

Chapter 5: CA Business Service Insight

CA Business Service Insight Integration

This chapter discusses how CA SDM Release 12.6 and CA Business Service Insight (CA BSI) Releases 7 and 8 can be configured to work together. The following key topics are covered:

- Integration from CA SDM to CA BSI
- Integration from CA BSI to CA SDM
- How the integration works
- Integration instructions

Overview of CA BSI

CA BSI, which was formerly known as CA Oblicore Guarantee, provides a top-down, contract-based approach to Service Level Management (SLM). The top-down approach is ideal for managing business value compared to the traditional bottom-up approach of aggregating technical metrics that can be virtually meaningless to the business. CA BSI lets you author, modify, and measure service level agreements, operational level agreements, and underpinning contracts. With CA BSI, you can improve service performance by creating accountability for the services that are provided and aligning them to contractual obligations. CA BSI provides a collaborative environment for monitoring and reporting service performance. CA BSI provides the following advantages:

- Improved productivity with automatic performance reporting
- Performance aligned with contracted obligations
- Reduced costs
- Increased customer satisfaction and corporate governance

Integration Details

CA BSI Event Generation from CA SDM

CA BSI interfaces with various data sources to collect real-time data about the service levels being provided to contract parties. These interfaces, which sit between the data sources and CA BSI, are called adapters. Adapters are modules that collect and format data into unified event structure. The adapters enable a full separation between the data sources layer and the contracts, business logic and reporting layers. This separation means that a data source can be changed without affecting the business logic in use.

CA BSI adapter technology is based on a high-performance XML engine. Each data source is accessed by a specified adapter. Two types of adapters exist, Text File adapters and SQL ODBC-based adapters. These adapter types allow accessibility to information that originates in various types of data sources, including the following sources:

- Databases
- Log files
- XML source files
- Excel files
- TCP/IP, SNMP and SMTP streams
- APIs and Web Services
- LDAP and IMS repositories
- Homegrown tools, and other utilities

Using a well-defined XML configuration, the adapter knows how to read all types of data forms, formats and structures, and passes only the relevant information to CA BSI.

The adapter modules are separate modules of CA BSI and can be deployed in a distributed fashion in the organization. The adapter communicates using the TCP/IP safe protocol. The adapter includes a restart/recovery mechanism and can handle problems such as network disruptions, missing data, duplicate data, corrupt data, data gaps, and data validation. Each adapter provides full data integrity and complete tracking and logging of all adapter messages.

Adapters contain two components:

- Generic component

This component is the executable that runs the adapter. The generic component can be either a Text File adapter component or an ODBC-based, SQL adapter component. These components enable connecting to a data source and parsing it as a text file or executing various SQL queries against the component.

- Adapter configuration

The adapter configuration can be created and managed using the Adapter Wizard interface. The wizard is a step-by-step GUI-based interface that takes the user through a series of forms. The forms specify and capture all relevant settings that are required for configuring and managing an adapter. Adapters that are created and managed by the wizard are known as configuration-managed adapters. Adapters with configurations that are created and maintained manually are known as configuration-unmanaged adapters.

The adapter configuration is required to know where and how to connect, what to retrieve, and how to transform and translate the data into generic CA BSI transactions and events. The configuration file is an XML file that is organized into the following sections:

- Connect and interface the data source.
- Structure the input.
- Structure the output.
- Communicate with CA BSI to send and receive information.

CA SDM has data that the CA BSI adapters can use to generate events from the CA SDM service operation processes, such as request fulfillment, incident, and problem management. CA SDM also generates data from its service transition processes such as change, release, and service asset and configuration management. CA BSI uses this data to create events, which are then used as measures to determine service levels.

Before you configure the integration, you must understand the structure of the event:

- CA BSI is event-driven.
- Events are generated by the adapter.
- Events are driven by business logic requirements.

Which events are necessary to be able to do the calculations?

- Extra data to be contained within events.

What is necessary for calculations?

Provide hints to the managed data repository (MDR) for further research (for example, a CA SDM ticket ID).

Do not replicate MDR in CA BSI (for performance reasons).

- When designing Adapters, consider the following factors:

Determine load and performance impact.

Properly prefilter data.

Implement event singularity.

Allow for data changes to happen through the MDR and update CA BSI.

Use translation tables for both event and resource model.

Configure the Integration from CA SDM

You can collect CA SDM data that CA BSI will analyze using a text file or SQL queries. This section provides the instructions to generate events using both methods.

Configure a Text Adapter

A text adapter uses CSV files as inputs from CA SDM. You can generate a CSV file from CA SDM using one of the following methods:

- CA Business Intelligence report
- pdm_extract utility

Extract Data to CSV Files Using CA Business Intelligence

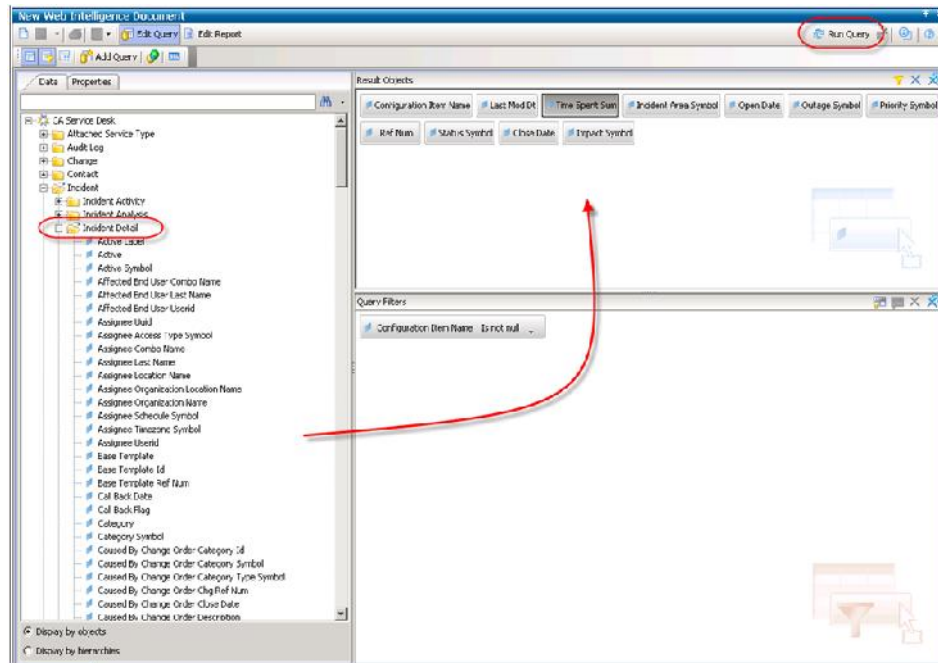
CA Business Intelligence is a powerful reporting tool that is provided with CA SDM. You can create a report in CA Business Intelligence, schedule the report to collect data at regular intervals, and save the data to the CSV format.

Follow these steps:

1. Open CA Business Intelligence Infoview and create a web intelligence report containing CA SDM fields that you need to use in CA BSI. You can use any CA SDM record, such as incident, request, problem, changes, issues, or knowledge.
2. Include a resource, timestamp, and the required values for SLM calculation in the report.
3. Select the fields and drag them to the report area.

Note: This method does not require a thorough knowledge of CA SDM schema because it deals with the object layer.

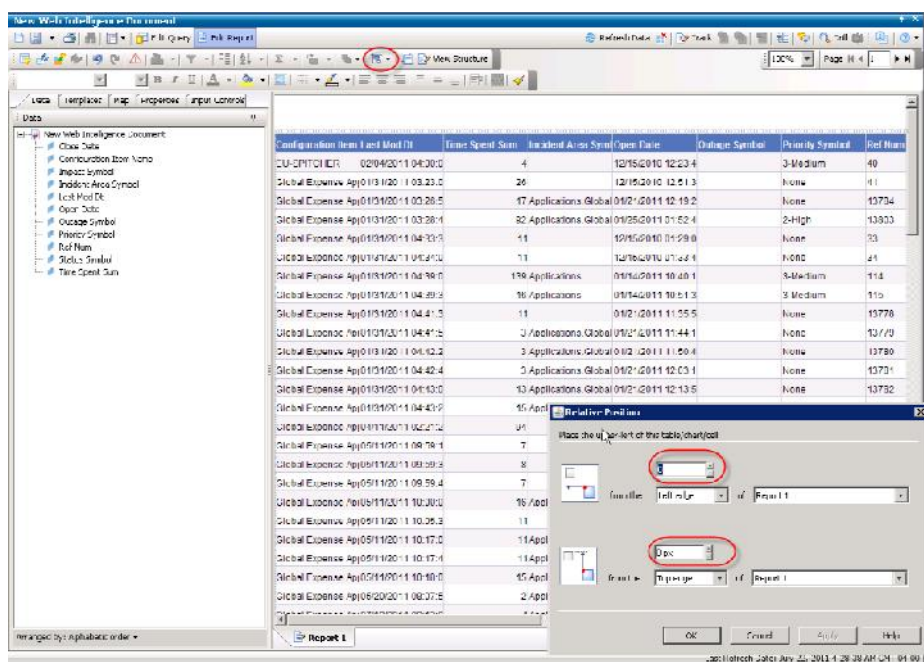
The following example includes a filter to help ensure that the extracted data has a CI associated with it:



4. Click Run Query.

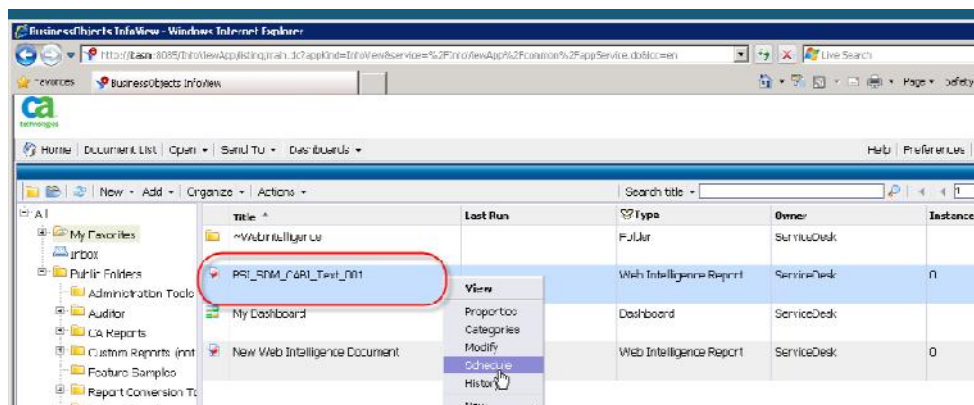
Configure the Integration from CA SDM

5. Suppress the report title and verify that the relative position of the report screen is set to 0.



6. Save the report and use the CA Business Intelligence Scheduler to schedule the report to run as needed using the following steps:

- a. Right-click the report and select Schedule.



b. Specify the Recurrence.

The screenshot shows the 'Recurrence' configuration window. The 'Run object' is set to 'Daily'. The 'Object will run or be over' is set to 'N days'. The 'Days(N)' is set to '1'. The 'Start Date/Time' is set to '05:38 AM 7/22/2011'. The 'End Date/Time' is set to '05:38 AM 7/22/2012'.

c. Select the output format as Comma Separated Values (CSV) and select the destination as shown in the following example.

The screenshot shows the 'Formats and Destinations' configuration window. The 'Output Format' section has 'Comma Separated Values(CSV)' selected, which is circled in red. The 'Output Format Details' section shows 'Destinations for Comma Separated Values(CSV) - BSI_SDM_CAB1_Text_001'. The 'Inbox' checkbox is checked, and the 'File location' checkbox is also checked. The 'Format Options and Settings' section shows 'Text qualifier' set to ' ' '.

The report runs at the scheduled time and saves the report to CSV format.

Extract Data to CSV Files Using pdm_extract

Use the pdm_extract utility to extract data at the schema level. The utility lets you save the data to a CSV file. The CSV file is then passed to the adapter.

Note: You must have a thorough knowledge of the data model to use the pdm_extract utility.

Follow these steps:

1. Open a text editor and type the following command:

```
pdm_extract -f SQL_Query -c -u > filename.csv
```

SQL_Query

Defines the SQL query with the exact fields that you want to extract.

-c

Saves the data in a CSV file.

-u

Indicates no headers.

The following command example shows how you can extract CI event data, such as timestamp, CI name, and time that is spent on resolving the CI.

```
pdm_extract -f "SELECT Call_Req.last_mod_dt ca_owned_resource.resource_name,  
Call_Req.time_spent_sum FROM Call_Req, ca_owned_resource WHERE (Call_Req.affected_rc =  
ca_owned_resource.id)" -c -u > SDM_pdm_extract_file.csv
```

Note: You can include additional fields, if necessary.

2. Save the file as a batch file.
3. Schedule the batch file to run at a specific interval.

You can schedule it to run every day, week, or month depending on the Service Level Management requirements.

The following excerpt shows an example of the generated CSV file:

```
"07/19/2011 13:41:18","USNYAPP01","0"
"07/19/2011 13:41:18","Global Expense System","0"
"07/19/2011 11:41:16","USCAX10_NetApp","0"
"07/19/2011 15:41:15","Quoting Service","0"
"07/19/2011 13:41:13","USCAX10 Router1","0"
"07/19/2011 13:41:11","USCAX10_Switch1","0"
"07/19/2011 22:31:46","Global Expense System","1"
"07/19/2011 11:57:41","USNYAPP01","0"
"07/19/2011 22:32:59","Global Expense System","17"
"07/19/2011 09:57:34","USCAX10_NetApp","0"
"07/19/2011 13:57:34","Quoting Service","0"
"07/19/2011 11:57:31","USCAX10 Router1","0"
"07/19/2011 11:57:31","USCAX10_Switch1","0"
"07/19/2011 11:57:29","Global Expense System","0"
"07/18/2011 14:13:04","Global Expense Application","1"
"07/06/2011 10:06:34","Global Expense System","251"
...
```

The first column or timestamp contains the date when the ticket was last modified. The second column contains the name of the CI associated with the ticket. The third column indicates the total time that was spent on the ticket. The resulting data is stored in a CSV-formatted file when the batch file is run.

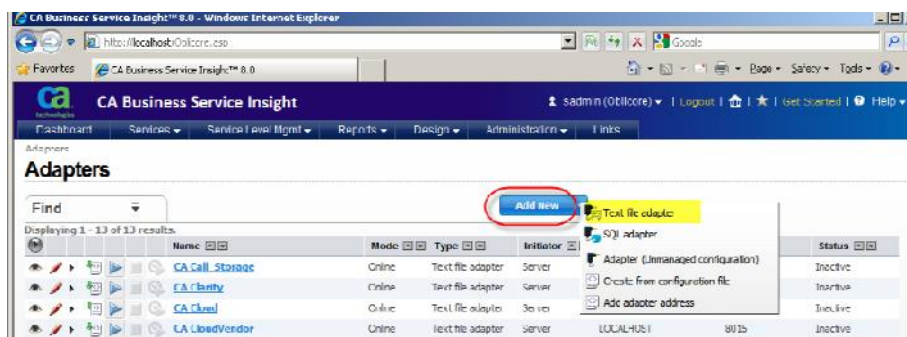
Create a Text Adapter Event

Follow these steps:

1. Copy the CSV file to the C:\data folder on the CA BSI server and also on the computer where the adapter is stored.
2. Verify that both of the Adapter Services are started.
3. Log in to the CA BSI console and click Design, Data Acquisition, Adapter Time Format.
4. Verify that the time format matches the timestamp format in the CSV file.
5. Click Design, Data Acquisition, Adapters.

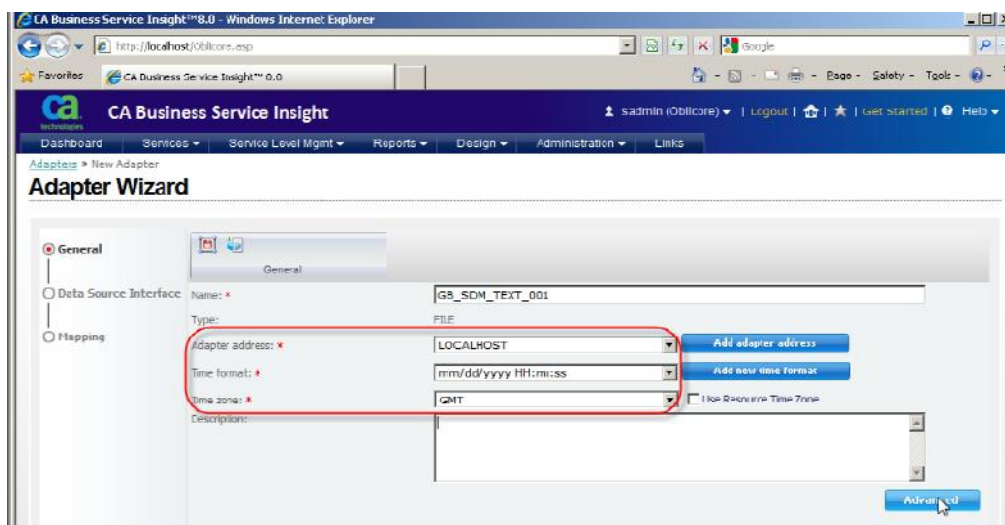
Configure the Integration from CA SDM

- Click Add New and select Text file Adapter.



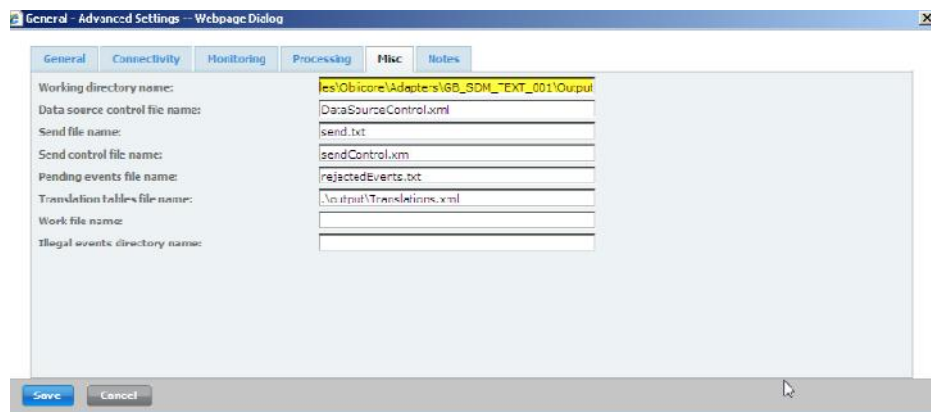
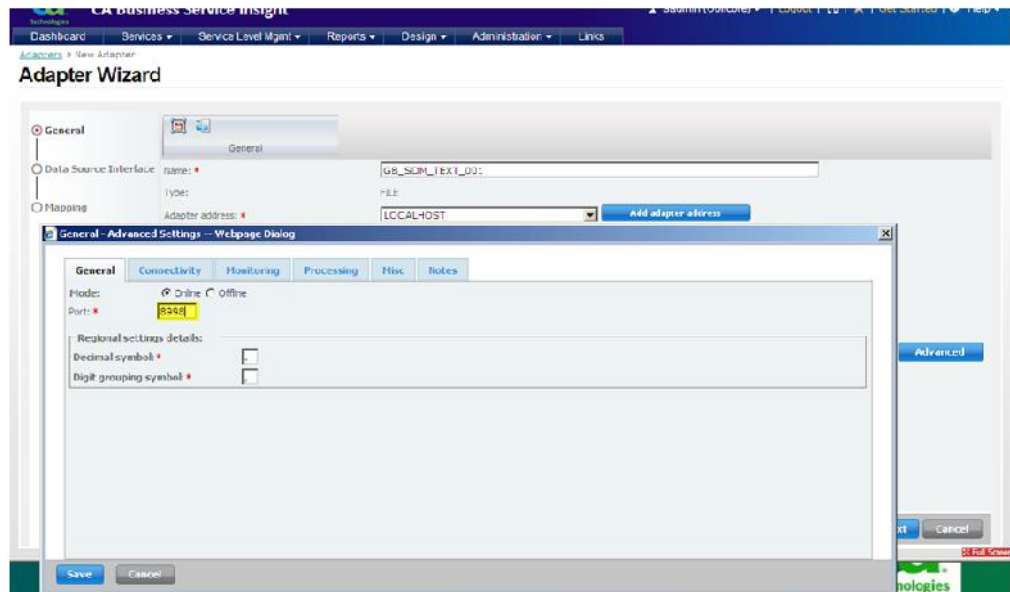
The Adapter Wizard opens.

- Provide the following information in the General section.
 - Name of the adapter.
 - Adapter address. The address must point to the server where the adapter is running. Depending on where the adapter is running, you either specify the address of the CA SDM server or the address of the BSI server.
 - Time format that matches the time format of your time stamp (the time_spent_sum field).



8. Click Advanced and complete the details on each tab, based on your requirements.

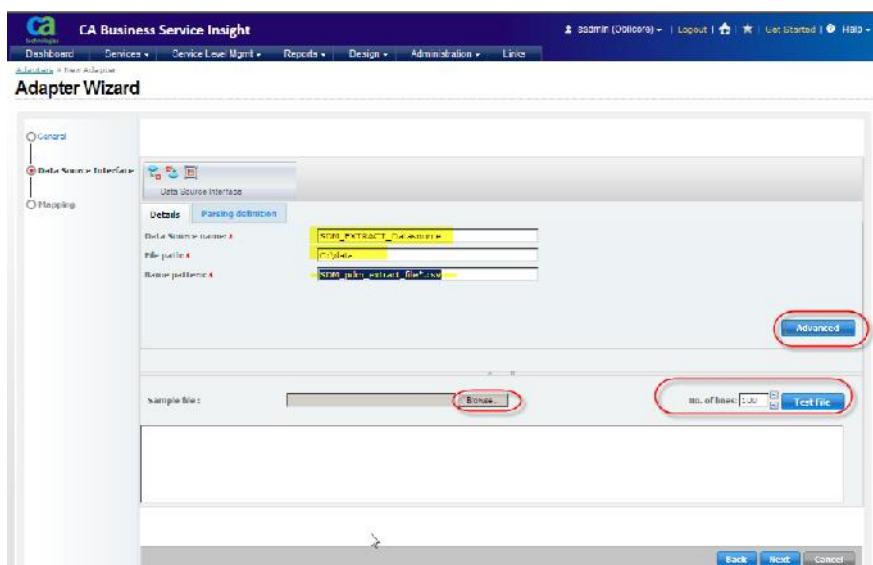
Note: On the General tab, verify that the TCP port that is used by the adapter is not used by any other process.



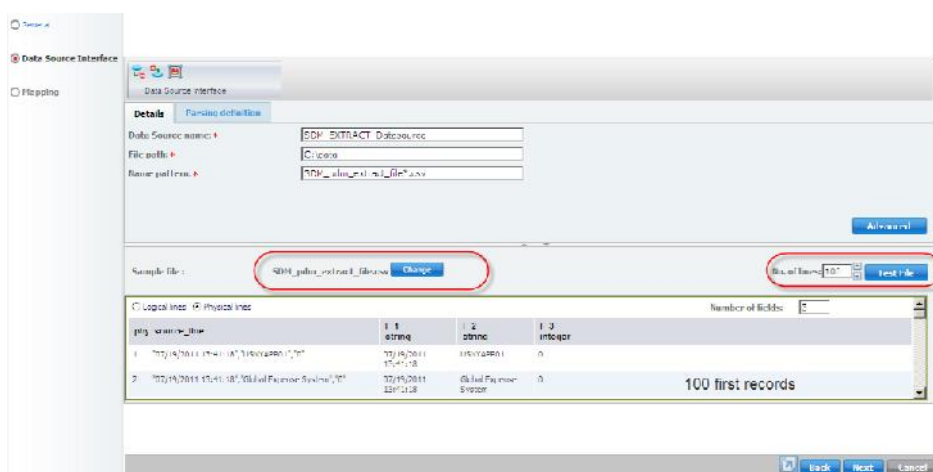
9. Click Save after you complete all tabs.
10. Click Next on the Adapter Wizard.

The Data Source Interface definition page opens.

11. Specify the name of your data source, the path to the file you copied, and the name pattern.
12. Click Advanced to specify parameters, such as initial file name, and parsing definitions.

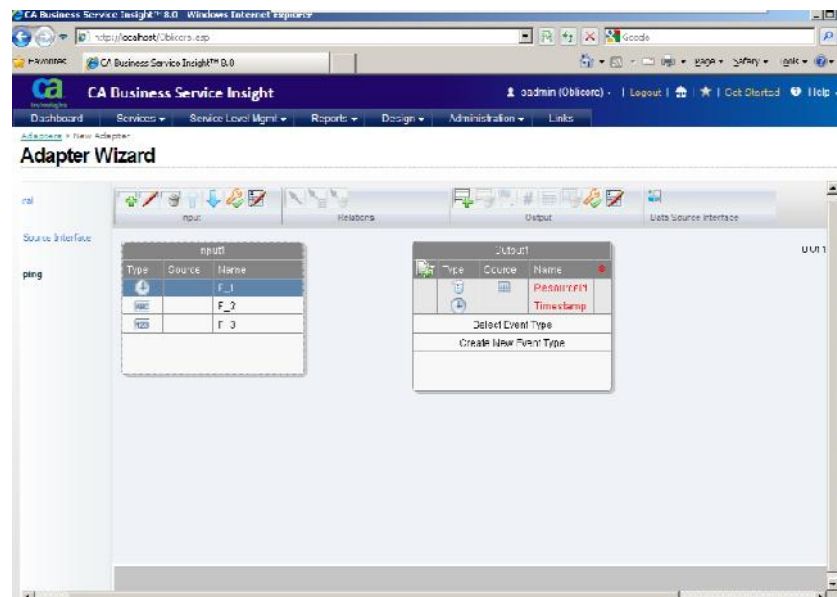


13. Click Save to save the changes and return to the Adapter Wizard.
14. In the bottom pane of the Data Source Interface page, select the file and click Test File.

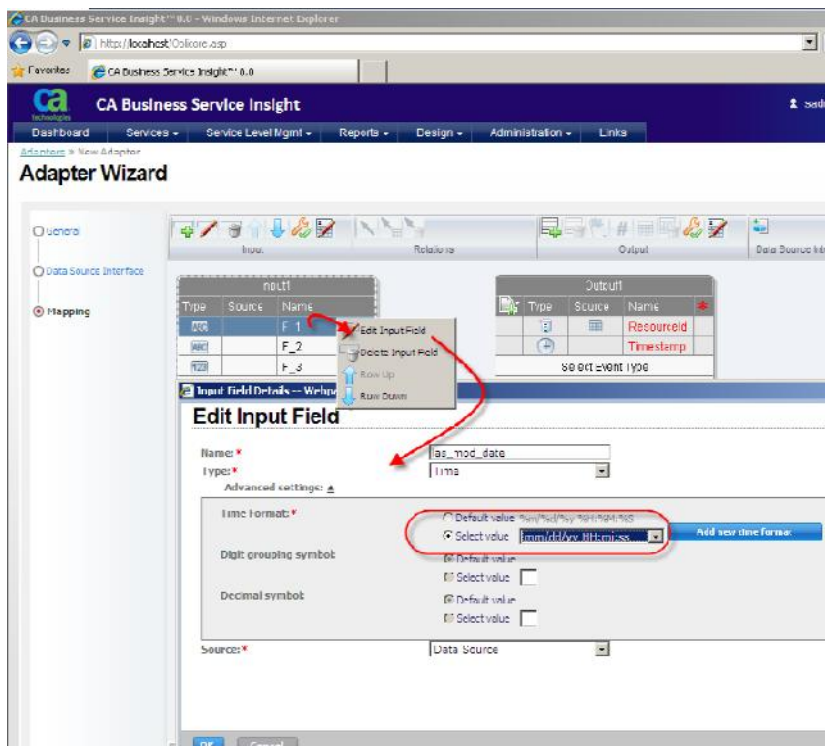


15. If the test is successful, click Next.

The Mapping page opens.



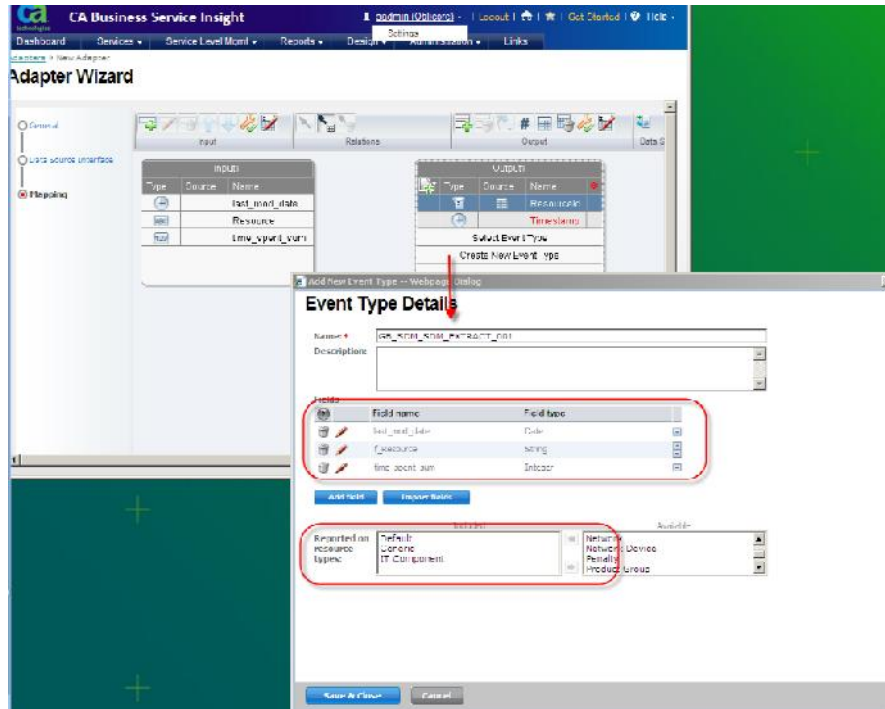
16. Right-click the input fields and provide the name and format, as shown in the following example:



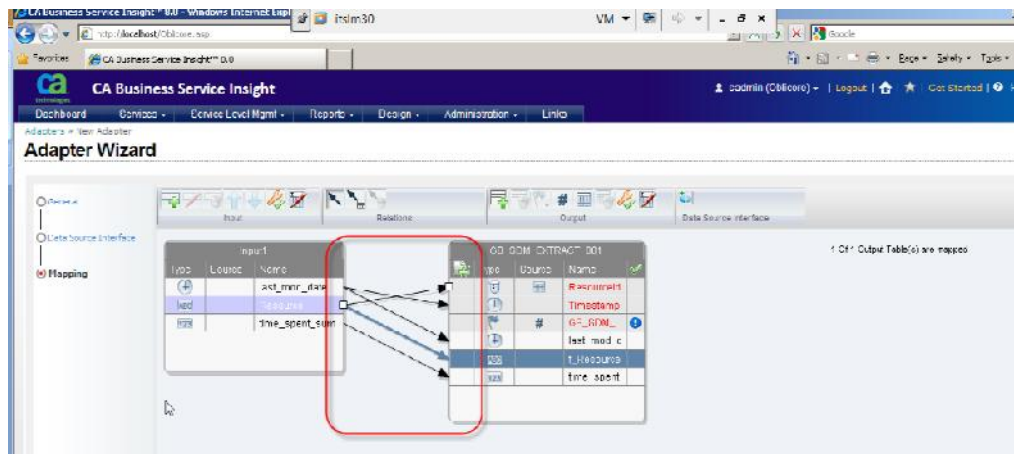
Note: If you want to modify the time format, double-click the Advanced settings arrow to select the time format.

17. On the output table, click Create New Event Type to create an event type as shown in the following example.

The Event Type Details dialog opens with the default values.



18. Click Save and then Close.
19. On the Mapping page, drag the input fields to the appropriate output fields and click Finish when you are done.



The new adapter is now added to the Adapter list.

Configure the Integration from CA SDM

20. Click the blue triangle icon to start the adapter.
21. Click Refresh in the bottom left of the page and click the watch-and-triangle icon, as highlighted in the following example:

	CASpectrum	Online	Text file adapter	Server	LOCALHOST	8004	Inactive
	CustomerSatisfaction	Online	Text file adapter	Server	LOCALHOST	8016	Inactive
	Email Adapter	Online	Text file adapter	Server	LOCALHOST	8019	Inactive
	GB SDM TXT 001	Online	Text file adapter	Server	LOCALHOST	8090	Connection Error
	PenaltyAdapter	Online	Text file adapter	Server	LOCALHOST	8043	Inactive
	TextDemo	Online	Text file adapter	Server	LOCALHOST	7077	Inactive, Mapping Error

This example uses the default translation table, which automatically creates resources in CA BSI. You can use your translation table. The following example shows the resources from CA SDM translated as resources in CA BSI.

CA Business Service Insight

admin (Omicron) | Logout | Home | Star | Get Started | Help

Dashboard Services Service Level Mgmt Reports Design Administration Links

Translation Entries

Find

Table Name:

Search for:

Status: ☐ Translated from: ☒ Translated to: ☐ Pending ☒ Translated ☐ Ignored

Saved Searches:

Alphabetically: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

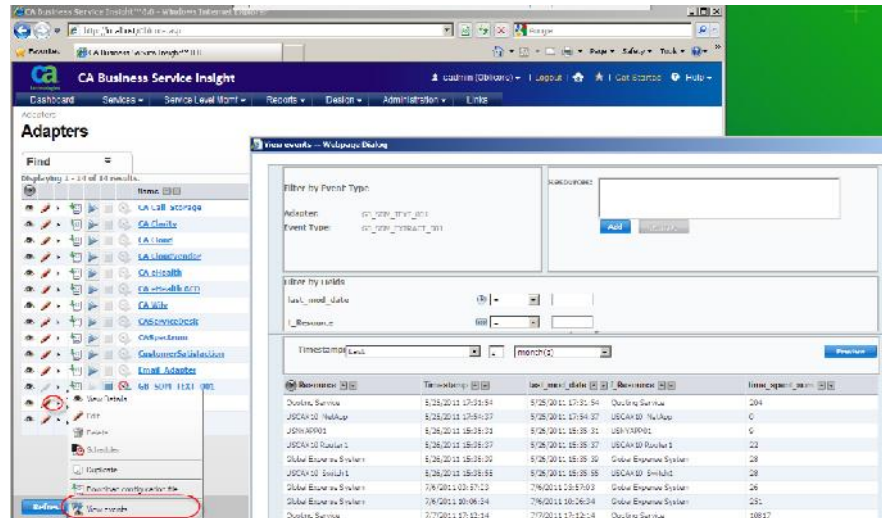
Displaying 1 - 25 of 59 results.

<input type="checkbox"/>		Table Name	Destination Type	Status	Translated from	Translated to	Last action time
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	EU SPITCHER	EU SPITCHER	7/21/2011
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	Global Expense Application	Global Expense Application	7/21/2011
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	oldusnsc:10.ca.com	oldusnsc:10.ca.com	7/21/2011
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	Quoting Service	Quoting Service	7/21/2011
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	USCAX 10 Router 1	USCAX 10 Router 1	7/21/2011
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	USCAX 10_NetApp	USCAX 10_NetApp	7/21/2011
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	USCAX 10_Switch 1	USCAX 10_Switch 1	7/21/2011
<input type="checkbox"/>		Default_Translation_Table	Resource	Translated	Global Expense System	Global Expense System	7/21/2011

View Events Generated by the Adapter

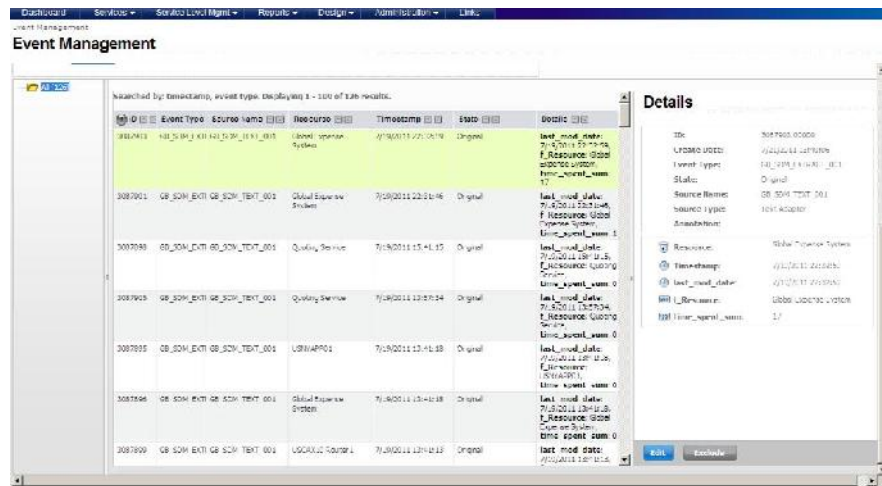
You can view the events using one of the following methods:

- Click the black triangle and select View events.



The event list is displayed. You can filter the events based on event type criteria.

- Click Design, Data Acquisition, Event Management.



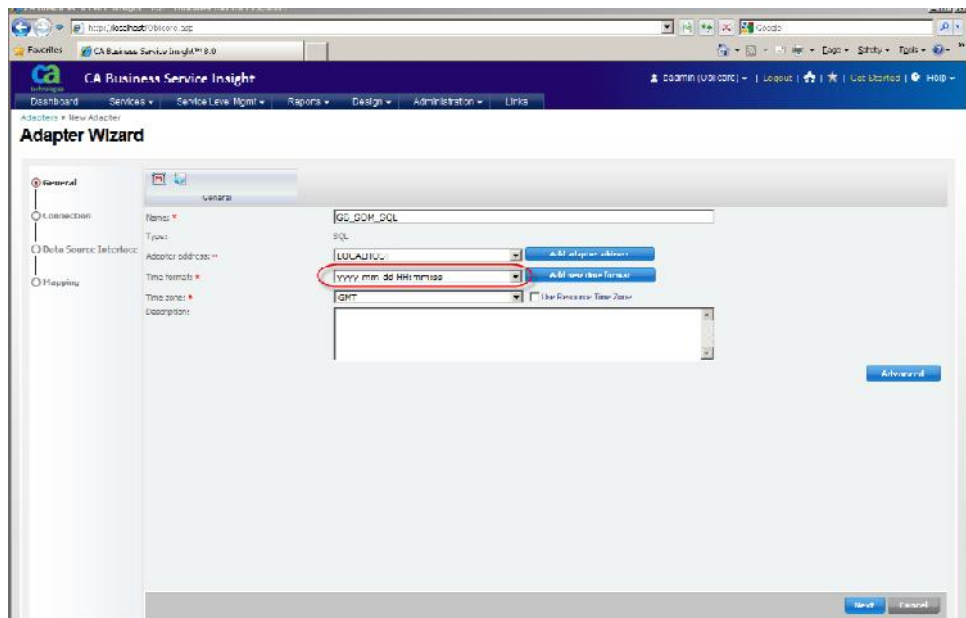
Note: You can also create a quick metric or quick clustered metric from the adapter list. The following example shows a clustered metric.



Follow these steps:

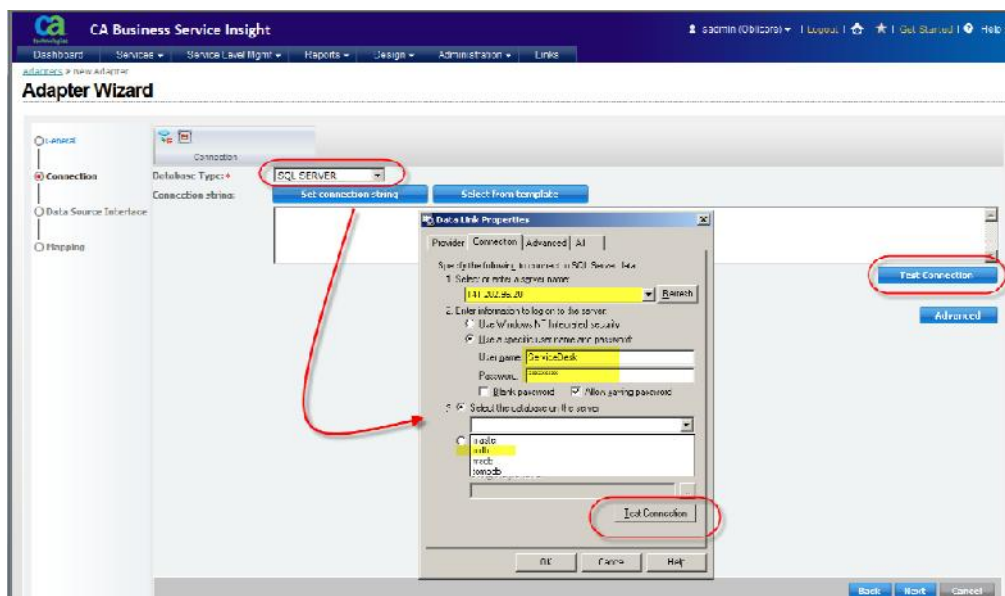
- The Adapter Wizard opens.

3. On the General page, specify a name for the adapter and the correct time format.
4. Click Advanced and specify the connectivity and monitoring parameters for this adapter.



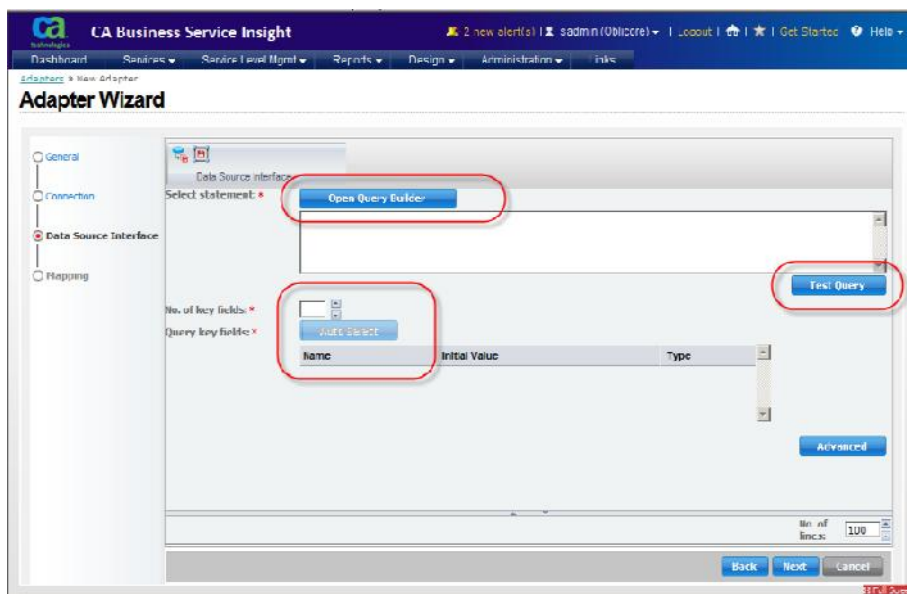
5. Click Next and specify the following details:
 - a. Select CA SDM for the database type.
 - b. Click Set connection String, and specify connection parameters, such as server address, username and password, and database in the Data Link Properties dialog.

- c. Click Test Connection to test the connection to the server.



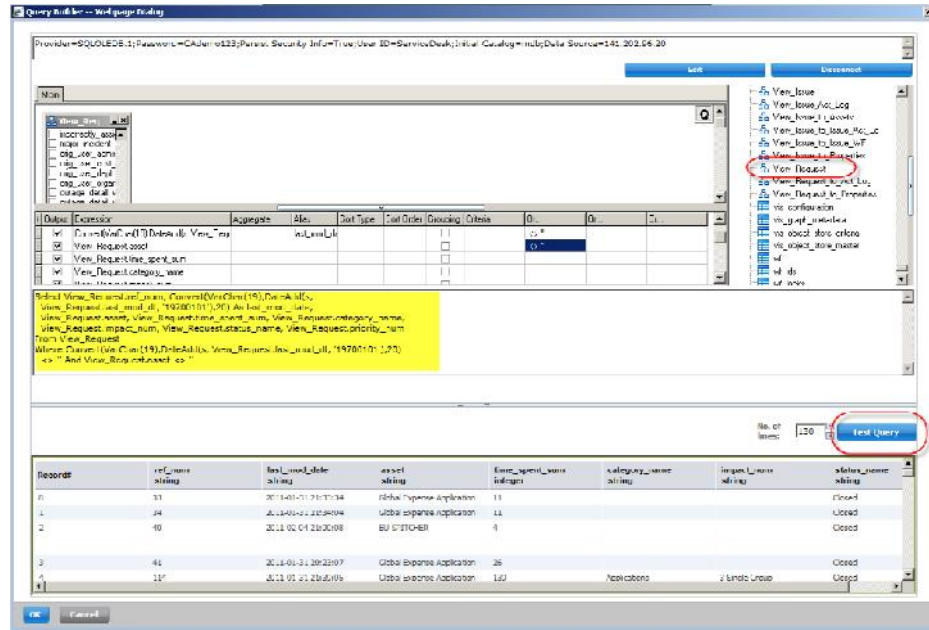
Note: You can use the adapter templates to avoid specifying these parameters each time.

6. Click Next.
7. Click Open Query Builder to specify the data that you want the adapter to collect.

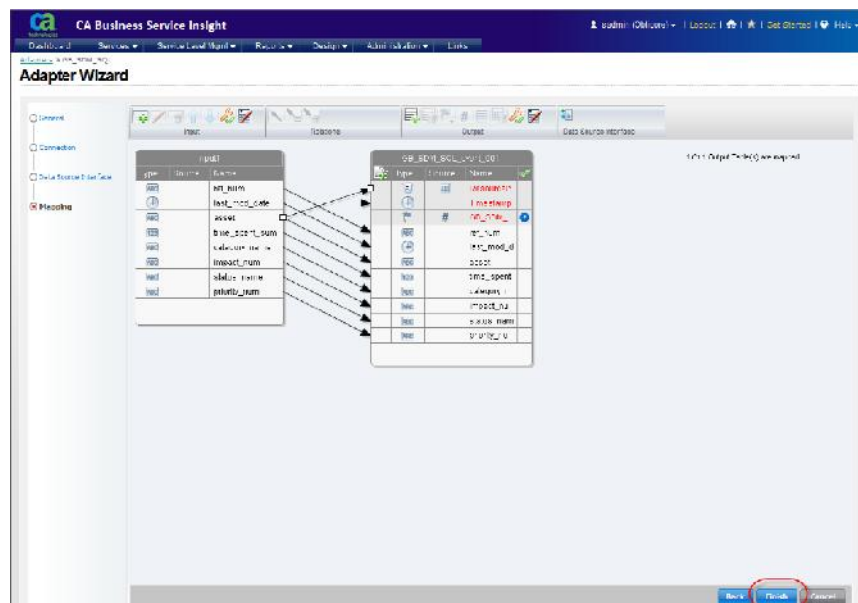


The Query Builder dialog opens.

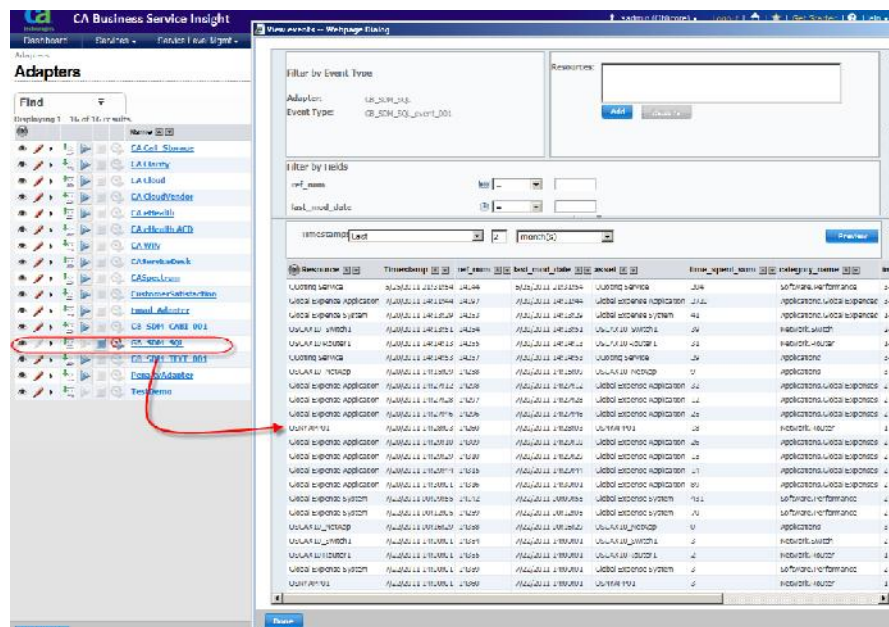
In the following example, the View_Request view is used. All CA SDM tables are accessible by the query builder. The highlighted part in the middle of the example represents the query that was generated by the query builder. The bottom pane shows the result of the Test Query operation.



8. Click OK to return to the Data Source Interface page and specify the query key fields for the adapter.
9. Click Next to move to the Mapping page. Create the event types and map the fields.
10. Click Finish after you have mapped all the fields.



The SQL Adapter is ready to start and run. You can view the events that were generated by the adapter. For more information about viewing the events, see [View Events Generated by the Adapter](#) (see page 155). The following example shows the events that were generated by the SQL adapter.



How to Use ETL to Integrate CA SDM with CA BSI

Several methods have been discussed to integrate CA SDM with CA BSI. The final, and preferred, method is to use an extract transform load (ETL) approach. While any ETL tool can be used, the community version of Pentaho is recommended and is discussed in this section.

The basic approach to leveraging the ETL approach uses the following process:

1. Download the Pentaho Community Edition tool at sourceforge.com.
2. **Important!** Do not use the version from the Pentaho site.
3. Configure the Spoon tool, which is part of the Pentaho suite, to run correctly.
4. Create the ETL transformation with Spoon to extract data into the desired CSV format.
5. Create an adapter to read the CSV file. See [Configure a Text Adapter](#) (see page 142) for more information about creating adapters.

The approach that is used here leverages the CA SDM data abstraction layer known as Majic. Also, this approach uses the CA Business Intelligence Business Objects CA SDM ODBC driver. You could use the ETL tool directly on the CA SDM tables. However, this method is not recommended because of security violation concerns that are defined in the CA SDM role entitlements.

Using an ETL approach provides the following advantages:

- Allows much better control of the way in which data is received by CA BSI.
- Provides the ability to build a library of ETL jobs to handle a wide variety of applications.
- Focuses the effort to understand MDR data on the customer (or CA Technologies if it is a CA Technologies application).
- Supports the Community model more easily.
- Provides flexibility to use an ETL tool that is preferred by the customer.

Get Started with the Spoon Tool

Follow these steps:

1. Download the Spoon tool from sourceforge.com.

Note: The Spoon tool is a part of the Pentaho Business Intelligence Suite. You cannot access the Spoon tool separately. You must download the entire suite to get access to Spoon.

2. Install the file.

Note: You must have at least a newer version of Java running. However, running the latest version is highly recommended.

3. Locate the kettle.properties file that is installed and back it up because you will be changing it.

Note: The kettle.properties file is the primary tool that you use to configure Spoon. You also use two batch files: spoon.bat and set-pentaho-env.bat.

4. Run the spoon.bat file and verify that it loads.

The spoon.bat file may pause when you first run it because it runs from the command line. Wait at least 15 seconds before deciding that the application is not responding. If spoon.bat does not run, there may be a problem with finding the appropriate Java environment.

5. If the spoon.bat file does not run, edit the set-pentaho-env.bat file. Follow the instructions in the set-pentaho-env.bat file. This file is used to configure the Java environment so that Spoon runs correctly.

Configure the Spoon ETL Tool

If you are planning to leverage the predefined ETL transformations available through CA Technologies Support, the following additional configuration is required. If you are not using the CA Technologies Support ETL transformations, you will need to create your own similar structures.

Follow these steps:

1. Locate the kettle.properties file and back up the file.

Note: This file is the master Spoon configuration file and is loaded each time that you run the Spoon tool. If you change this configuration file, the Spoon environment is not affected until you shut down Spoon and reopen it.

2. Create a directory structure where all of your various files and output can be created and saved.

Note: These instructions apply to the Windows environment and need to be modified slightly in a Linux environment.

3. Create a directory named C:\etl and create the following subdirectories:

- C:/etl/filters
- C:/etl/jobs
- C:/etl/logs
- C:/etl/results
- C:/etl/tracking
- C:/etl/transformations
- C:/etl/enumerations
- C:/etl/usminfo
- C:/etl/mdrimport

4. Modify the kettle.properties file to include the parameters in the following list:

Note: You can modify the file directly or open the Spoon GUI and select Edit, Edit the kettle.properties file. The Spoon GUI method is recommended.

- ETL_DIR=c:/etl
- ETL_Filters_DIR=c:/etl/filters
- ETL_Jobs_DIR=c:/etl/jobs
- ETL_LOGS_DIR=c:/etl/logs
- ETL_RESULTS_DIR=c:/etl/results
- ETL_TRACKING_DIR=c:/etl/tracking
- ETL_TRANSFORMATIONS_DIR=c:/etl/transformations
- ETL_ENUMERATIONS_DIR=c:/etl/enumerations
- ETL_USMINFO_DIR=c:/etl/usminfo
- ETL_MDR_IMPORT_DIR=c:/etl/mdrimport

You can change these directories at any time. If you do so, verify that the directory structure and the parameters match. Also, it is highly recommended that you use the forward slash to specify directories.

5. (Optional) If you are using the predefined content, add the following additional parameters to the kettle.properties file. These parameters are used in the transformations as filters.

- STARTDATE=2001-01-01
- STARTTIME=00:00:00
- ENDDATE=2019-12-31
- ENDTIME=23-59:59

Download the CA SDM-Specific Content

Two kinds of content are available. One type of content, a set of CA SDM transformations, is used with the SMI functionality of CA BSI. The other type of content is a straight ISO20000 content pack. Both types are available on CA Technologies Support. Both content packs are provided as zip structures and set up with the directory structure defined in [Configure the Spoon ETL Tool](#) (see page 162).

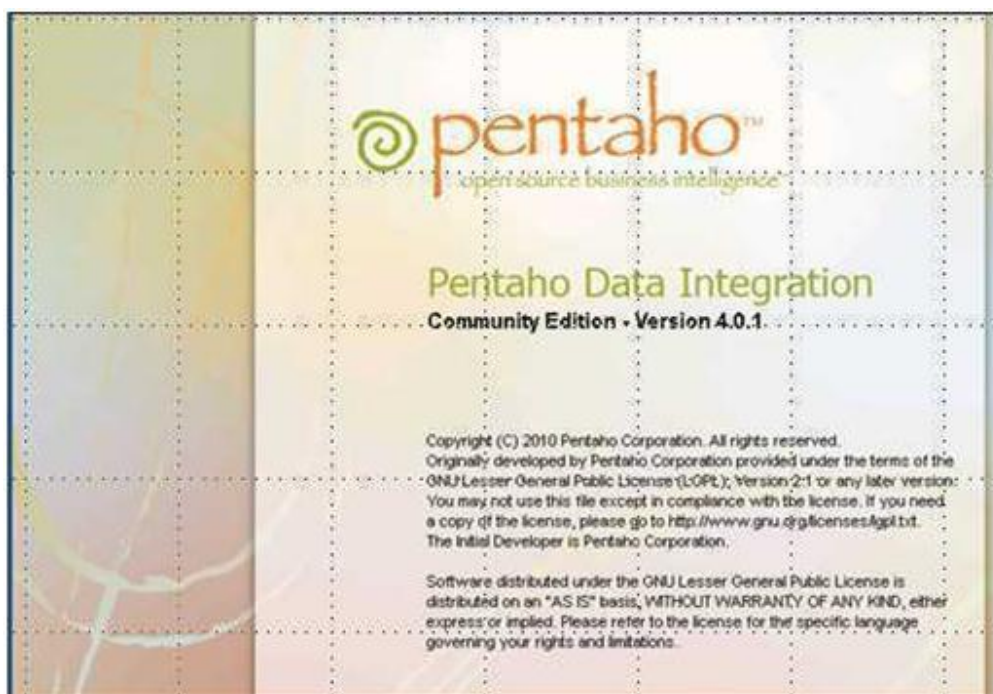
Download the content that applies to your environment.

Create Transformations with Spoon

The Spoon ETL tool is generally easy to use. Several books are available on this tool (you can run web searches for "Pentaho"). The instructions provided in this section guide you through creating a simple transformation. We recommend, however, that you leverage the predefined content, if possible, as a basis. If you use the predefined content, verify that the CA SDM CA Business Intelligence ODBC (SDM BI ODBC) service is running.

Follow these steps:

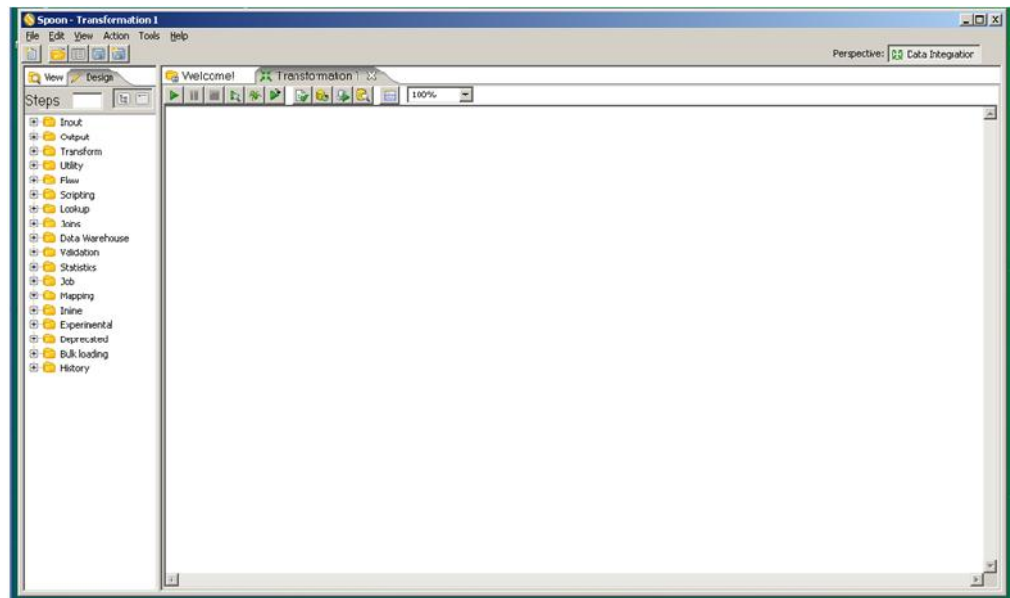
1. Load the Spoon ETL tool.



You may have a different (more updated) version.

2. Select File, New, Transformation.

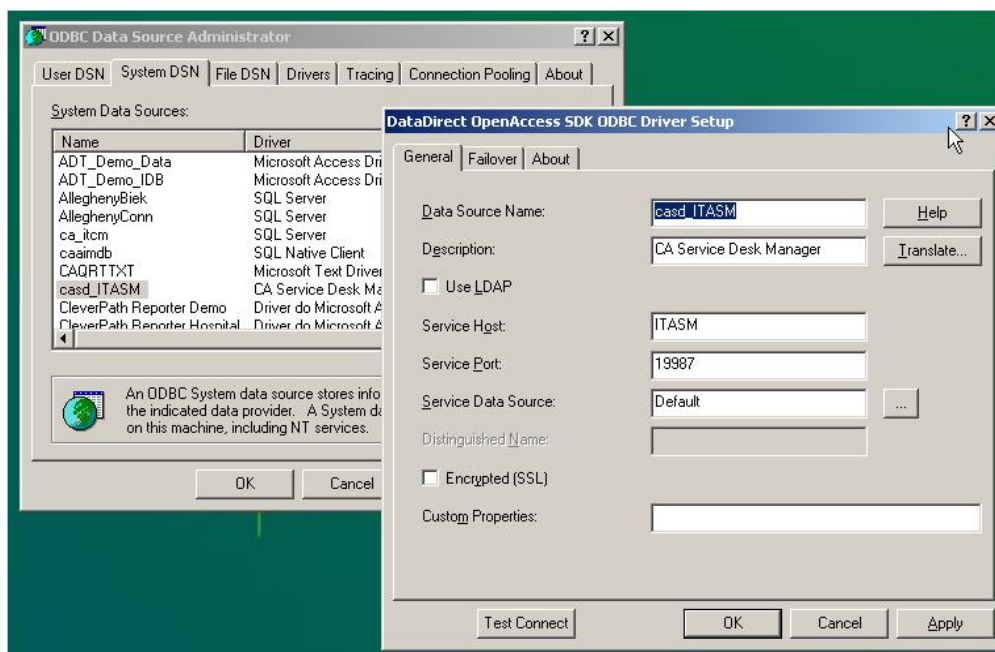
You will see the page shown in the following example.



Note: The difference between a transformation and a job is that a transformation is an individual ETL task and a job consists of multiple transformations that are assembled together.

3. Define a connection to the CA SDM MDB.

As we are leveraging the ODBC driver, verify that an ODBC DSN is defined that points to the CA SDM MDB. Use the ODBC Administration tool (ODBC Data Source Administrator) from the server Control Panel (or Administration Tools) to create a DSN. Test the connection. The following example shows the DSN that we defined in this section.



4. Click the View tab and double-click the Database connections.

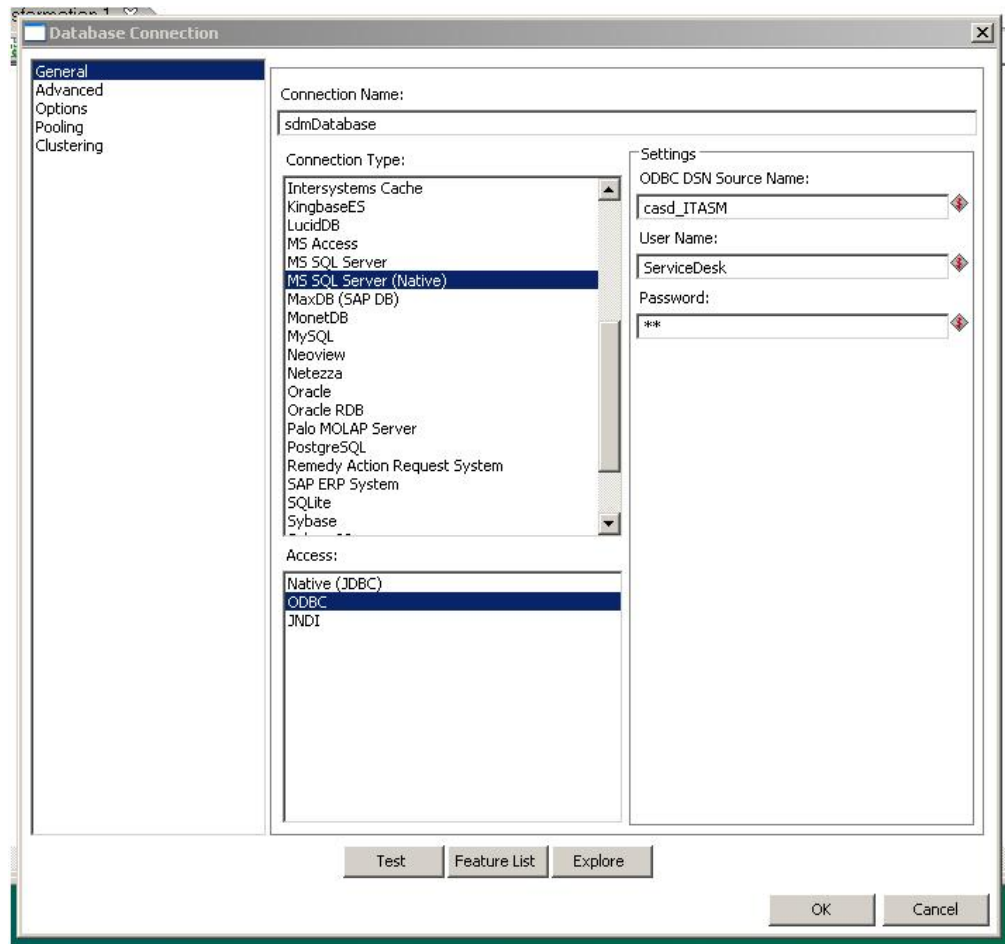
5. Provide the following information: connection name, connection type, and access information.

If you are creating many jobs, add this information to the kettle.properties file so that this information can be used as run-time parameters. This approach is used by the predefined content. For this example, the following information is assumed:

- Database connection name: sdmDatabase
- Database type: SQL Server
- Database access: JDBC
- Database ODBC_DSN: casd_ITASM
- Database Name: ServiceDesk

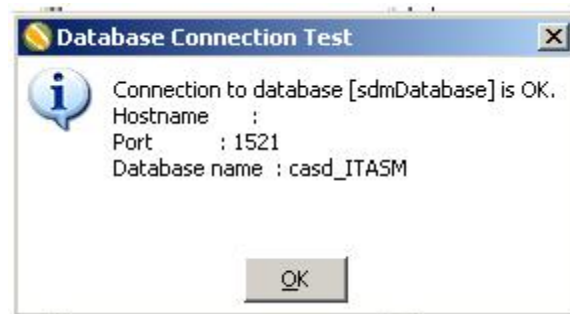
- Database Password: ca

The completed form appears as in the following example:



6. Click Test.

The following confirmation message appears:



If you get an error message, verify that the parameters are correct. Also verify that the CA SDM ODBC Driver services are running.

7. Click the View tab and select Database Connections.

The sdmDatabase connection displays.

8. Drag and drop the sdmDatabase connection onto the transformation breadboard.

The Table Input window appears.

9. Enter the SQL statement that will return the fields that you want to process.

In this example, the statement returns information about incidents:

```
SELECT
    in.id AS req_id,
    in.persistent_id AS persistent_id,
    in.ref_num AS ref_num,
    in.type AS req_type,
    in.active AS active,
    in.status AS status,
    crs.sym as status_sym,
    in.category AS area_id,
    pcat.sym AS area,
    symptom_code.sym AS symptom_code,
    PdmString(in.group) AS group_id,
    grp.combo_name AS group_name,
    in.priority AS priority,
    pri.sym AS priority_sym,
    in.urgency AS urgency,
    urg.sym AS urgency_sym,
    in.impact AS impact,
    imp.sym AS impact_sym,
    in.severity AS severity,
    sev.sym AS severity_sym,
    PdmString(nr1.id) AS ci_id,
    nr1.name AS ci_name,
    nr1.family AS ci_family,
    nr1.class AS ci_class,
    PdmString(nr2.id) AS service_id,
    nr2.name AS service_name,
    nr2.family AS service_family,
    nr2.class AS service_class,
    in.open_date AS open_date,
    in.resolve_date AS resolve_date,
    in.close_date AS close_date,
    PdmSeconds(in.time_spent_sum) AS time_spent,
    in.resolution_code AS res_code,
    resocode.sym AS res_code_sym,
    in.resolution_method AS res_method,
    resomethod.sym AS res_method_sym,
    in.sla_violation AS sla_violation,
    PdmString(in.tenant) as tenant_id,
```

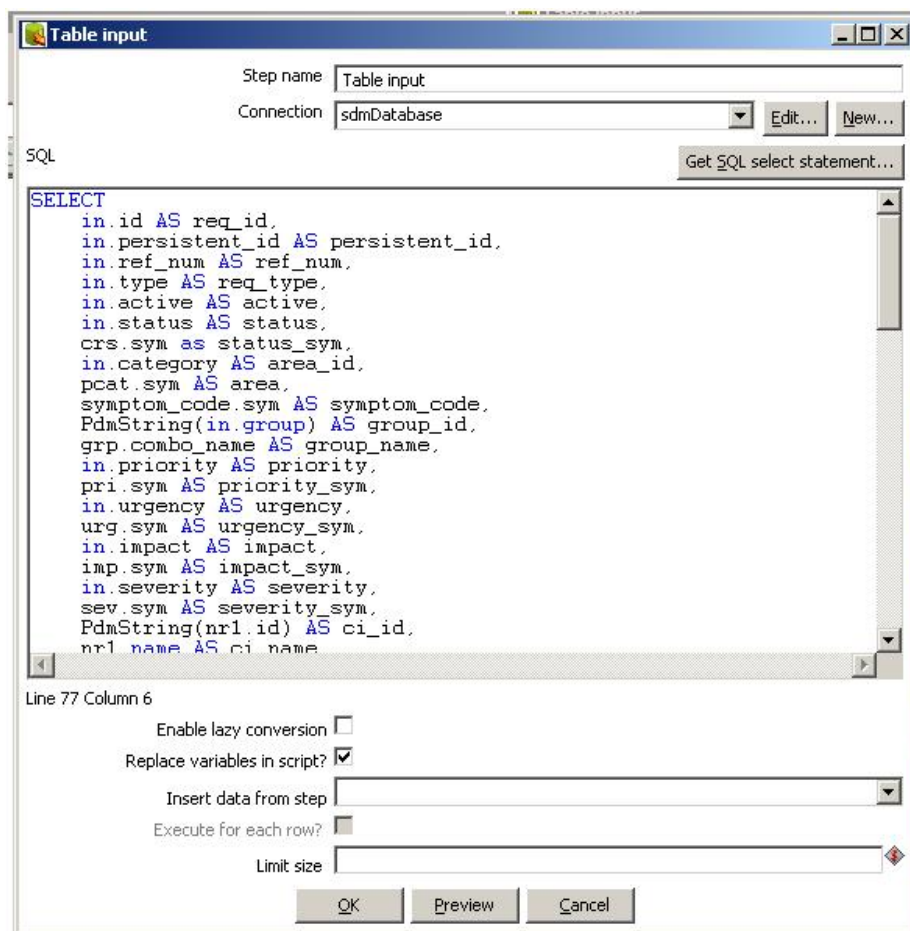
```

tenant.name AS tenant_name,
in.external_system_ticket AS ext_ticket,
in.last_mod_dt AS last_mod_dt,
in.major_incident AS major_incident,
in.ticket_avoided AS ticket_avoided,
in.caused_by_chg AS caused_by_change,
in.incorrectly_assigned AS incorrectly_assigned,
in.outage_start_time AS outage_start_time,
in.outage_end_time AS outage_end_time,
in.outage_type AS outage_type,
outage_type.sym AS outage_type_sym,
sdsc.violation_cost AS violation_cost,
in.charge_back_id AS charge_back_id
FROM
    in
INNER JOIN cnt ON cnt.id = in.customer
LEFT JOIN tenant ON in.tenant = tenant.id
LEFT JOIN sdsc ON sdsc.code = pcat.service_type
LEFT JOIN nr nr1 ON in.affected_resource = nr1.id
LEFT JOIN nr nr2 ON in.affected_service = nr2.id
LEFT JOIN pcat ON in.category=pcat.persistent_id
LEFT JOIN grp ON in.group=grp.id
LEFT JOIN chg ON in.change=chg.id
LEFT JOIN symptom_code ON in.symptom_code = symptom_code.id
LEFT JOIN resocode ON in.resolution_code = resocode.id
LEFT JOIN resomethod ON in.resolution_method = resomethod.id
LEFT JOIN rc ON in.rootcause = rc.id
LEFT JOIN chg_tpl ON chg.template_name=chg_tpl.id
LEFT JOIN pri ON in.priority = pri.enum
LEFT JOIN urg ON in.urgency = urg.enum
LEFT JOIN imp ON in.impact = imp.enum
LEFT JOIN sev ON in.severity = sev.enum
LEFT JOIN crs ON in.status = crs.code
LEFT JOIN outage_type ON in.outage_type = outage_type.id
WHERE
in.last_mod_dt >= {ts '${STARTDATE} ${STARTTIME}'}
AND in.last_mod_dt <= {ts '${ENDDATE} ${ENDTIME}'}

```

10. Verify that the following check box is selected: Replace variables in script?

This option allows you to use the parameters in the kettle.properties file. The following example displays this check box.



- Click the Preview tab to see the requests of this query.

You will see a page that is similar to the following example.

Examine preview data

Rows of step: Table input (1000 rows)

#	req_id	persistent_id	ref_num	req_type	active	status	status_sym	area_id	area	syn
1	400511	cr:400511	812	I	0	CL	Closed	pcat:400098	Security.Access	
2	400556	cr:400556	885	I	0	CL	Closed	pcat:400117	Applications.Expenses	
3	400558	cr:400558	887	I	0	CNCL	Cancelled	pcat:5101	Hardware	
4	400559	cr:400559	888	I	0	CL	Closed	pcat:400098	Security.Access	
5	400561	cr:400561	891	I	0	CL	Closed	pcat:5108	Printer	
6	400562	cr:400562	892	I	0	CL	Closed	pcat:400117	Applications.Expenses	
7	400563	cr:400563	893	I	0	CL	Closed	pcat:400110	Software.Internal	
8	400581	cr:400581	933	I	0	CL	Closed	pcat:5109	Email	
9	400582	cr:400582	934	I	0	CL	Closed	pcat:400117	Applications.Expenses	
10	400584	cr:400584	936	I	0	CNCL	Cancelled			
11	400585	cr:400585	937	I	0	CL	Closed	pcat:400098	Security.Access	
12	400586	cr:400586	938	I	0	CL	Closed	pcat:5103	Applications	
13	400587	cr:400587	944	I	0	CL	Closed	pcat:5109	Email	
14	400588	cr:400588	945	I	0	CL	Closed	pcat:400072	Hardware.Computer.Problems	
15	400591	cr:400591	953	I	0	CNCL	Cancelled	pcat:400085	Hardware.Network.Router	
16	401243	cr:401243	2161	I	0	CL	Closed	pcat:400065	Network.Performance	
17	401244	cr:401244	2162	I	0	CL	Closed	pcat:400097	Phone.Handset	
18	401246	cr:401246	2164	I	0	CL	Closed	pcat:400117	Applications.Expenses	
19	401247	cr:401247	2165	I	0	CL	Closed	pcat:400123	Hardware.Printer.Networked	
20	401248	cr:401248	2166	I	0	CL	Closed			
21	401249	cr:401249	2167	I	0	CL	Closed	pcat:400098	Security.Access	
22	401251	cr:401251	2169	I	0	CL	Closed	pcat:400124	Applications.VPN	
23	402005	cr:402005	3013	I	0	CL	Closed			
24	402006	cr:402006	3025	I	0	CL	Closed			
25	402007	cr:402007	3026	I	0	CL	Closed			
26	402008	cr:402008	3027	I	0	CL	Closed			
27	402009	cr:402009	3028	I	0	CL	Closed			
28	402010	cr:402010	3029	I	0	CL	Closed			
29	402011	cr:402011	3030	I	0	CL	Closed			
30	402012	cr:402012	3031	I	0	CL	Closed			
31	402023	cr:402023	3042	I	0	CL	Closed			
32	402024	cr:402024	3043	I	0	CL	Closed			
33	402025	cr:402025	3044	I	0	CL	Closed			
34	402026	cr:402026	3045	I	0	CL	Closed			
35	402027	cr:402027	3046	I	0	CL	Closed			
36	402028	cr:402028	3047	I	0	CL	Closed			
37	402013	cr:402013	3013	I	0	CL	Cancelled			

Export a CSV File for the CA BSI Adapter

After you have created the transformations, you need to export a CSV file that will be processed by the CA BSI adapter.

Follow these steps:

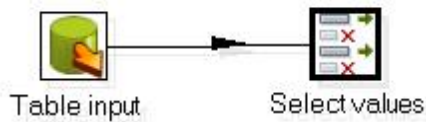
- Click the Design tab and expand Transform.
- Select the Select Values icon and drag it to the transformation breadboard.

3. Place the mouse cursor over the table input and click.

Four symbols appear below the icon.

4. Select the symbol on the right (right arrow) and drag it to the Select Values icon.

A line connecting the two appears as shown in the following example.



5. Click Select values.

Three tabs are displayed.

6. Click the Select & Alter tab.

7. On the right, click Get fields to select.

The rows from the SQL statement that you created previously are selected.

8. Click the Remove tab and click Get fields to remove.

9. Remove the following fields:

- ref_num
- req_type
- active
- status_sym
- open_date
- close_date
- last_mod_dt

Note: You are removing the fields that you actually want to keep. That is, you are removing from this list the fields that you want to keep in the ETL job.

10. Click the Meta-data tab and click Get fields to change.

11. Select each entry that is *not* a field that you just removed and delete the entry.

12. For the remaining fields, enter the following information in the Rename to field:

- ref_num: Ticket_ReferenceNum
- req_type: Ticket_Type
- active: Ticket_State
- status_sym: Ticket Status
- open_date: Ticket_OpenDate
- close_date: Ticket_CloseDate
- last_mod_dt: Ticket_LastModifiedDate

13. For each field, change the Type as follows:

- ref_num: String
- req_type: String
- active: String
- status_sym: String
- open_date: Date
- close_date: Date
- last_mod_dt: Date

14. Change the format of the three date fields to match the following format:

dd/MM/yyyy HH:mm:ss

The data for the fields should appear as in the following example.

[illegible]

Export Data into a CSV File

Export the data into a CSV file that will be processed by the CA BSI adapter.

Follow these steps:

1. On the Design tab, click the Output icon.
2. Expand and select Text file output.
3. Drag and drop Text file output onto the transformation breadboard.
4. Connect the Select Value icon to the Text file output.
5. Double-click Text file out.

Three tabs are displayed.

6. Select the File tab and enter the information as shown in the following example.

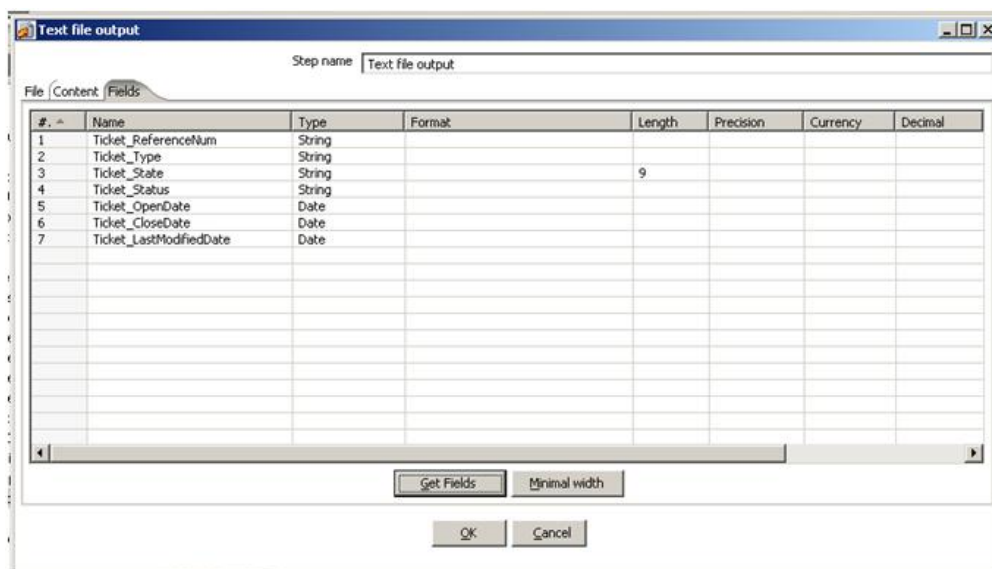
The screenshot shows the 'Text file output' dialog box with the 'File' tab selected. The 'Step name' is 'Text file output'. The 'Filename' field contains the expression `\${ETL_RESULTS_DIR}/sdm_requests` with a 'Browse...' button to its right. Below this are several checkboxes: 'Run this as command instead?' (unchecked), 'Do not create file at start?' (unchecked), 'Accept file name from field?' (unchecked), 'Include stepnr in filename?' (unchecked), 'Include partition nr in filename?' (unchecked), 'Include date in filename?' (unchecked), 'Include time in filename?' (unchecked), and 'Specify Date time format?' (unchecked). The 'File name field' is set to an empty dropdown, and the 'Extension' is set to 'csv'. The 'Date time format' is set to an empty dropdown. A 'Show filename(s)...' button is located below the 'Date time format' field. At the bottom, the 'Add filenames to result' checkbox is checked. 'OK' and 'Cancel' buttons are at the bottom right.

7. Click the Content tab and enter the information as shown on the following example.

The screenshot shows the 'Text file output' dialog box with the 'Content' tab selected. The 'Step name' is 'Text file output'. The 'Append' checkbox is unchecked. The 'Separator' is set to a comma (,) with an 'Insert TAB' button to its right. The 'Enclosure' is set to a double quote ("). Below these are checkboxes: 'Force the enclosure around fields?' (unchecked), 'Disable the enclosure fix?' (unchecked), 'Header' (checked), and 'Footer' (unchecked). The 'Format' is set to 'DOS', 'Compression' is 'None', and 'Encoding' is an empty dropdown. There are also checkboxes for 'Right pad fields' (unchecked) and 'Fast data dump (no formatting)' (unchecked). The 'Split every ... rows' field is set to '0'. The 'Add Ending line of file' field is empty. 'OK' and 'Cancel' buttons are at the bottom right.

8. Click the Fields tab and click Get Fields.

The data that is displayed on your window should be similar to the following example.



9. Click Okay.
10. Click the right arrow button on the left to run the actual transformation.



You are prompted to enter run-time parameters.

11. Click Launch.

You are prompted to save the transformation.

12. Enter a name for the transformation.

Note: Verify that the dialog is set to save the transformation in the C:\etl\transformation subdirectory, or any directory where you decide to save these types of files.

When the transformation is saved, you can navigate to the C:\etl\results directory and you can view the sdm_requests.csv file. The following example shows a transformation file.

Ticket Referen...	Ticket Type	Ticket State	Ticket Status	Ticket OpenDate	Ticket CloseDate	Ticket LastMod...
812	I	0	Closed	2008/05/01 12:1...	2008/05/01 21:1...	2010/08/13 09:1...
885	I	0	Closed	2008/06/09 14:1...	2008/09/01 11:1...	2010/08/09 15:1...
887	I	0	Cancelled	2008/06/09 14:1...	2005/12/11 09:1...	2010/08/09 15:1...
888	I	0	Closed	2008/06/09 14:1...	2008/06/09 14:1...	2010/08/09 15:1...
891	I	0	Closed	2008/06/11 10:1...	2008/09/03 11:1...	2010/08/09 15:1...
892	I	0	Closed	2008/06/11 10:1...	2008/09/03 11:1...	2010/08/09 15:1...
893	I	0	Closed	2008/06/12 08:1...	2008/09/03 11:1...	2010/08/09 15:1...
903	I	0	Closed	2008/06/30 14:1...	2008/09/03 11:1...	2010/08/09 15:1...
904	I	0	Closed	2008/06/30 16:1...	2008/09/03 11:1...	2010/08/09 15:1...
936	I	0	Cancelled	2008/06/30 16:1...	2005/12/11 09:1...	2010/08/09 15:1...
937	I	0	Closed	2008/06/30 16:1...	2008/06/30 15:1...	2010/08/09 15:1...
938	I	0	Closed	2008/06/30 17:1...	2008/09/03 11:1...	2010/08/09 15:1...
944	I	0	Closed	2008/07/08 09:1...	2008/09/03 11:1...	2010/08/09 15:1...
945	I	0	Closed	2008/07/08 18:1...	2008/07/08 19:1...	2010/08/09 15:1...

You can now process this file through the CA BSI adapter.

Integration Points from CA BSI to CA SDM

CA BSI can generate alerts for contract deviations, service level violations, or any other events that you want to track. An alert is a notification sent to one or more users about events that are taking place in the system, according to predefined conditions defined in alert profiles. You can configure alert profiles for events in general or for events that apply to specific contracts. You can configure such alerts in CA BSI to create a ticket automatically in CA SDM.

Configure the CA BSI Mail Interface

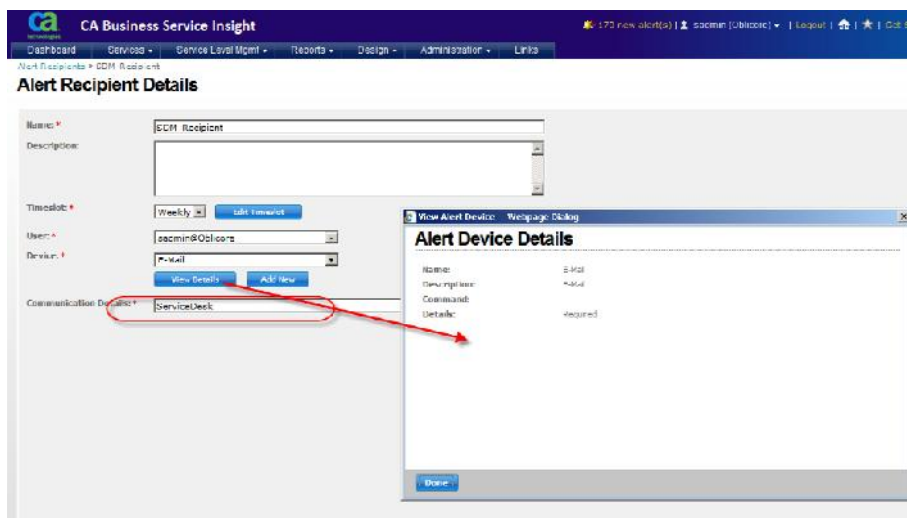
The simplest way for CA BSI to create a CA SDM ticket is to use the mail interface of both products.

Follow these steps:

1. Log in to CA BSI and, from the main menu bar, click Reports, Alerts, Alert Recipient.
2. Click Add New.

The Alert Recipient Details page opens.

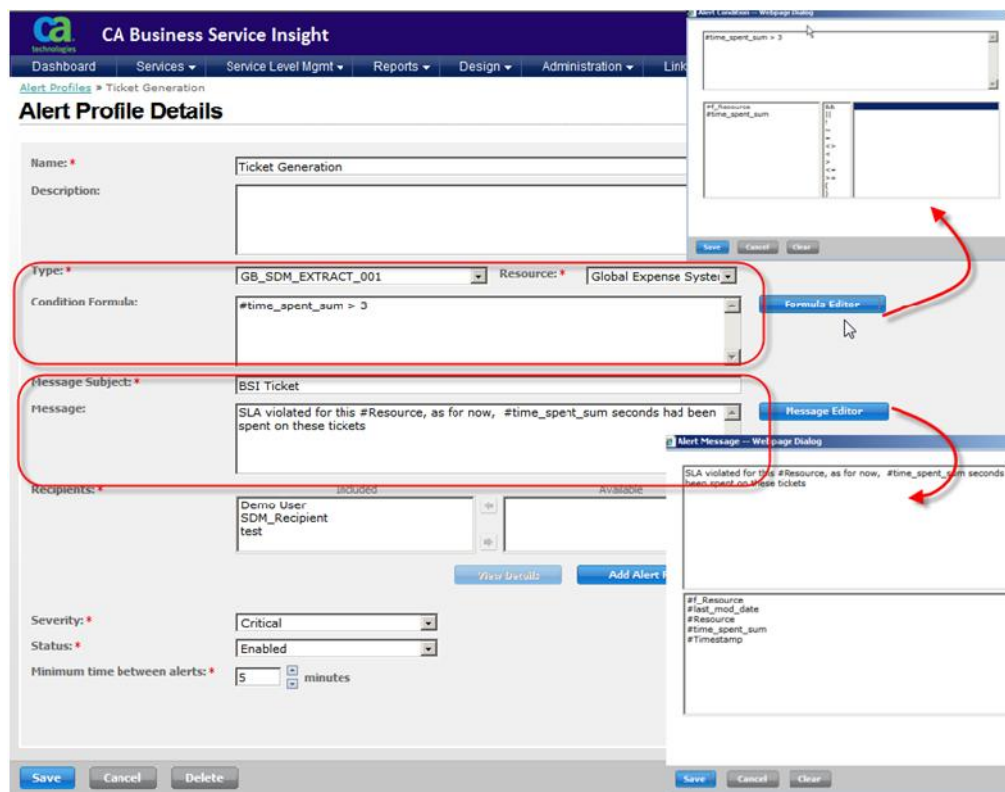
- Specify the recipient name, select the Device as E-mail, and specify the CA SDM mailbox name in the Communication Details field. The following example shows the completed page.



Next you configure an Alert Profile to specify what needs to be included in the ticket and when.

- From the menu bar, click Reports, Alerts, Alert Profile and click Add New.

The Alert Profile Details page appears, as shown in the following example.



An alert Profile could be divided into at least three main parts:

- Identification of the alert: name and description
- Trigger for the ticket creation (event type or CA BSI event, resource, and condition formula). Specify the condition using the Condition Formula Editor.
- Definition of the information that needs to be sent to the ticket. Any variables from the event itself can be used.

Configure the CA SDM Mail Interface

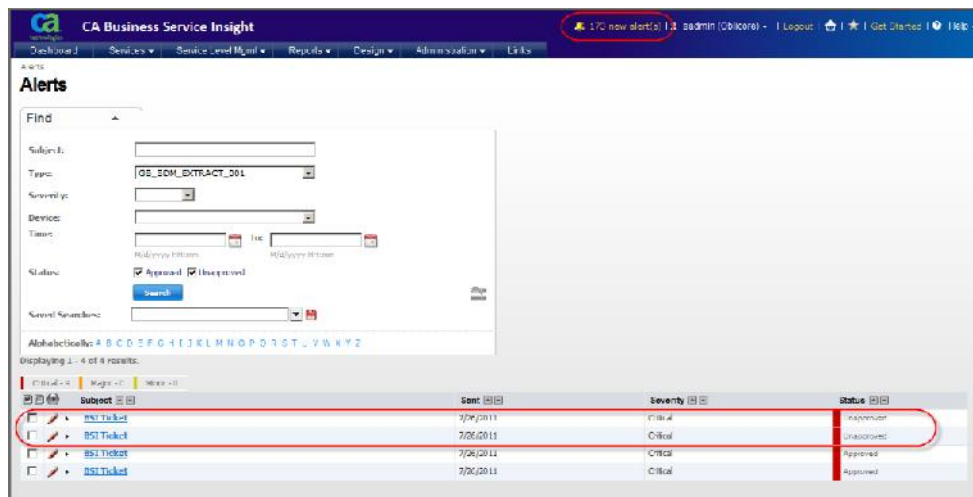
Configure CA SDM to create a mailbox rule that opens a ticket when it receives an email from CA BSI.

Follow these steps:

1. Click the Administration tab and select Email, Mailbox Rules.
2. Click Add New and specify the details as shown in the following example.

The screenshot displays the 'Update Mailbox Rule' window in CA Service Desk Manager. The 'Filter' field is set to 'Subject contains BSI Ticket'. The 'Action' is 'Create/Update Object' with the 'Action Object' set to 'Incident'. The 'Reply' field is 'Reply Subject'. The 'Active' checkbox is checked. The 'Write to syslog' checkbox is also checked. The 'TextAPI Defaults' and 'TextAPI Ignore Incoming' sections are visible. The 'Details' tab is selected, showing 'Last Modified Date' (07/25/2011 09:20 am) and 'Last Modified By' (ServiceDesk). The 'Success Text' field is empty.

When the conditions specified in the alert profile are met, an alert is triggered. The alert appears in the Alerts list in CA BSI.



The alert sends an email to CA SDM, which creates a ticket as shown in the following example.

