monitoring and troubleshooting processing, you will find that processes pass through a variety of states. You can take certain actions when you encounter different status indicators and state designations for a business process instance:

Status Indicator Red Light Red light status indicator

Active

1. View details to identify whether errors or warnings justify stopping the business process instance.
2. Stop the instance if necessary.
3. Correct the errors.
4. Resume or restart the instance and run the same document.

Halting

1. Wait for the business process instance to stop.
2. View details to identify errors or warnings.
3. Correct the errors.
4. Resume or restart the instance and run the same document.

Sterling B2B Integrator does not archive or purge data for halted instances. To archive or purge an instance, you must terminate it.

Halted

1. View details to identify errors or warnings.
2. Correct the errors.
3. Resume or restart the instance and run the same document.

Interrupted_Man

1. Confirm the reason for the interruption.

2. Resume or restart the instance and run the same document.

Interrupted_Auto

1. Confirm the reason for the interruption.
2. Resume or restart the instance and run the same document.

Terminated

1. View details to identify errors or warnings.
2. Correct the errors.
3. Restart the process and run the same document, or let the system's automated archive /purge process clean up the terminated instance.

Waiting

1. View details to identify whether errors or warnings, such as subprocesses holding up processing, justify terminating the business process instance.
2. Check the errored subprocess and resume it or terminate it.
3. Terminate or restart instance.

If you terminate this instance, the state may change in the following order as Sterling B2B Integrator terminates the instance: Waiting > Halting > Halted > Terminated.

Status Indicator Green Light

Active

1. Wait for the business process instance to complete or monitor processing in real time.
2. Check the accuracy of results, if appropriate.
3. If the results are inaccurate, modify the business process model, check in the new version, and run the same document with the new version.
4. Determine whether the new results are accurate.

Active processes may have a substatus of *In Queue*.

Completed

1. Check the accuracy of results, if appropriate.
2. If the results are inaccurate, modify the business process model, check in the new version, and run the same document with the new version.
3. Determine whether the new results are accurate.

Resolving Business Subprocess Errors

About this task

If a business process remains in a waiting state for the subprocess to return for further processing, complete the following actions:

Procedure

1. Terminate the business process and the business subprocess.
2. Correct any service configurations.
3. Restart the business process.

Resolving Lock Errors

If Sterling B2B Integrator is shut down in the middle of indexing business processes, the lock that it holds is not released, causing subsequent indexing business processes to fail. The lock is held for 24 hours. The lock should be configured to be released on startup, and the amount of time that a lock is held should be decreased to a value less than 24 hours. To release the locked business process, complete the following action:

1. From the **Operations** menu, select **Lock Manager**.
2. List all locks.
3. Manually unlock the lock used by IndexBusinessProcess.

Resolving Persistence Errors

When the following conditions are met, the error is not persisted and the business process remains in an active state:

- Persistence is BP Start/Stop for the business process.
- Persistence is Force None for the service.
- The business process takes an error on the step in which the service has persistence set to NONE.

Check the logs to find error messages associated with the failed step. If error messages are required, do not set the business process persistence level to BP Start/Stop. Set it to Full or Step Status - Engine May Override instead. After the Recovery job runs, it marks the business process as interrupted. You can then resume the process.

Resolving Database Errors

If you receive an error describing that the business process failed because database could not receive it, complete one of the following actions:

- If you received this error when Sterling B2B Integrator attempted to start the business process, run the business process again.
- If you received this error while a business process is running, resume or restart the business process.

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Index

B
business process
    database error   7
    execution information   1
    lock error   7
    multiple restart, resume, stop,
      expedite or terminate   2
    persistence error   7
    restarting and resuming, concepts   1
    subprocess error   6

E
error
    business subprocess   6
    database   7
    lock   7
    persistence   7
    status indicators and state
      messages   5

I
Index service status report   5
instance ID, and restarted processes   1

L
link data lost between parent and
  subprocess   4

M
monitoring
    according to state messages   5

P
persistence level   7
properties file, using to gather
  information in process   4

R
resume and restart concepts   1

S
subprocess
    and terminated parent   3
    linkage information to parent lost   4

T
terminated processes, and
  subprocesses   3
troubleshooting tips   3

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