BMC Subsystem Optimizer for zEnterprise
Version 2.0.00
December 4, 2015
Subzero now lets you run IBM DB2 batch jobs on remote LPARs

BMC is announcing a new feature in the BMC Subsystem Optimizer for zEnterprise product.

Overview of the enhancement

This enhancement allows you to run batch jobs on one IBM z/OS LPAR (local LPAR) and access an IBM DB2 subsystem on another LPAR (remote LPAR) within the same Sysplex. You can also run the DB2 job steps on the same remote LPAR, which reduces latency for very large data requests.

For instructions on how to setup APPLICATION RESTART CONTROL for DB2 to support this feature, see “Setting up the batch job feature” on page 3.

The enhancement requires that you have the BMC APPLICATION RESTART CONTROL (AR/CTL) product and the MainView Batch Optimizer - Advanced product installed. (For example, you use the AR/CTL interface to configure, start, and stop redirecting the batch operations.) Your Subzero version 2.0.00 license permits you to use these additional products with Subzero; BMC will provide the required license keys.

Note

BMC Subsystem Optimizer for DB2 Restriction: The BMC APPLICATION RESTART CONTROL for DB2 product and the MainView Batch Optimizer product that are shipped with the BMC Subsystem Optimizer for DB2 (Subzero for DB2) License may only be used to manage, update and access DB2 data as part of a Subzero for DB2 implementation, unless Customer has separately licensed the BMC APPLICATION RESTART CONTROL for DB2 product and the MainView Batch Optimizer product. Customer may not use the functionality of such Products for any other purpose.

AR/CTL enables you to write SQL statements and let AR/CTL manage the connection to DB2 using the Call Attachment Facility (CAF) or the Resource Recovery Services attachment facility (RRSAF). In this enhancement, Subzero
enables you to run the statements as batch jobs on a local LPAR and access the DB2 subsystem on a remote LPAR within the same Sysplex. For more details, see “Enabling a batch job to communicate with DB2 using the batch attachment only facility” on page 12.

This enhancement also incorporates a few additional fixes and general improvements.

## Obtaining the new features

To obtain these new features, you must install the APPLICATION RESTART CONTROL and MainView Batch Optimizer-Advanced products, then apply PTFs for MainView Batch Optimizer - Advanced and Subzero.

Use the following procedure to obtain the enhancement:

1. If you do not already have AR/CTL (version 4.1.00 or later) and MainView Batch Optimizer - Advanced (version 2.7.00 or later) installed, complete this step:
   a. Obtain the license keys for AR/CTL and MainView Batch Optimizer - Advanced.
   b. Install AR/CTL and MainView Batch Optimizer - Advanced.

2. Apply the following PTFs:

<table>
<thead>
<tr>
<th>Product</th>
<th>PTF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subzero</td>
<td>BPJ1253 (Subzero version 2.0.00 maintenance bundle 2)</td>
</tr>
<tr>
<td>MainView Batch Optimizer - Advanced</td>
<td>BPB1422</td>
</tr>
<tr>
<td></td>
<td>BPB1431</td>
</tr>
<tr>
<td></td>
<td>BPB1432</td>
</tr>
</tbody>
</table>

3. Follow the instructions in the remainder of this notice to prepare the batch feature for use.

   BMC recommends using BMC Internet Service Retrieval (ISR) to obtain PTFs. For information about ISR, see the maintenance information in the *Installation System Reference Manual*.

   You can also obtain PTFs from eFix PTF Distribution Services (eFix). You can access eFix directly at [http://efix.bmc.com](http://efix.bmc.com) or from the support site. For information about eFix, see the online Help.
**Setting up the batch job feature**

To use the batch enhancement, you need to prepare **AR/CTL for DB2**, **MainView Batch Optimizer**, and configure **Subzero** by using the **DB2 Product Configuration (LGC)** common component to work with the new feature. The following table summarizes the setup tasks, which you can complete in the order shown.

**Note**
Before proceeding, ensure that you have installed products and applied PTFs as explained in “Obtaining the new features” on page 2

### Table 1: Summary of setup tasks

<table>
<thead>
<tr>
<th>In this product or component</th>
<th>Complete these tasks</th>
<th>Using these instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MainView Batch Optimizer</strong></td>
<td>Create a new job policy in the control data set, add the DIRECT action to the policy’s global options, and activate the policy.</td>
<td>“Adding the DIRECT command to a job policy definition” on page 4 “Activating a job policy in Job Optimizer” on page 5</td>
</tr>
<tr>
<td></td>
<td>Add the DIRECT JTL statement for each job that you want to execute on a remote subsystem.</td>
<td>“Adding the DIRECT JTL statement” on page 5</td>
</tr>
<tr>
<td></td>
<td>Edit the MainView Batch Optimizer Subsystem commands member to activate the Subzero for DB2 interface at startup.</td>
<td>“Activating the Subzero for DB2 interface” on page 6</td>
</tr>
<tr>
<td><strong>LGC</strong></td>
<td>Configure the redirection information for the DB2 client and target subsystems.</td>
<td>“Setting Subzero configuration options in LGC” on page 6 “Overview of Subzero configuration options in the LGC” on page 8</td>
</tr>
<tr>
<td><strong>AR/CTL for DB2</strong></td>
<td>Edit the AR/CTL BCSS started task.</td>
<td>“Editing the AR/CTL BCSS started task” on page 9</td>
</tr>
<tr>
<td></td>
<td>Add the AR/CTL program registration record and update with record key values.</td>
<td>“Creating a program registration record” on page 10</td>
</tr>
<tr>
<td></td>
<td>Add the Subzero DB2 program registration record and update with record key values.</td>
<td>“Creating a Subzero DB2 program registration record” on page 11</td>
</tr>
<tr>
<td></td>
<td>Add the Subzero load library DSN to the non IMS environment record.</td>
<td>“Creating an environment registration record” on page 11</td>
</tr>
</tbody>
</table>
Setting up MainView Batch Optimizer

This topic explains how to set up MainView Batch Optimizer to support the Subzero for DB2 batch job feature.

Adding the DIRECT command to a job policy definition

Use the following procedure to add the DIRECT command to the policy definition for each job that you want to redirect in the control data set.

**Note**
The default job policy member is JOBPOL00.

To add the DIRECT command to a job policy definition

1. Access the MainView Batch Optimizer user interface REXX EXEC member BSSBISPf.
2. At the product logo panel, press **Enter**.
3. On the Objects List panel, type **E** (Edit) in the action entry field to the left of the job policy that you want to edit, and press **Enter**.
   The Job Optimization Policy panel displays the selected policy's information and selection criteria.
4. Type **E** (Edit) next to <New> in the Selection Criteria list and press **Enter**.
5. In the Job Policy Definition panel, specify **DIRECT** in the **Action** field.
   **Figure 1: Example Job Optimizer Policy Definition**
   
<table>
<thead>
<tr>
<th>Command ====&gt;</th>
<th>Job Policy Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job policy name</td>
<td>JOBPOLxx</td>
</tr>
<tr>
<td>Selection comment</td>
<td>SUBZERO DIRECT</td>
</tr>
<tr>
<td>New definition will be inserted at top of list.</td>
<td></td>
</tr>
<tr>
<td>Selection Criterion</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Cond</td>
</tr>
<tr>
<td>JOBNAME_ + EQ + JSUBZERO_</td>
<td></td>
</tr>
<tr>
<td>General Options</td>
<td>Value</td>
</tr>
<tr>
<td>Action</td>
<td>DIRECT_</td>
</tr>
<tr>
<td>Readjtl</td>
<td></td>
</tr>
<tr>
<td>Pipe wait percent</td>
<td>0-99</td>
</tr>
<tr>
<td>Maximum concurrent steps</td>
<td>1-255</td>
</tr>
<tr>
<td>Split conditional steps</td>
<td>Y=Yes N=No</td>
</tr>
<tr>
<td>Transport mechanism</td>
<td>SRP JOP AUTO</td>
</tr>
<tr>
<td>Split tape steps</td>
<td>Y=Yes N=No</td>
</tr>
<tr>
<td>SMFrecord type</td>
<td>0, 128-255</td>
</tr>
</tbody>
</table>
6. Press **F3** and select option **1** to save your changes and exit.
For more information, see the topic about accessing the user interface in the *MainView Batch Optimizer Job Optimizer Reference Manual*.

**Activating a job policy in Job Optimizer**

The job policy becomes active when you start the MainView Batch Optimizer Subsystem on the images in the BatchPlex.

Your site's initial job policy was created during the MainView Batch Optimizer customization process. The name of the job policy is defined within the BatchPlex definition. For a new job policy, you must activate the policy on each MVS image in the BatchPlex.

**Note**

If you created a new policy, or edited an existing policy to include the new DIRECT keyword, you cannot activate the policy on a previous maintenance level of MainView Batch Optimizer.

**To activate a job policy**

1. Enter the following command:

   ```
   mbos BSL POLICY ACTIVATE policyName
   ```

   *mbos* is the subsystem ID of the MainView Batch Optimizer Subsystem that is active on the MVS image.

   *policyName* is the name of an existing job policy definition in the control data set. Omitting *policyName* reactivates the currently active job policy.

**Adding the DIRECT JTL statement**

Use the following procedure to add the DIRECT JTL statement.

1. Add the following JTL statement immediately after a job in the MainView Batch Optimizer JCL:

   ```
   //*BSLCNTL DIRECT
   ```

   For more information about JTL statements, see the *MainView Batch Optimizer Job Optimizer Reference Manual*.
Activating the Subzero for DB2 interface

Use the following procedure to activate the Subzero interface in MainView Batch Optimizer each time that MainView Batch Optimizer starts.

To activate the Subzero for DB2 interface at startup

1. In the Subsystem commands member BCSCMDxx member for MainView Batch Optimizer, add the following command:

   \texttt{mbos BSL SUBZERO ENABLE [IGNORE|WARN|FAIL]}

2. (optional) Define the following additional keywords if you want to specify how MainView Batch Optimizer should react if a step fails to split:

   - **IGNORE** (the default) allows the step to execute without issuing an informational message or user abend.
   - **WARN** issues a warning message indicating that the target system is unavailable.
   - **FAIL** issues an informational message explaining why the step failed to split.

\textbf{Note}

You can also use the following keywords with the Subzero command:

- **DISABLE** disables interfacing with Subzero.
- **STATUS** shows whether interfacing with Subzero is enabled or disabled.

Setting up LGC

This topic explains how to set options in the DB2 Product Configuration (LGC) component to support the Subzero for DB2 batch job feature.

Setting Subzero configuration options in LGC

Use the following procedure to specify how Subzero should redirect subsystem access requests from a client to a target.

Additional guidelines are as follows:

- LGC creates XML-based option sets to contain your Subzero configuration values. For a description of each option that you can set, see “Overview of Subzero configuration options in the LGC” on page 8.
You can change Subzero configuration values while Subzero is active. The new values do not become effective until you reload the configuration in Step 7 on page 8.

The DB2 Component Services (DBC) must be running on the LPAR that you designate as a new client or target LPAR. If the IBM CICS product started before DBC on a new client LPAR, you must restart CICS.

For more information about setting values in LGC, see the *BMC Infrastructure Components Administration Guide*.

**To set Subzero configuration values**

1. Execute the LGCISPF CLIST (located in the product SAMP data set).

   The default location for LGCISPF is in *userLibHLQ.UXXSAMP* or *HLQ.BMCSAMP*.

2. From the DB2 Product Configuration Main Menu, select **Manage Product Options**.

3. From the Product Option Sets panel, place your cursor on the plus sign (+) to the left of **BMC Subsystem Optimizer for zEnterprise**, and take one of the following actions:

   - To create a new Subzero option set for this product, enter **I** and then enter redirection values.
   - To work with an existing Subzero option set, press **Enter**, put your cursor on the plus sign (+) to the left of that option set name, and take one of the following actions:
     - Enter **E** to edit the values in the option set.
     - Enter **C** to create a new option set that contains values copied from this option set.

     **Tip**

     Entering **B** allows you to browse (view) the values in the option set.

4. On the option set panel, select an option group, and take one of the following actions:

   - Enter **I** next to an option name to create an option set, and enter valid values in the editable fields. (This action is not valid for **General Options**.)
   - Enter **C** next to an option name to copy that option set, and type over the displayed values to change them. (This action is not valid for **General Options**.)
5 When ready to save your changes, press F3 (the END command).

6 If you created a new option in Step 3 on page 7, specify the option's name and description in the Create New Option Set window, and press Enter.

For the name, use the DBC group name that is associated with this configuration.

7 Activate the new or changed option set by entering the following command on the system console:

```
/dbc BRD,CONFIG,RELOAD
```

In this command, `dbc` is the subsystem ID of the DBC address space.

8 If you configured a new client LPAR and CICS started before the DBC on that LPAR, restart CICS.

### Overview of Subzero configuration options in the LGC

This topic describes the Subzero configuration options that tell Subzero how to redirect subsystem access requests.

**Note**

In `clientLPAR` and `targetLPAR` fields, you can specify an asterisk (*) wildcard character in the value to make it generic:

- Specify * to match any system ID.
- Specify a character string followed by * to match any system ID that begins with that string. For example, specify SYS* to match SYSA, SYSB, SYS1, and so on.

<table>
<thead>
<tr>
<th>Section</th>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Options</td>
<td>XCFGROUP</td>
<td>Specify the name of the XCF group that Subzero will use to process redirected requests. Contact your IBM z/OS system administrator to assign a group name for Subzero or help you choose one. No other XCF software running in the sysplex can use this name. <strong>Note</strong>: No z/OS system changes are required for Subzero to use this name.</td>
</tr>
<tr>
<td>Section</td>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| DB2 SSIDs/Groups to Redirect | `originalSSID on clientLPAR will redirect to targetSSID on targetLPAR` | This option defines how Subzero should redirect requests between specified DB2 subsystems. You can insert or copy as many options of this type as needed. This option contains the following fields:  
  - At `originalSSID`, specify the subsystem ID of the original DB2 subsystem to which applications send subsystem access requests. You can specify an individual DB2 subsystem ID or a DB2 group ID.  
  - At `clientLPAR`, specify the system ID of the LPAR that is running the application programs.  
  - At `targetSSID`, specify the subsystem ID of the "real" (destination) DB2 subsystem that will receive and process redirected subsystem access requests. You can specify an individual DB2 subsystem ID or a DB2 group ID.  
  - At `targetLPAR`, specify the system ID of the LPAR that is running the real DB2 subsystem.  
  Tip: You can expand this option to display a Notes field, which you can use to enter comments or other reminders. The value is optional and has no default. |

### Setting up AR/CTL

This topic explains how to set up AR/CTL for DB2 to support the Subzero for DB2 batch job feature.

#### Editing the AR/CTL BCSS started task

Use the following procedure to edit the AR/CTL BMC Consolidated Subsystem (BCSS) started task.

For more information about the BCSS, see the *APPLICATION RESTART CONTROL Administrator Guide*.

**To edit the started task**

1. Use the `$Q03APFJ` job to add the AR/CTL version 4.1.00 product load library and Subzero version 2.0.00 product load library to an APF-authorized load library.
This job is created as part of the Application Enhancement Series Install System (AESIS) application. AESIS creates customized batch jobs that complete the installation and customization process of the AR/CTL products. For more information, see the configuration chapter of the

*APPLICATION RESTART CONTROL Customization Guide*

2 Add the APF-authorized load library, containing the AR/CTL and Subzero load libraries, to the BCSS STEPLIB DD.

3 Verify that the required passwords are available in the password data set.

   You require AR/CTL *for DB2* and Subzero *for DB2* licenses.

4 Issue the following command (where `bcssid` is the subsystem identifier) to reinitialize the BCSS:

    `bcssid REINIT AES`

5 Check the system log to ensure that the REINIT command completed successfully.

   The BCSS responds with messages indicating that it has initialized the AR/CTL components, and status messages.

### Creating a program registration record

Use this procedure to set up AR/CTL to participate in application program execution without JCL changes. You will create one or more program registration records in the REGISET.

For more information, see the *APPLICATION RESTART CONTROL Administrator Guide*.

**To create a program registration record**

1 Access the Application Enhancement Series primary menu, and select option 1 (AES records).

2 On the Application Enhancement Series Records panel, select option 3 (Non IMS Program manual registration).

3 On the Limit List of Records panel, type or verify asterisks in all fields, and press Enter.

4 On the List Records panel, enter the **ADD** command.
On the Add Record panel, type the qualifiers to use in the record key, type the requested information (if applicable), and press Enter to validate the information.

Enter the END command to save the record and exit from the panel.

**Creating a Subzero DB2 program registration record**

Use the following procedure to create a Subzero DB2 program registration record.

1. Access the Application Enhancement Series primary menu, and select option 1 (AES records).

2. On the Application Enhancement Series Records panel, select option 11 (Subzero DB2 program registration).

3. On the Limit List of Records panel, type or verify asterisks in all fields, and press Enter.

4. On the List Records panel, enter the ADD command.

5. On the Add Record panel, type the qualifiers to use in the record key, type the requested information (if applicable), and press Enter to validate the information.

6. Enter the END command to save the record and exit from the panel.

**Creating an environment registration record**

To provide access to AR/CTL execution modules and services, you must create one or more non IMS environment registration records in the REGISET.

A non IMS environment is any environment where IMS is not active or where application programs that execute in the environment do not use IMS type calls and structures.

*Note*

For more information about this task, see the *APPLICATION RESTART CONTROL Administrator Guide*.

**To create an environment registration record**

1. Access the Application Enhancement Series primary menu, and select option 1 (AES records).
2 On the Application Enhancement Series Records panel, select option 2 (Non IMS Environment registration).

3 On the Limit List of Records panel, type or verify asterisks in all fields, and press Enter.

4 On the List Records panel, enter the ADD command.

5 On the Add Record panel, type the qualifiers to use in the record key, type the requested information (if applicable), and press Enter to validate the information.

6 Enter the END command to save the record and exit from the panel.

**Deactivating Subzero redirection in an AR/CTL step**

You can stop batch job redirection from AR/CTL.

1 Enter the following DD statement:

```//AESSZ$2N DD DUMMY```

**Enabling a batch job to communicate with DB2 using the batch attachment only facility**

Use the following procedure to setup this feature.

1 In the Subzero load library, make the following changes:

   a Copy module DSNARRS from the DB2 DSNLOAD library to module DSNARA00 in the Subzero load library.

   b Copy module BRDARRS to module DSNARRS.

   c Copy module DSNACAF from the DB2 DSNLOAD library to module DSNACA00 in the Subzero load library.

   d Copy module BRDACAF to module DSNACAF.

2 Insert the Subzero load library into the JOBLIB or STEPLIB of the batch job before the DSNLOAD library.
Where to get the latest product information

To view the latest BMC documents, see the Support Central website at http://www.bmc.com/support.

Notices such as flashes, technical bulletins, and release notes are available on the website. You can subscribe to proactive alerts to receive e-mail messages when notices are issued or updated. For more information about proactive alerts, see the Support Central website.