



Version 6.0.2



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This edition applies to IBM WebSphere Business Monitor SAP Sample Adapter SupportPac, Version 6.0.2 and to all subsequent releases and modifications until otherwise indicated in new editions.

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SAP Sample Adapter SupportPac

The IBM® WebSphere® Business Monitor SAP Sample Adapter SupportPac™ is a sample solution provided by IBM for monitoring SAP enterprise resource planning (ERP) systems with WebSphere Business Monitor. The solution uses an adapter to convert business events from an SAP system to Common Base Events that are processed by WebSphere Business Monitor.

This solution uses the WebSphere Business Integrator Adapter for SAP to collect the business events from the SAP ERP system. Using the Java™ message service (JMS), the events are transmitted to the Common Event Infrastructure (CEI) server with Business Process Container (BPC). A BPEL application (WBM_SAPApp) resides on the CEI server with BPC that transform the events to Common Base Events and sends them to the WebSphere Business Monitor server. The WebSphere Business Monitor server has a dedicated monitor model module (SO_MMEAR) that processes the incoming Common Base Events. From this point these events are handled by the WebSphere Business Monitor Server.

The SAP Sample Adapter uses the SAP Java Connector (JCo) to connect to the SAP system and poll for new events. The events are then sent through the WebSphere Business Integration Adapter and delivered to a JMS queue that is installed on the CEI server with BPC. A BPEL application picks these events from the queue and transforms them to suitable Common Base Events. Because this is an asynchronous task, events that are emitted while the adapter is not connected to the SAP system are kept as business objects in the SAP ERP system until the adapter is connected to the SAP ERP system. Once the adapter connects to the system, the events are delivered to the WebSphere Business Monitor.

This SupportPac sample uses the creation of a sales order as the business event to monitor. To view the business data gathered from the SAP ERP system, use the standard WebSphere Business Monitor portlets. The definitions of the key performance indicators (KPIs) and the design of the portlets in this sample adapter are provided to you as an example only. The provided files are examples only and do not represent an IBM recommendation.

SAP Sample Adapter install

The SAP Sample Adapter SupportPac consists of several files that demonstrates the ability to connect WebSphere Business Monitor with an SAP system and monitor SAP business events. The SupportPac also contains a Project Interchange file that you can edit and configure for your own purposes.

The basic steps to installing and configuring the WebSphere Business Integration Adapter for mySAP.com are presented in the following steps:

Prerequisites for the SAP Sample Adapter SupportPac

Before you can use the SAP Sample Adapter SupportPac files, you must ensure that the required products are installed and that you have the required skills.

To use this SupportPac, you must have a licensed installation of IBM WebSphere Business Monitor v6.0.2.1 on your system. If you have not upgraded to v6.0.2.1, you do must upgrade before using the SupportPac. To upgrade to WebSphere

Business Monitor v6.0.2.1, see the Release Notes (http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp?topic=/com.ibm.btools.help.monitor.doc/Doc/concepts/release_readme/rn_aboutthisrelease.html) on the WebSphere Business Monitor Information Center for information on upgrading. You must also have a working knowledge of the WebSphere Business Monitor programming model and have used the product as well as the WebSphere Business Monitor Development Toolkit, the WebSphere Business Monitor Server, and dashboards.

For the latest updates to the documentation, see the WebSphere Business Monitor Support Web site (<http://www.ibm.com/support/search.wss?rs=802&tc=SSRR3&q=6.0.2.1>).

Ensure that the following software is installed.

- WebSphere Business Monitor v6.0.2.1
- WebSphere Business Integration Adapter Framework v2.6.0
- WebSphere Business Integration Adapter for mySAP.com v6.0.0
- WebSphere Business Monitor Development Toolkit v6.0.2 (IDE)
- The MQ Client libraries

Refer to the Architecture section for information about the recommended topology.

In addition to the software listed, the SAP system must be configured to deliver business events whenever an SAP sales order is created within the SAP ERP system. The WebSphere Business Integration station is a subcomponent of the WebSphere Business Integration Adapter for mySAP.com and is shipped as an Advanced Business Application Programming (ABAP) transport that must be applied and configured in the target SAP system. The SAP Business workflow component which is an integral part of any SAP ERP system must be configured to send the corresponding business event to the WebSphere Business Integration station.

For more details on setting up the SAP Business Workflow to send business events and deliver them using the WebSphere Business Integration Adapter for mySAP.com and incorporating the resulting SCA JMS export, see the section in the IBM Redbook *Connect WebSphere Service Oriented Middleware to SAP* about invoking WebSphere Process Server and WebSphere Enterprise Service Bus using JMS.

Related concepts

Architecture of the SAP Sample Adapter

The WebSphere Business Monitor for SAP uses a simple architecture to monitor SAP systems for events.

Related tasks

 [Connect WebSphere Service Oriented Middleware to SAP Redbook](#)

Related reference

[Release Notes](#)

Skills Required

To use this sample adapter, it is required that you must have already acquired some skills.

To use this sample adapter, you must:

- Be familiar with using an SAP system

- Have an existing installation of WebSphere Business Monitor Server 6.0.2.1 (server, dashboard and databases)
- Have a modest to excellent understanding and/or experience with WebSphere Business Monitor V6.0.2 including the monitor programming model
- Have some experience with Monitor Dashboard configuration
- Be familiar with WebSphere Business Integration Adapter and Java Message Service
- Have an understanding, and preferably some experience, with WebSphere Process Server V6.0.2 including Business Process Container for BPEL
- Be familiar with setting up a WebSphere Process Server V6.0.2 so that it can be monitored by WebSphere Business Monitor
- Have some experience with WebSphere Integration Developer V6.0.2 (optional)

Installing the WebSphere Business Integration station

A detailed description of how to install the relevant ABAP transports for the WebSphere Business Integration Adapter for mySAP.com is described in the redbook *WebSphere Business Integration for SAP*. See the section about configuring the SAP R/3 to work with the ABAP Extension Module of the Adapter.

Getting the SAP SupportPac

The SAP SupportPac is available as a Web download.

1. Go to <http://www.ibm.com/support/docview.wss?rs=171&uid=swg> and download the SAP SupportPac.
2. Extract the files into a working directory. Verify that your working directory contains the following files:
 - ProjectInterchange files (monitor4sap.zip and BO2CBEconverter.zip)
 - EAR files (SO_MMEAR.ear and WBM_SAPApp.ear)
 - SAP Adapter config file and business objects definitions
 - Conversion Logic file (SAPrules.xml)
 - Installation doc (PDF file)
3. Copy the SAPrules.xml file to the root folder of your CEI with BPC server profile.

Installing the WebSphere Business Integration Adapter Framework

Before you can use the WebSphere Business Monitor for SAP monitor model, you must install the WebSphere Business Integration Adapter Framework if you have not already done so.

During the installation of the WebSphere Business Integrator Adapter Framework the setup procedure asks for the location of the MQSeries® class libraries. These libraries are available as a MQSeries SupportPac MA88.

To install the WebSphere Business Integration Adapter Framework:

1. Install the MQSeries classes for Java and Java Messaging:
 - a. Download the MQSeries classes for Java and Java Messaging SupportPac from http://www.ibm.com/support/docview.wss?rs=203&uid=swg24011226&loc=en_US&cs=utf-8&lang=en.
 - b. Go to the download packages list and download ma88_win.zip.
 - c. Extract the contents of the file to a working directory.
 - d. If you have a previous SupportPac installed, uninstall it.

- e. Run setup.exe from the working directory
2. Install the WebSphere Business Integration Adapter framework 2.6.0 (base install):
 - a. Locate and copy %WINDOWS%\system32\msvcr71.dll and %WINDOWS%\system32\msvc71.dll to a backup directory.
 - b. Open a Windows® command window by clicking **Start** → **Run**. Type cmd and click **OK**.
 - c. Use the cd command to change to the directory where the Adapter Framework v2.6.0 installer is located, for example, cd D:\SAP_ADAPTER\adapter_build\AF2.6.0\260\.
 - d. Enter setupwin32.exe -W ICSSequence.active=false.
 - e. Select a language and click **OK**.
 - f. Click **Next**, accept the Software License Agreement, and then click **Next**.
 - g. Clear the **IBM WebSphere InterChange Server** check box and click **Next**.
 - h. Select both **IBM WebSphere Business Integration Adapter Runtime** and **IBM WebSphere Business Integration Toolset** and click **Next**.
 - i. Click Browse and locate the directory for the IBM WebSphere MQ 5.3 Java Library, for example, C:\Program Files\IBM\MQSeries\Java\lib.
 - j. Accept all the defaults by clicking **Next**, **Next**, **Next**, **Next**, and **Finish**.
3. Install the WebSphere Business Integration Adapter framework fix pack:
 - a. Install the fix pack for Adapter Framework v2.6.0.5 You can find the fix pack at: <ftp://ftp.software.ibm.com/software/ts/cw/adapters/AdapterFramework/>.
 - b. Download the .zip file, and extract the file to a location on your system.
 - c. Locate the directory where you extracted the files and double-click setupwin32.exe.
 - d. Click **OK** and then **Next**.
 - e. Accept the Software License Agreement and then continue by clicking **Next**, **Next**, **Next**, and **Finish**.
 - f. Check your %WINDOWS%\system32 directory and verify that msvcr71.dll and msvc71.dll are still there. If those files no longer exist, copy them from the location where you saved the earlier.

Installing the WebSphere Business Integration Adapter for mySAP.com

After installing the Adapter Framework, you can install the mySap.com v6.0.0.

The WebSphere Business Integration Adapter for mySAP.com must be installed into the Adapter Framework.

To install the mySAP.com v6.0.0 adapter:

1. Browse to the directory where you saved the mySAP.com adapter.
2. Double-click **setupwin32.exe**.
3. Click **OK** and then click **Next**.
4. Accept the Software License Agreement, and click **Next**, **Next**, and **Next**.
5. Leave the **InterChange Server** field blank, and click **Next**.
6. Click **Next** and then click **Finish**.

Configuring the WebSphere Business Monitor Server and CEI Server with BPC

After installing the mySap.com adapter, you must configure the WebSphere Business Monitor Server to run the SAP monitor model (SO_MMEAR.ear) and the CEI Server with BPC to run the Business Object to Common Base Events converter module (WBM_SAPApp.ear).

To configure the BPEL container (BPC) in the WebSphere Process Server where the WBM_SAPApp.ear is going to be installed, see <http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/topic/com.ibm.wsps.602.bpc.doc/doc/bpc/t2configovr.html> .

Configuring the WebSphere Business Integration Adapter connection

After configuring the WebSphere Business Monitor Server and CEI Server with BPC, you must configure the WebSphere Business Integration Adapter for SAP to connect to your SAP ERP system.

To configure the sample WebSphere Business Monitor SAP adapter:

1. Save the adapter configuration (.cfg) file and the business-object definition (.xsd) files to a folder. These files are located in the config directory of the extracted SupportPac.
2. Open the SAP adapter configurator file and edit the configuration file.
3. Configure the standard properties for the adapter:
 - a. Click the **Standard Properties** tab.
 - b. Locate the **jms.MessageBrokerName** property, and set the value to `WBIA_QM:WBIA.JMS.SVRCONN:localhost:port` where *localhost* and *port* are the address and port of your WebSphere Process Server.
 - c. Locate the **RepositoryDirectory** property, and set the value to the location where you saved the business-object definition (.xsd) files.
4. Configure the connector-specific properties for the adapter by completing the following steps:
 - a. Click **Connector-Specific Properties** tab.
 - b. Set the values for the following properties based on the information in your SAP system: **ApplicationPassword**, **ApplicationUserName**, **Sysnr**, **Client**, and **Hostname**.
5. Select **File** → **Save** → **To file** to save the modifications.
6. Download the sapjco-ntintel-2.1.8.zip file from <http://service.sap.com/connectors> and extract the file to a working directory. Copy sapjco.jar, librfc32.dll, and sapjcorfc.dll to the SAP connectors directory for WebSphereAdapters, for example, C:\IBM\WebSphereAdapters\connectors\SAP.

Note: You must have an SAPNet account to access the SAP JCo (if you do not already have one, contact your local SAP Basis administrator).

7. Start the SAP adapter by completing the following steps:
 - a. From Windows, select **Start** → **Run**.
 - b. Type `cmd` in the **Open** field, and click **OK**.
 - c. Enter the following command: `C:\IBM\WebSphereAdapters\connectors\SAP\start_sap.bat WBM WAS -cD:\WBM_SAP\WBMConnector.cfg`

Note: C:\IBM\WebSphereAdapters\connectors\SAP\ is the folder where you installed the adapter. WBM is the name of the adapter. WebSphere Application Server is required by the Process Server.
-cd:\WBM_SAP\WBMConnector.cfg points to the configuration file for your adapter.

Note: You must deploy the WBM_SAPApp.ear file successfully before starting the WebSphere Business Integrator Adapter Framework. The deployed EAR file creates the Queue Manager and Queues in the WebSphere Process Server that WebSphere Business Integrator Adapter Framework connects to when starting.

Configuring the SAP business workflow to emit business objects

This procedure configures your SAP business workflow component to emit certain business events whenever a particular business situation occurs. The SAP business workflow and the event manager are core components of each SAP ERP system.

Configure the SAP system:

1. Find the SAP name of the business object:
 - a. Log on to the SAPGUI.
 - b. Open the Business Object Browser using the SW02 shortcut.
 - c. Navigate through the Application Components tree until you find the correct business object.
 - d. Double-click the business object, and select **BO Data Model** to get the data model name of the object, for example, BUS2032 (SalesOrder).
2. Configure the SAP event manager to send business events to the WebSphere Business Integration station:
 - a. Open the Event Type Linkages using the SWETYPV shortcut.
 - b. Click **New Entries** to add an entry for your object.
 - c. For the **Object Category**, select **BOR Object Type**.
 - d. For **Object Type**, specify the business object name, for example, BUS2032.
 - e. Specify the event you want to catch from this business object, for example, CREATED.
 - f. For **Receiver Call**, specify Function Module.
 - g. For the **Receiver Function Module**, specify /CWLD/ADD_TO_QUEUE_DUMMY_47.
 - h. For the **Receiver Type Function Module**, specify /CWLD/ADD_TO_QUEUE_WF_47.
 - i. Select **Linkage Activated**.

Configuring the WebSphere Business Integration Station to process business events

The WebSphere Business Integration station is a part of the WebSphere Business Integration Adapter for mySAP.com. It is the ABAP based portion which resides within the SAP target system the adapter is communicating. The central administration and configuration point for this component is the WebSphere Business Integration station which can be reached by using shortcut /CWLD/HOME.

Use the WebSphere Business Integration station to configure how business events are collected and distributed to the external connector component.

Configure the SAP event manager to send business events to the WebSphere Business Integration station:

1. Navigate to the WebSphere Business Integration station using the /CWL/D/HOME shortcut.
2. Go to **Tools** → **Config Objects** to create an entry for the business event configured in the event type linkage section, for example, SalesOrder.CREATED.

Note: This entry is case sensitive.

3. Go to **Tools** → **Maintain Objects** to create an entry for the business object the adapter is going to process, for example, **SO_CREATED_SAP47_vbak**.
4. Go to **Configuration** → **Configuration Values** to connect the two entries created. This connection maps which business event correlates to which adapter business object.
 - a. For the **Configuration name**, specify SalesOrder.CREATED.
 - b. For the **Counter**, specify 0.
 - c. For the **Configuration value**, specify SO_CREATED_SAP47_vbak.Retrieve

Note: Append the verb .Retrieve to the connection configuration value.

5. Go to **Configuration** → **Event Distribution** and configure the event distribution:
 - a. Define a new entry with the object name and the Websphere Business Integrator Adapter name (connector name).
 - b. Verify that the server is **WAS**.

Note: You must use this name for the business object which is picked up by the adapter because the SupportPac looks for a created business object XSD that uses this name.

Deploying the WBM_SAPApp.ear file

Use the Administrative Console of the WebSphere Process Server containing the BPEL Container (BPC) to install the WBM_SAPApp.ear file.

To install the WBM_SAPApp.ear file:

1. Start the Monitor server and open the administrative console by completing the following steps:
 - a. In Windows, select **Start** → **All Programs** → **IBM WebSphere** > **Process Server 6.0** → **Profiles** → **wbmonitor** → **Start the server** .
 - b. In Windows, select **Start** → **All Programs** → **IBM WebSphere** → **Process Server 6.0** → **Profiles** → **wbmonitor** → **Administrative console** .
 - c. Click **Log in** to login.
2. Install the EAR file by completing the following steps:
 - a. From the left menu of admin console, click **Applications** → **Enterprise Applications** .
 - b. Click **Install**.
 - c. Browse to WBM_SAPApp.ear.
 - d. Click **Next**.
 - e. Click **Step 9 Summary**.
 - f. Click **Finish**.
 - g. Click **Save to Master Configuration** .
 - h. When a confirmation dialogue opens, click **Save**.

- i. Click **Start** to start the application.

Deploying the SAP adapter monitor model

You can use the Administrative Console of the WebSphere Monitor Server to deploy the SO_MMEAR.ear file for the SAP adapter.

If the CEI server is located in a different cell than the WebSphere Business Monitor server, a service integration link must be created prior to completing this task. For information on setting up the CEI server, see the following URLs:

- http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/topic/com.ibm.btools.help.monitor.doc/Doc/tasks/administration/ad_crosscellcfg.html
- http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/topic/com.ibm.btools.help.monitor.doc/Doc/tasks/administration/ad_cei_cfg_destqueue.html

Complete the following steps to deploy the SO_MMEAR.ear file using the Setup Wizard:

1. Log in to the WebSphere Administration Console by completing the following steps:
 - a. Open a browser and navigate to the following URL: `http://host_name:port/ibm/console`
where:
 - host_name* is the fully qualified host name of the server where the Monitor server is installed
 - port* is the port used to access the console. (The default port is 9060.)
 - b. Enter your user ID and password. The user ID is required. A password is required only if security is enabled.
 - c. Click **Log in**.
2. In navigation pane, click **Applications** → **Monitor Models**. The table lists all currently installed monitor models.
3. Click *monitor_model_version_link* to display the Version Details page for the selected monitor model.
4. Under Version Properties, click **Setup Wizard** to complete the monitor model deployment. The Setup Wizard automatically advances to the next incomplete step. If this is a new version of a monitor model, the Run Data Services Generation step is the first step.
5. On the Run Data Services Generation step:
 - a. Specify the *tablespace_file_path* in the **Table space properties file** field. This value defines the file where database TABLESPACE values are stored. A default file is located in the following directory:
`/Monitor_Home/install/mondb/default_minimum_tablespace.properties`
 - b. Specify the *directory_path* in the **Output directory** field. This value defines the directory where Data Services Generation output is stored. The default directory is:
`/Monitor_Home/generation`
 - c. Specify the *capture_log_path* in the **Replication capture log path** field. This value specifies the location for the log files that are created by the Data Movement Services start and stop capture server scripts. At the time of script usage, the directory must exist on the same physical server where the Monitor database exists.

- d. Specify the *apply_log_path* in the **Replication apply log path** field. This value specifies the location for the log files that are created by the Data Movement Services start and stop apply server scripts. At the time of script usage, the directory must exist on the same physical server where the Data Mart database exists.
 - e. Specify the *number_of_minutes* in the **Database population interval** field. This value defines the number of minutes between data replication cycles of the Data Movement Services.
 - f. Click **Run** to complete the Data Services Generation step. A message displays at the top of the panel indicating the step is complete.
 - g. Click **Next**.
6. On the Run Schema Create Scripts step, you must issue commands using the DB2 command-line environment. To update the databases as a single transaction, complete the following steps:
- a. Open a DB2 command window, and change to the directory where Data Services Generation output is stored. For example:


```
/Monitor_Home/generation/schemagen/timestamp
```
 - b. Type the following commands:


```
db2 connect to monitor user db2admin using password
db2 +c -stvf state.ddl
```

 where:
 - monitor* is the name of the Monitor database
 - db2admin* is the user ID for the DB2 administrator
 - password* is the password for the DB2 administrator
 - c. Open a second DB2 command window, and change to the directory where Data Services Generation output is stored. For example:


```
/Monitor_Home/generation/schemagen/timestamp
```
 - d. Type the following commands:


```
db2 connect to datamart user db2admin using password
db2 +c -stvf datamart.ddl
```

 where:
 - datamart* is the name of the Monitor database
 - db2admin* is the user ID for the DB2 administrator
 - password* is the password for the DB2 administrator
7. Choose one of the following options based on the outcome of the previous steps:
- If the commands are successful, complete the following steps:
 - a. In the DB2 command window that is connected to the Data Mart database, type the following commands:


```
db2 commit
db2 disconnect datamart
```

 where *datamart* is the name of the Data Mart database
 - b. In the DB2 Command Window that is connected to the Monitor database, type the following commands:


```
db2 commit
db2 disconnect monitor
```

 where *monitor* is the name of the Monitor database
 - If either of commands is not successful, complete the following steps:

- a. In the DB2 Command Window that is connected to the Data Mart database, type the following commands:


```
db2 rollback
db2 disconnect datamart
```

 where *datamart* is the name of the Data Mart database
- b. In the DB2 Command Window that is connected to the Monitor database, type the following commands:


```
db2 rollback
db2 disconnect monitor
```

 where *monitor* is the name of the Monitor database
8. In the WebSphere Administrative Console, click **Refresh**. A message displays at the top of the window indicating the step is complete.
9. Click **Next**.
10. On the Run DMS Create Scripts step, you must issue commands using the DB2 command line environment.
 - a. Open a DB2 Command Window, and change to the directory where Data Services Generation output is stored. For example:


```
/Monitor_Home/generation/schemagen/timestamp
```
 - b. Unzip DS_DMS_setup.zip file. The DS_DMS_setup.zip file contains the start and stop scripts for capture server (in the source directory) and the start and stop scripts for apply server (in the target directory).
 - c. Enter `State_to_Datamart_setup_source`. Provide the user ID and password for the data sources and wait until the script finishes.
 - d. Enter `State_to_Datamart_setup_target`. Provide the user ID and password for the data sources and wait until the script finishes.
 - e. Check the following logs for errors:


```
State_to_Datamart_setup_source.bat.log
State_to_Datamart_setup_target.bat.log
```

You can search the logs for keywords to determine if the commands were successful or if they failed. Use the following keywords and phrases to determine success or failure:

Success: Command returned status 0 to the command line.

Failure: ERROR; An error has occurred; Failed to connect to database; An internal error has occurred; An error has occurred while processing file
 - f. Change to the following directory:


```
/Monitor_home/generation/schemagen/timestamp/State_to_Datamart/source
```
 - g. Open a db2cmd window and run the StartCapture_XX.bat file, where XX is the number.

Note: You can stop the replication by running the StopCapture_YY.bat file.

- h. Change to the following directory:


```
/Monitor_home/generation/schemagen/timestamp/State_to_Datamart/target
```


- i. Open a db2cmd window and run the StartApply_YY.bat file, where YY is the number.

Note: You can stop the apply by running the StopApply_XX.bat file.

- j. In the WebSphere Administrative Console, click **Confirm**. A message displays at the top of the panel indicating the step is complete.
 - k. Click **Next**.
11. On the Import DB2 Cube Definition step, you must issue commands using the DB2 command line environment.

- a. Open a DB2 Command Window, and change to the directory where Data Services Generation output is stored. For example:

```
/Monitor_Home/generation/schemagen/timestamp
```

- b. Optional: If this is the first time DB2 Cube Views is being initialized, change to the */ibm/db2/sqllib/misc* directory and format the Data Mart database by typing the following commands:

```
db2 connect to datamart  
db2 -tvf db2mdapi.sql  
db2 disconnect datamart
```

where *datamart* is the name of the Data Mart database.

Note: After completing this command change back to the directory where Data Services Generation output is stored.

- c. Configure DB2 Cube Views by typing the following command:

```
db2mdapiclient -d datamart -u user_ID -p password -i import_model.xml -m model_cv.xml -o import_response.xml
```

where:

datamart is the name of the Data Mart database

user_ID is the user ID for the DB2 administrator

password is the password associated with *user_ID*

- d. In the WebSphere Administrative Console, click **Confirm**. A message displays at the top of the panel indicating the step is complete.
 - e. Click **Next**.
12. On the Manage Alphablox Cube step:

Note: If the step fails, see the related link at the end of this topic for information about troubleshooting.

- a. Specify *host_name* in the **Host name** field. This value represents the host name of the remote server where DB2® Alphablox is installed. For example, `hostname:localhost`.
- b. Specify *port_number* in the **RMI port** field. This value represents the RMI port of the remote server where DB2 Alphablox is installed. The RMI port is listed in the SystemOut.log for WebSphere Portal. For example, `Port number:2810`.
- c. Select one of the following options based on the WebSphere Application Server global security settings for WebSphere Portal:
 - **Disabled:** Select this option if WebSphere Application Server global security is disabled.
 - **Enabled:** Select this option if WebSphere Application Server and Monitor server global security is enabled.
- d. Optional: If global security is enabled, specify *theuser_ID* in the **User ID** field.

- e. Optional: If global security is enabled, specify the *password* in the **Password** field. This value represents the password associated with the ID in the **User ID** field. WebSphere Portal user with administrator authority.
 - f. Verify that the Portal Server is started. If the server is not started, you will get CWMAX4204E error stating that the Manage Alphablox Cube step failed.
 - g. Click **Create** to create the DB2 Alphablox cube. A message displays at the top of the panel indicating the step is complete.
 - h. Click **Next**.
13. On the Configure CEI Distribution step:
- a. Expand **CEI Server Configuration**.
 - b. Specify the *event_group_lists* in the **Event group profile list name** field. This value represents the name of the event group profile list that is associated with this monitor model. The default value is Event groups list.
 - c. Select one of the following options for the Location based on the location of the CEI server:
 - **Local**: Choose this option if the CEI server is in the same cell as the Monitor server.
 - **Remote**: Choose this option if the CEI server is in a different cell than the Monitor server.
 - d. Optional: If the CEI server is remote, specify the *host_name* in the **Host name** field. This value represents the host name for the physical server where the CEI server is configured.
 - e. Optional: If the CEI server is remote, specify the *port_number* in the **RMI port** field. This value represents the RMI port for the physical server where the CEI server is configured. The RMI port is listed in the SystemOut.log for the CEI server.
 - f. Specify the *cell_name* in the **Cell** field. This value indicates the cell name in which the event group profile list resource is configured.
 - g. Optional: If the scope is defined for the node or server level, select *node_name* from the **Nodes** list. This value indicates the node name in which the event group profile list resource is configured.
 - h. Optional: If the scope is defined for the server level, select *server_name* from the **Servers** list. This value indicates the server name in which the event group profile list resource is configured.
 - i. Select one of the following options based on the WebSphere Application Server global security settings for the CEI server:
 - **Disabled**: Select this option if WebSphere Application Server global security is disabled.
 - **Enabled**: Select this option if WebSphere Application Server and Monitor server global security is enabled.
 - j. Optional: If global security is enabled, specify the *user_ID* in the **User ID** field.
 - k. Optional: If global security is enabled, specify the *password* in the **Password** field. This value represents the password associated with the ID in the **User ID** field. WebSphere Application Server user with administrator authority.
 - l. Select one of the following options for the Distribution mode value of the monitor model after the Configure CEI Distribution is complete. The value in the **Current** field indicates the current distribution mode for the model.

- **Inactive:** Choose this option if you do not want the model to receive events on the event queue.
 - **Inactive (event queue recoverable):** Choose this option if you want the model to receive, but not process, events on the event queue.
 - **Active:** Choose this option if you want the model to receive events on the event queue and process the events when started. This is the default option for a new monitor model.
 - **Active (no new MC instances):** Choose this option if you want the model to receive events on the event queue and process the events when started, but you do not want to create any new monitoring context instances.
- m. Click **Apply** to update the CEI server configuration. A message displays at the top of the panel indicating the step is complete and the CEI configuration has been initiated.
 - n. Click **Next**.
14. On the Confirm CEI Server Reboot step:
 - a. Reboot the CEI server.
 - b. Click **Confirm**. If the button is not available, wait for the CEI configuration to finishing processing, refresh the page, and then click **Confirm**.
 15. Click **Finish**.
 16. Click **Save**, and then click **Save** to save all changes to the master configuration.
 17. Log out of the WebSphere Administrative Console.

Testing the WebSphere Business Monitor for SAP scenario

After setting up all components correctly it is possible to test the whole scenario. This can be done by creating a new sales order document in the SAP ERP system – to create a new sales order follow following steps:

To use this procedure, you must have an SAP IDES system installed and you must include the SAPrules.xml file from the SupportPac in the root folder of your CEI with BPC server profile.

Note: Custom SAP systems might require that you use different values in the some of the fields described in the procedure.

Create a new Sales Order.

1. Log on to the SAPGUI.
2. Navigate to the Create Sales Order screen using the **VA01** shortcut.
3. Specify the following values:
 - For **Order Type**, specify **OR**.
 - For **Sales Organization**, specify **1000**.
 - For **Distribution Channel**, specify **10**.
 - For **Division**, specify **00**.
4. Press **Enter** and specify the following values:
 - For **Sold-to party** and **Ship-to party**, specify **1000**.
 - For **PO Number**, specify **Monitor Test Order**.
 - For **Distribution Channel**, specify **10**.
 - For **Material**, specify **P-100**.

- For **Order Quantity**, specify 2.
5. Click **Save** to store the sales order.
 6. Repeat these steps to create another order.

Note: Check the status bar at the bottom of the SAPGUI to see which Sales Order number has been given to the new sales order.


Displaying the business measure in the WebSphere Business Monitor dashboard

You can use the standard portlets shipped with WebSphere Business Monitor to visualize the business measure model included in the SO_MMEAR.ear file. To display the business measures you need to create a dashboard and add portlets to the dashboard.

To create a dashboard and add portlets:


1. Copy of the Instances portlet.

Note: Do not configure the original portlets because the configuration cannot be removed once it is applied.

- a. Click **Administration** at the top of the page, and then select **Portal Management** → **Portlets**
- b. For **Search**, select **Title Contains** and enter Instance in the Search text box.
- c. Click **Search**.
- d. Find the Instances portlet.
- e. On the row containing the Instances portlet, click the icon for **Copy portlet** ()
- f. Rename the copy portlet to My Instances.
- g. Click **OK**.

2. Copy of the Key Performance Indicator portlet.


Note: Do not configure the original portlets because the configuration cannot be removed once it is applied.

- a. Click **Administration** at the top of the page, and then select **Portal Management** → **Portlets**
- b. For **Search**, select **Title Contains** and enter Key Performance Indicator in the Search text box.
- c. Click **Search**.
- d. Find the Instances portlet.
- e. On the row containing the Key Performance Indicator portlet, click the icon for **Copy portlet** ()
- f. Rename the copy portlet to My Key Performance Indicator.
- g. Click **OK**.


3. 1. Copy of the Dimensional portlet.



Note: Do not configure the original portlets because the configuration cannot be removed once it is applied.






- a. Click **Administration** at the top of the page, and then select **Portal Management** → **Portlets**

- b. For **Search**, select **Title Contains** and enter Dimensional in the Search text box.
 - c. Click **Search**.
 - d. Find the Instances portlet.
 - e. On the row containing the Dimensional portlet, click the icon for **Copy portlet** ()
 - f. Rename the copy portlet to My Dimensional.
 - g. Click **OK**.
4. Copy of the Gauge portlet.

Note: Do not configure the original portlets because the configuration cannot be removed once it is applied.

- a. Click **Administration** at the top of the page, and then select **Portal Management** → **Portlets**
 - b. For **Search**, select **Title Contains** and enter Gauge in the Search text box.
 - c. Click **Search**.
 - d. Find the Instances portlet.
 - e. On the row containing the Gauge portlet, click the icon for **Copy portlet** ()
 - f. Rename the copy portlet to My Gauge.
 - g. Click **OK**.
5. Create new pages.
- a. Click **Administration** → **Portal User InterfaceManage Pages**.
 - b. Click **My Portal**, and then click **New Page**.
 - c. In the **Title** field, type WBM_SAP and then select the one column layout.
 - d. Click **OK** and then **OK** again on the successful message page.
 - e. Click **WBM_SAP**, and then click **New Page**.
 - f. In the **Title** field, type Overview and then select the one column layout.
 - g. Click **OK** and then **OK** again on the successful message page.
 - h. Click **New Page**.
 - i. In the **Title** field, type Key Performance Indicators and then select the one column layout.
 - j. Click **OK** and then **OK** again on the successful message page.
 - k. Click **New Page**.
 - l. In the **Title** field, type Dimensions and then select the one column layout.
 - m. Click **OK** and then **OK** again on the successful message page.
6. Add portlets to the pages.

- a. Locate the Overview page and click on the .
- b. Click **Add portlets**. Select **My Instances**, click **OK**, and then click **Done**.
- c. Locate the Key Performance Indicators page and click on the Edit Page icon ()
- d. Click **Add portlets**. Select **My Key Performance Indicator** and **My Gauge**, click **OK**, and then click **Done**.

- e. Locate the Dimensions page and click on the Edit Page icon ().
 - f. Click **Add portlets**. Select **My Dimensional**, click **OK**, and then click **Done**.
 - g. Click **My Portal** to see the WBM_SAP tab.
7. Configure the views.
- a. Click **WBM_SAP** → **Overview**, and then click the Configure icon () for My Instances view.
 - b. For Monitor model, select **SO_MM**, and for Monitoring context, select **SO_MM MC**.
 - c. For Metrics, select **SO_MM Key**, **Currency**, **TotalCountOfChanges**, **NetValue** and **CreationDate**, and then click **Next**, **Next**, **Next** and **Finish**.
 - d. Click **WBM_SAP** → **Key Performance Indicators**, and then click the Configure icon () for My Key Performance Indicators view.
 - e. Select **MaxNetValue**, **MinNetValue**, and **TotalNetValue**, and then click **OK**.
 - f. Click the Configure icon () for My Guage view, select **AverageNetValue**, and then click **OK**.
 - g. Click **WBM_SAP** → **Dimensions**, and then click the Configure icon () for My Dimensional view.
 - h. Select **MaxNetValue**, **MinNetValue**, and **TotalNetValue**, and then click **OK**.
 - i. For Monitor model, select **SO_MM**, and for Cube, select **SO_MM MC CUBE**.
 - j. In Available dimensions, select **Measures**, and then click **Add** next to Column dimensions.
 - k. In Available dimensions, select **Time**, and then click **Add** next to Row dimension.
 - l. Click **Next** and then **OK**
 - m. View the business data using the dashboard.

Troubleshooting the SAP adapter

Using the procedures in this section, you can troubleshoot some common problem you might encounter with the SAP adapter.

For the latest updates to the documentation, see the WebSphere Business Monitor Support Web site (<http://www.ibm.com/support/search.wss?rs=802&tc=SSSRR3&q=6.0.2.1>).

No business events arrive in the WebSphere Business Monitor Server

Verify that the version of WebSphere Integration Developer is consistent with the WebSphere Business Monitor where the model is deployed, for example, use WebSphere Integration Developer v6.0.2.x and WebSphere Business Monitor v6.0.2.x. The Common Base Event definitions generated from WebSphere Integration Developer might not be consistent with the Common Base Events

generated from the WebSphere Process Server if use v6.0.1.x with v6.0.2.x versions together. That inconsistency causes monitoring to fail.

Error: Project WBM_SAPApp is missing required Java project 'websphere_default_messaging_provider'

Problem: This error occurs after using WebSphere Integration Developer problem to import the Project Interchange file.

Solution: Delete the adapter export and recreate it with Enterprise Service Discovery Wizard.

1. In the Java perspective, right-click **WBM_SAPApp**, and select **Properties**.
2. Click **Java Build Path**, and clear **websphere_default_messaging_provider** both on the Order and Export page and the Projects page.
3. Rebuild the project.

Error: Missing the trigger sources

Problem: In some cases, the information about the trigger source is not included when the Project Interchange file is used to import the source code.

Solution: Verify the conversion logic of mapping the business object to the common base event in the XML file.

You must place the SAPrules.xml file from the SupportPac in the root folder of your server's profile.

Tips

In the SAP system, the targeted name events for the connector must end with Connector. When starting the WebSphere Business Integration Adapter, name the connector without Connector. For example: define WBMConnector in the SAP system, and then start the WebSphere Business Integrator Adapter with the WBM name. The WebSphere Business Integration Adapter configuration sets the name to WBMConnector

The conversion logic must be in the same module as the code to export the adapter. Creating a Service Component Architecture reference to another module results in problems with the org.eclipse.emf.ecore.xml.type.impl.AnyTypeImpl class that cannot be resolved. When defining interface maps, use Web Services Description Language (WSDL) interfaces as source and target interfaces. You cannot mix WSDL and Java interfaces.