

Sterling Standards Library



Using Correlations

Version 8.04, for Sterling B2B Integrator 5.24

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Note

Before using this information and the product it supports, read the information in "Notices" on page 21.

Copyright

This edition applies to the 8.0.4 Version of the IBM Sterling B2B Integrator and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. Correlations

*Correlation data, often called correlations, is defined as specific pieces of data that you may need to review in the process of monitoring, tracking, and troubleshooting your activities. These data items are defined by type and value. These type-value pairs are known as *name-value pairs*, and are a powerful tool you can use to record and search for business process- and document-specific data. The name-value pair records are stored in the correlation table in the Sterling B2B Integrator.*

Defining correlations can be part of configuring your business process models and maps. Taking the time to determine the name-value pairs for monitoring and troubleshooting, and configuring them in maps and business process models, can save you time later.

Correlations can be predefined (provided in certain Sterling B2B Integrator services), defined by you, and configured at the map level:

- You can assign name-value pairs to a service in a process model using the Service Editor in the GPM.
- You can create unique name-value pairs for a service using the Service Editor in the GPM.
- You can define name-value pairs and include the service in a business process model. This enables you to search for the data items you need using advanced search options in the Sterling B2B Integrator user interface.
- You can configure correlation data using standard rules in a map, to specify that data is extracted from a document when it is translated. The Update standard rule *correlation data* function enables you to record document-specific correlation parameters during translation. These correlation parameters are attached to the translated document. You can then use the Correlation Search user interface to locate the translated document using the criteria you specified in the map through the Update standard rule. This function may save you effort, because you would otherwise need to locate the translated document by reviewing the results from a Central Search query.

In addition, some Sterling B2B Integrator services have predefined correlations that are generated automatically when a process runs —such as EDI, CII, FTP, and HTTP services.

Examples of correlation name-value pairs include:

Name Example value

Invoice number

PO123

(or any other possible invoice number used by your organization)

Document type

850

(or any other document type identifier configured in the Correlation service, such as inbound acknowledgement, purchase order, and so forth)

Map AdvanceShippingReceipt_MapName

(or the name of any map)

Document sender

Sender ID

Service

DocumentExtractionService
(or the name of any other service used)

Chapter 2. Correlation Search Feature

Correlation searches rely on name-value pairs that define the specific data items you are trying to locate. These defined name-value pairs are tracking points for business processes and documents. The Correlation search feature offers the following benefits:

- You can receive the results of search queries more quickly.
- You can further refine document correlation searches by specifying matching restrictions for the indicated value of a name-value pair.
- You can further refine correlation searches by specifying a start and end date/time range.
- You can further refine EDI correlation searches by specifying a start and end date/time range for All levels.

You can also perform an advanced search for EDI correlations, created when completing document exchange, at the following levels:

- All (all levels of document exchange)
- Interchange
- Group
- Transaction

When you perform a correlations search query, the number of results is limited by a property value. You will receive a message when the number of results exceeds the value. This functionality further speeds search queries. You can change the property value to a number of results that is appropriate for your installation but if you choose to return more results, this may degrade your system processing. More system resources are required when you increase the size of the result set — therefore, if you set the number of results too high when you are processing a very large amount of data, system performance may be adversely affected.

Searching for Documents Using Correlations

You need to consider that you can obtain even more tracking ability if you specify the type of information that is most important to you and your organization by using the Correlation feature in the Sterling B2B Integrator. Before running business processes or transmitting documents, consider:

- The type of information that might be useful for searching and tracking documents.
- Edges (that is, the entry of a document to and exit from the Sterling B2B Integrator system) are important — services and adapters should track any system-dependent identifiers for documents entering and leaving the system.
- Adapters may require explicit code enhancements to enable document tracking.
- Document correlations provide a consistent unification to associated business processes and the ensuing services and adapters.

You can track a document throughout its life cycle, provided you previously specified the document information and turned document tracking “on” when you checked in the business process. Sterling B2B Integrator enables you to search for documents by:

- Location
- Date and Time processed
- Sender and Receiver IDs
- Correlations (includes searching for values that equal, begin with, or contain a specified value)
- Document ID

Some examples are:

- The IBM Sterling B2B Integrator Map Editor Update standard rule *correlation data* function enables you to record document-specific correlation parameters during translation. These correlation parameters are attached to the translated document. You can then use the Correlation Search user interface to locate the translated document using the criteria you specified in the map through the Update standard rule. This function saves you time, because you would otherwise need to locate the translated document by reviewing the results from a Central search query.
- The Correlation Data Update standard rule, the Correlation service in a business process, or the Correlation Search enables you to retrieve specific invoices or find out what happened to specific purchase order numbers.
- The Correlation service enables you to specify detailed search criteria that the Sterling B2B Integrator then uses to search for and display the documents that match your criteria, and is used to create business process-level correlations from information in ProcessData.
- You can search for failed SWIFTNet MT and MX messages and repair (and validate) them using the Message Editor interface.

Note: Searching for SWIFTNet messages created through the SWIFT Message Entry Workstation is performed using search functions directly on the SWIFT Message Entry Workstation page.

- You can track CIDX messages (and the messages of many other standards) through their lifecycle.

Chapter 3. Correlation Search Feature Installation

This `useNewCorrelationSearch` property is set by the Sterling B2B Integrator patch install as follows:

- If you are using a MySQL database, the Sterling B2B Integrator patch install process occurs in offline mode (that is, the Sterling B2B Integrator is shut down during the patch install process), and the value of the new `useNewCorrelationSearch` property is set to **True** after the patch install (meaning the new correlation search functionality is enabled).
- If you are using a non-MySQL database and you have less than the threshold number of rows in the `CORRELATION_SET` table, the patch installs all items and the value of the new `useNewCorrelationSearch` property is set to **True** after the patch install (meaning the new correlation search functionality is enabled). For users with relatively smaller databases, the patch install process occurs in offline mode.

Note: The threshold is 10 million rows for Oracle and MSSQL databases, and 5 million for other databases, such as DB2® UNIX and DB2 iSeries®.

- If you are using a non-MySQL database and you have more than the threshold number of rows in the `CORRELATION_SET` table, the patch process is two-step process. The value of the `useNewCorrelationSearch` property is **False** after the first step in this process and it is **True** after the second step.
 - The first step in this process is to install the patch, which applies the minimal items required and displays a message prompting you to run a command-line based tool called `cs_conversion_tool.sh` or `cs_conversion_tool.cmd`. This tool is run from the `install_dir/bin/` directory.
 - The second step is to run the command-line based tool and, once the command-line based tool completes, you must restart the Sterling B2B Integrator. For relatively large enterprise databases, the Sterling B2B Integrator will be shut down for the minimal tasks, but other patch install tasks are performed in online mode.

You do not need to take any action in regard to this property unless you want to use the old functionality for some reason. In that case, you need to access the `install_dir/properties/cssearch.properties` file and set the `useNewCorrelationSearch` property to **False**. This will enable you to return to the previous state (using the old correlation search functionality), without impacting your system.

Enable the New Correlation Search

In the `install_dir/properties/cssearch.properties` file, the `useNewCorrelationSearch` property enables the correlation search functionality if it is set to **True**.

If you are installing the Sterling B2B Integrator for the first time, the correlation search functionality is automatically enabled. If you upgrade your installation, the correlation functionality is enabled when patch installation is complete. For large enterprise databases (other than MySQL), the patch installation may be a two-step process. Unless you receive a prompt to run the correlation conversion command-line tool, or you choose to revert to the previous correlations search options, you do not need to take additional action. To summarize, depending on

which database you are using the patch install process may be different, but the new **useNewCorrelationSearch** property is always updated automatically to the **True** value so you can automatically use the new correlation search functionality.

Chapter 4. Search for Correlations

About this task

To search for correlations:

Procedure

1. From the **Administration** menu, select **Business Processes > Advanced Search > Correlation**.
2. Select the start and end dates and times within which the correlated data you are searching for can be located. Using the following formats, type the date and time range and select **A.M.** or **P.M.**:
 - Date – MM/DD/YY
 - Time – HH:MM:SS

Note: These fields default to a range of the last 24 hours.

3. In the **Type** field, select **ANY (this is the default)**, **Document**, or **Business process**.
ANY is the default value. Selecting Document or Business process further targets your returned results.
4. In the **Location** field, select one of the following options:
 - **Live Tables** – Display correlations for live (active) instances.
 - **Restored Tables** – Display correlations for instances restored from an offline location.
5. To refine your search to correlations you specify (rather than all generated correlations), select up to five names.
6. In the Value fields, type the value that corresponds with each of the selected names, and click **Go!**

Note: To search for correlations for a particular standard, type Standard in the Name field and the standard name in the Value field (for example, RN (RosettaNet), CIDX, PIDX).

7. To access your search results, select the number link that indicates the number of document and/or business process matches found. The document page opens to display the documents that matched the search criteria you selected.

Chapter 5. Search for EDI Correlations

About this task

To search for EDI correlations:


Procedure

1. From the **Administration** menu, select **Business Process > Monitor > Advanced Search > EDI Correlation**.
2. In the Search Option area, specify any combination of the following search criteria, as appropriate:

Field	Description	Action
All Level Options		
Location	EDI correlations maintained in a specific location.	Select one of the following options: <ul style="list-style-type: none"> • Live Tables – Display live (active) EDI correlations. This is the default. • Restored Tables – Display EDI correlations restored from an offline location.
Search Level Type	EDI processing level.	Select one of the following options: <ul style="list-style-type: none"> • Interchange – For the search query, display results from the interchange level. This is the default. • Group – For the search query, display results from the group level. • Transaction – For the search query, display results from the transaction level.
Test Mode	Mode of the Sterling B2B Integrator system where documents that contain the EDI correlations were created.	Select one of the following options: <ul style="list-style-type: none"> • Any (default) • Test • Production • Information • Interchange is a test • Syntax only test • Echo request • Echo response
Direction	Flow of the documents that contain the EDI correlations.	Select one of the following options: <ul style="list-style-type: none"> • Any (default) • Inbound • Outbound
Sender ID	ID for the organization that is sending documents.	Type the identifier of the sender.
Receiver ID	ID for the receiving organization.	Type the identifier of the receiver.

Field	Description	Action
Sender ID Qualifier	Qualifier used with the Sender ID to define the organization that is sending documents.	Type the qualifier of the sender.
Receiver ID Qualifier	Qualifier used with the Receiver ID for the receiving organization.	Type the qualifier of the receiver.
Start Date	Documents in progress or completed after the specified start date and time.	Using the following formats, type a starting date and time range and select A.M. or P.M. : <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS
End Date	Documents in progress or completed before the specified end date and time.	Using the following formats, type an end date and time range and select A.M. or P.M. : <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS
Interchange Level Options		
Interchange Control Number	Sequential number, located at the beginning and end of an interchange, used to verify that all interchanges sent have been received and that the information in the interchange is complete.	Type the control number that references the interchange.
Standard	EDI standard you agree to use for a trading partnership.	Type the name of the standard (including CHIPS or Fedwire).
Acknowledgment Status	Status of an expected acknowledgement at the interchange level.	Select one of the following options: <ul style="list-style-type: none"> • Any (default) • Waiting • Accepted • Accepted with Errors • Rejected • OverDue • Received • None • Manually Accepted
Compliance Status	Status of compliance checking at the interchange level.	Select one of the following options: <ul style="list-style-type: none"> • Any (default) • OK • NOT OK
Start Date	EDI correlations generated or completed for documents at the interchange level after the specific start date and time. This date is compared with the interchange date/time in the data.	Using the following formats, type a starting date and time range and select A.M. or P.M. : <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS
End Date	EDI correlations generated or completed for documents at the interchange level before the specific end date and time. This date is compared with the interchange date/time in the data.	Using the following formats, type an end date and time range and select A.M. or P.M. : <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS

Field	Description	Action
Group Level Options - these fields are only available if you choose Group for Search Level Type		
Functional Group ID	ID of the functional group indicated in the document.	Type the ID of the functional group.
Group Control Number	Sequential number, used to verify that all groups sent have been received and that the information in the group is complete.	Type the control number that references the group.
Acknowledgement Status	Status of an expected acknowledgement at the group level.	Select one of the following options: <ul style="list-style-type: none"> • Any (default) • Waiting • Accepted • Accepted with Errors • Rejected • OverDue • Received • None • Manually Accepted • Partially Accepted
Compliance Status	Status of compliance checking at the functional group level.	Select one of the following options: <ul style="list-style-type: none"> • Any (default) • OK • NOT OK
Start Date	EDI correlations generated or completed for documents at the group level after the specific start date and time. This date is compared with the group date/time in the data.	Using the following formats, type a starting date and time range and select A.M. or P.M.: <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS
End Date	EDI correlations generated or completed for documents at the group level before the specific end date and time. This date is compared with the group date/time in the data.	Using the following formats, type an end date and time range and select A.M. or P.M.: <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS
Transaction Level Options - these fields are only available if you choose Group for Search Level Type		
Transaction Set ID	ID of the transaction set indicated in the document.	Type the ID of the transaction set.
Compliance Status	Status of compliance checking at the transaction set level.	Select one of the following options: <ul style="list-style-type: none"> • Any (default) • OK • NOT OK
Message Repair Status	Status of message repair (for SWIFT documents only).	Select one of the following options: <ul style="list-style-type: none"> • Any • Ready for Edit • Ready for Resend • Aborted • Resent


3. Click **Go!** to display the EDI correlation records that match your search criteria.
4. In the EDI Correlation Interchange Results page, click  **info** in the Detail column for the interchange for which you want to view details.

Note: If Delivery Monitoring is enabled, two Correlations are created when a message is sent. These Correlations are the same names used by the XML Format 2 envelope: `MessageStatusIsSuccess` and `ReceiverDeliveryStatus`. The values for both Correlations are initialized to `WAITING`. When the Delivery Notification or Non-Delivery Warning message is processed these Correlation values will be updated appropriately. If a Delivery Notification message is processed, that means the message has been delivered to the recipient. Therefore, **ReceiverDeliveryStatus** is set to `RcvDelivered` and **MessageStatusIsSuccess** is set to `true`. If a Non-Delivery Warning message is processed, then the **ReceiverDeliveryStatus** will be set to `RcvDelayedNak`, indicating that the a message has been rejected by FIN. For a Non-Delivery Warning message, **MessageStatusIsSuccess** is set to `false`. Likewise, if a NAK message is processed, the **ReceiverDeliveryStatus** is set to `RcvDelayedNak` because the message has been rejected by FIN and will not be delivered.

Note: One additional Correlation, **Non-Delivery Warning Message Status**, is created when processing a Non-Delivery Warning message. This Correlation value contains a numeric error code found in field 431. This error code gives a more detailed status for messages that are not delivered. The following error codes are possible:

Error Code	Error Description
01	Delivered Note: Not set for a non-Delivery Warning messag.
02	Rejected by destination.
07	No delivery attempt.
08	One or more unsuccessful attempts.
10	Message not delivered (that is no delivery history) for one of the following reasons: Message negatively acknowledged on input, Message is Login, Select, Quit or Logout Request, Message was sent in local test mode (not deliverable), Message is MT 097 (processed directly by Slice Processor and never delivered to any logical terminal, and so does not have a delivery history).
12	Intercepted.
31	Authorized by the copy service server and delivered.
32	Not authorized by the copy service server and aborted by the system.
33	Copy message is aborted and not delivered to the copy service server.
34	Authorized by the copy service server but aborted by the system.
35	Not yet authorized/refused by the copy service server.
37	Authorized by the copy service server but no delivery attempted.
38	Authorized by the copy service server but one or more unsuccessful delivery attempts.
41	Copy service bypassed and message delivered.
44	Copy service bypassed but message aborted by the system.


Error Code	Error Description
47	Copy service bypassed but no delivery attempted.
48	Copy service bypassed but one or more unsuccessful delivery attempts.
49	Refused by central institution. Abort notification MT 019 contains an alphanumeric abort code.
50-99	These codes are specific to each FINCopy service. Contact your respective service provider for the meaning of each code within the range 50-99.
70	Refusal from the Clearing Computer, and delivery aborted; the Sender of the payment message should also receive an MT 998 / SMT n75 Error Message from the Clearing Computer giving further reasons for the refusal.
71	Refusal from the Clearing Computer because of a message format error that prevented normal processing, and delivery aborted.
99	System error

5. In the EDI Correlation Interchange/Group/Transaction Detail Results page, click  **info** to the right of Document Correlations.

Note: Correlations for a specific standard are displayed using the Standard name as the beginning of the correlation. For the specific correlations that are used with a particular standard, see the documentation for that standard.

Note: SWIFT data that does not include a Message User Reference may not have a functioning link to the transaction-level correlations when interchange-level correlations are displayed using the EDI Correlation search functionality. If this occurs, view the transaction-level correlations by performing a transaction-level search, or by using the Correlation search functionality.

Note: Transaction Overdue Time in the EDI Correlation Detail pages is displayed in system milliseconds instead of a formatted date string. To obtain the correct timestamp, take the timestamp when the enveloping process ran and add the configured overdue time to it.

6. For SWIFT documents, on the EDI Correlation Transaction Results page, click  **info** in the Detail column for the document you want to edit or click the **View** icon to display the message in read-only mode. The Read Only dialog displays the business names and associated data components. Click **Close** to exit the Read Only dialog.

Note: If the Document Repair Status is ReadyForEdit and is a link, you have the necessary permissions set to access and edit the document in the SWIFT Message Editor. If you have corrected a failed document and saved it, the status is changed to ReadyforResend and an e-mail is sent to the address specified in Enveloping properties.

7. In the Document Correlation Details page, view details about the AS2 message you selected, and to see the correlation between the AS2 message and corresponding EDI document or data. The details available include:
- time stamp
 - scope
 - process ID
 - document name
 - data value

Chapter 6. Search for BPSS Correlations

About this task

To search for Business Process Specification Schema (BPSS) correlations that define a standard structure of the activities within a business process:

Procedure

1. From the **Administration** menu, select **Business Processes > Advanced Search > BPSS Correlation**.
2. In the **Location** field, select one of the following options:
 - **Live Tables** – Display BPSS correlations of live (active) business processes. This is the default.
 - **Restore Tables** – Display BPSS correlations of business processes restored from an offline location.
3. To refine your search, specify any combination of the following search criteria.
 - **Transaction Type** – Display the records of the activities that completed the specified transaction.
 - **Trading Partner** – Display the records of the activities that associated with the trading partner specified.
 - **Status** – Display the records of the activities that resulted with a completed, waiting, or terminated result. Or select ALL to display all records.
 - **Start Date From/Start Date To** – Display the records of activities completed within the specified start dates and times.
4. Click **Go!** to display the BPSS correlation records that match your search criteria.

Chapter 7. Search for ebXML Correlations

About this task

To search for ebXML correlations:

Procedure

1. From the **Administration** menu, select **Business Processes > Advanced Search > ebXML Correlation**.
2. In the **Location** field, select one of the following options:
 - **Live Tables** – Display BPSS correlations of live (active) business processes.
 - **Restore Tables** – Display BPSS correlations of business processes restored from an offline location.
3. To refine your search, specify any combination of the following search criteria.
 - **CPA Id** – Display the records of the activities associated with the specified Collaboration Protocol Agreement ID.
 - **Party Id** – Display the records of the activities associated with the specified Party ID.
 - **Start Date From/Start Date To** – Display the records of activities completed within the specified start dates and times.
4. Click **Go!** to display the ebXML correlation records that match your search criteria.

Chapter 8. Search for Document Correlations

About this task

To perform an advanced search for documents:

Procedure

1. From the **Administration** menu, select **Business Process > Monitor > Advanced Search > Documents**.
2. In the **Document Advanced Search** page, specify any combination of the following search criteria, as appropriate:

Field	Description	Action
Search Location		
Select the area to search from	Documents maintained in a specific location.	Select one of the following options: <ul style="list-style-type: none"> • Live Tables – Display live (active) documents. • Restored Tables – Display documents restored from an offline location.
Time		
Start date/time range	Documents in progress or completed after the specified start date and time.	Using the following formats, type a starting date and time range and select A.M. or P.M. : <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS
End date/time range	Documents in progress or completed before the specified end date and time.	Using the following formats, type an end date and time range and select A.M. or P.M. : <ul style="list-style-type: none"> • Date – MM/DD/YY • Time – HH:MM:SS
Criteria		
Sender ID	ID of the organization sending the document.	Type the ID of the sender of the document.
Receiver ID	ID of the organization receiving the document.	Type the ID of the receiver of the document.
Type	Document type.	Type the document type, such as X12, EDIFACT, TRADACOMS, CII, and so forth. Note: Document types vary and depend upon the business process you are running.
Status	Document status.	Type whether the document is completed or incomplete.

Field	Description	Action
Tracking ID	Unique identifier assigned to the document during the life cycle of the document to track relationships and history. The document tracking ID is passed through the Sterling B2B Integrator systems for internodal tracking support.	Type the ID of the document for which to search.
Correlations		
Name	Name that identifies a previously created correlation and option to further limit the scope for the Name field selected.	Select the name of the correlation to use to retrieve the document and then (in the second list) select a field to further limit the scope of the search.
Value	Option to further limit the correlation by its category and the value used when creating a correlation for the document.	Select the search restriction (Equals, Contains, or Begins With) and type the value to use to retrieve the document. Note: The default search restriction is Equals.
Results per page	Number of documents you want to display on the results page.	Select the value to indicate the number of documents to display. Valid values are: <ul style="list-style-type: none"> • 5 • 15 • 30 • 50
List Directly		
Document	Document ID.	Type the document identifier.

3. Click **Go!** The Document Tracking page opens, listing the documents that match your search criteria.

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