BMC Application Accelerator for IMS™
User Guide

Supporting

Version 1.1 of BMC Application Accelerator for IMS

January 2014
Contacting BMC Software

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- Read overviews about support services and programs that BMC offers
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- Search a database for issues similar to yours and possible solutions
- Order or download product documentation
- Download products and maintenance
- Report an issue or ask a question
- Subscribe to receive proactive e-mail alerts when new product notices are released
- Find worldwide BMC support center locations and contact information, including e-mail addresses, fax numbers, and telephone numbers

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Before contacting BMC

Have the following information available so that Customer Support can begin working on your issue immediately:

- Product information
  - Product name
  - Product version (release number)
  - License number and password (trial or permanent)
- Operating system and environment information
  - Machine type
  - Operating system type, version, and service pack or other maintenance level such as PUT or PTF
  - System hardware configuration
  - Serial numbers
  - Related software (database, application, and communication) including type, version, and service pack or maintenance level
- Sequence of events leading to the issue
- Commands and options that you used
- Messages received (and the time and date that you received them)
  - Product error messages
  - Messages from the operating system, such as file system full
  - Messages from related software
License key and password information

If you have questions about your license key or password, use one of the following methods to get assistance:

- Send an e-mail message to customer_support@bmc.com.
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About this book

This book contains detailed information about the BMC Application Accelerator product for the IBM® IMS™ environment. This book is intended for:

- IMS system administrators
- IMS database administrators (DBAs)
- MS application developers
- IBM z/OS® systems programmers
- z/OS operations teams

Like most BMC documentation, this book is available in printed and online formats. To request printed books or to view online books and notices (such as release notes and technical bulletins), see the support website at http://www.bmc.com/support.

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The software also offers online Help. To access Help, press F1 within any product or click the **Help** button in graphical user interfaces (GUIs).

Related publications

From the BMC Support Central website (http://www.bmc.com/support), you can

- download a zipped set of documentation PDFs from each product’s EPD page
- link to the BMC Documentation Center (https://webapps.bmc.com/infocenter/index.jsp) to browse documentation sets, or to view video demos (short overviews of selected product concepts, tasks, or features)
- view individual product documents (books and notices) within the “A – Z Supported Product List”
You can order hardcopy documentation from your BMC sales representative or from the support site. You can also subscribe to proactive alerts to receive e-mail messages when notices are issued.

**Conventions**

This book uses the following special conventions:

- All syntax, operating system terms, and literal examples are presented in this typeface.
- Variable text in path names, system messages, or syntax is displayed in *italic* text:

  `testsystest/instance/fileName`

- The symbol `=>` connects items in a menu sequence. For example, **Actions => Create Test** instructs you to select the **Create Test** command from the **Actions** menu.

**Syntax statements**

The following example shows a sample syntax statement:

```
COMMAND KEYWORD1 [KEYWORD2 | KEYWORD3] KEYWORD4={YES | NO} fileName...
```

The following table explains conventions for syntax statements and provides examples:

<table>
<thead>
<tr>
<th>Item</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items in <em>italic</em> type represent variables that you must replace with a name or value. If a variable is represented by two or more words, initial capitals distinguish the second and subsequent words.</td>
<td><code>alias</code></td>
</tr>
<tr>
<td></td>
<td><code>databaseDirectory</code></td>
</tr>
<tr>
<td></td>
<td><code>serverHostName</code></td>
</tr>
<tr>
<td>Brackets indicate a group of optional items. Do not type the brackets when you enter the option. A comma means that you can choose one or more of the listed options. You must use a comma to separate the options if you choose more than one option.</td>
<td><code>[tableName, columnName, field]</code></td>
</tr>
<tr>
<td>Item</td>
<td>Example</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Braces indicate that at least one of the enclosed items is required. Do not type the braces when you enter the item.</td>
<td>`{DBDName</td>
</tr>
<tr>
<td></td>
<td>`UNLOAD device={disk</td>
</tr>
<tr>
<td>A vertical bar means that you can choose only one of the listed items. In the example, you would choose either <code>commit</code> or <code>cancel</code>.</td>
<td>`{commit</td>
</tr>
<tr>
<td>An ellipsis indicates that you can repeat the previous item or items as many times as necessary.</td>
<td><code>columnName . . .</code></td>
</tr>
</tbody>
</table>
Overview of Application Accelerator

The following topics introduce the BMC Application Accelerator for IMS product:

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NOTE
For more information, view the Quick Course Application Accelerator for IMS - Getting Started. You must have a BMC Support ID to view the Quick Course.

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What Application Accelerator does

By improving the performance and efficiency of job steps in IMS batch applications, Application Accelerator can significantly reduce:

- CPU usage
- I/O activity
- Application processing time
- Time required for tuning job steps
Based on established policies or JCL specifications, Application Accelerator interacts with eligible job steps as follows:

- Monitors applications to analyze the characteristics and behavior of individual job steps for the number of executions that you designate

- Optimizes applications by using BMC proprietary access methods and modifying runtime attributes, based on observed past behavior

After observing real-world characteristics of each application job step, Application Accelerator automatically chooses techniques that are best suited for that step.

Without Application Accelerator, BMC access methods are unavailable to many job steps, regardless of the tuning efforts that analysts or programmers might attempt. Manual tuning results can suffer from a lack of real-world information or from generic, one-size-fits-all specifications. Also, as conditions change over time, tuning might become less effective than when first implemented.

In contrast, with Application Accelerator, tuning yields superior results, benefiting from BMC custom I/O techniques and the step’s observed on-going behavior over time.

### Summary of Application Accelerator workflow

Application Accelerator operates while an application’s job steps are executing. For each eligible step, Application Accelerator completes the following basic workflow:

1. **Initialize operations in the job step:**
   
   A. Gain control.
   
   B. Determine the type of processing to perform.
   
   C. Set up and access required resources.

   **NOTE**
   
   You can specify that Application Accelerator ignore specific jobs and steps or exclude specific jobs.
2. Monitor the job step for a designated (user-defined) number of executions.

Application Accelerator collects the following types of information about the job step and stores the data in a repository:

- Types, patterns, and number of DL/I calls that the step issues
- I/O statistics
- Patterns of usage for various buffer subpools

3. Optimize the monitored step.

After the designated number of executions, Application Accelerator analyzes the repository data and modifies the runtime attributes for the job step as needed. For example, depending on the application type, the following modifications might be made:

- Intercept IMS get-type calls for BMP, DLI, and DBB applications, and perform these calls with a more efficient set of I/O routines.
- Optimize DFSVSAMP buffer pools for DLI and DBB applications.
- Enable OSAM sequential buffering for DLI and DBB applications that mainly access databases sequentially.

NOTE
While optimizing the job step, Application Accelerator also monitors the step to collect information that can help refine the attribute values for the next execution. In addition, the product collects information about the effects of optimizing activities.

Trial and production modes

You can run Application Accelerator in trial mode or production mode:

- Trial mode is useful for initially evaluating Application Accelerator or quickly testing a new version of the product.
- Production mode is suitable for deploying the product in your production environment, and for testing the product against a large number of applications.
Overview of trial mode

Trial mode is a fast, simple way to implement Application Accelerator. Trial mode lets you start quickly, without requiring a system programmer to install and manage production-mode components.

Trial-mode repository

You must allocate a trial-mode repository. This VSAM data set contains product setup and control information and the data that the product collects during execution.

You specify setup and control information by using a batch utility to initialize or update option values in the repository. Options include, for example, the action that Application Accelerator should perform on behalf of the job step, and how to allocate temporary data sets for Application Accelerator.

Although the repository is easy to allocate when evaluating and testing the product, the following disadvantages make the trial-mode repository unsuitable for large-scale production use:

- You must identify the trial-mode repository in the JCL to execute a batch application job step.
- You must set up your own procedures for backing up the repository data.
- This repository supports simultaneous updates within a single z/OS image but does not support simultaneous updates across multiple z/OS systems.
- Repository data is limited to 4 gigabytes. Because Application Accelerator data requirements are limited, this concern is minor during testing but could be problematic during production use.

Application JCL changes in trial mode

You must modify the JCL for executing an IMS batch application job to identify the following items:

- Library that contains the executable load modules for the product
- Trial-mode repository, using the $IBO$VSM DD statement
- Other data sets as applicable
APF authorization in trial mode

You must provide a way for Application Accelerator to execute in an APF-authorized environment. You can use any valid authorization technique, including the following alternatives:

- You can authorize all data sets in the STEPLIB or JOBLIB concatenation.
- You can use a standard BMC started task, such as the Cross Product Connectivity (CPC) subsystem or the Database Utilities subsystem (DBUSS), to provide authorization.

Overview of production mode

Production mode is a robust way to implement Application Accelerator without making application JCL changes. This technique is suitable to use if you are deploying Application Accelerator in a production environment, or if you want to test the power and ease of using the product for a large number of applications.

CPC subsystem

In production mode, Application Accelerator works with the following BMC subsystems and servers:

- Cross Product Connectivity (CPC) subsystem, which is also known as the BMC Consolidated Subsystem (BCSS)
- BMC Primary Subsystem (BMCP)
- Advisor (ADV) server
- User Interface Middleware (UIM) server

Application Accelerator uses these subsystems and servers to:

- Screen IMS batch application jobs and steps
- Manage product setup and control information and the data that the product collects during execution
- Perform APF-authorized functions
The CPC subsystem is shared with other BMC products in the same environment, such as:

- MAXM Database Advisor for IMS
- MAXM Reorg solutions
- Backup and Recovery Solution for IMS

**NOTE**

If the JCL of an IMS batch application job step contains a DD statement identifying a trial-mode repository, the CPC subsystem does not participate in the job step.

## Database Management Console

In production mode, you can use the BMC Database Management Console (a graphical user interface, or GUI) to set up and control Application Accelerator and view reports. If you choose not to use the console, you can use a batch utility, instead.

The console runs on a client workstation under the Microsoft Windows operating system. The console communicates with the UIM server through TCP/IP technology.

### CPC repositories

The first time that the CPC subsystem starts after Application Accelerator is installed, the subsystem allocates and initializes a set of CPC repositories. These repositories contain product setup and control information and the data that the product collects during execution.

Setup and control information includes default and site values for defining how Application Accelerator operates in your environment, and policies for defining how Application Accelerator interacts with your applications.

Using CPC repositories offers the following advantages:

- You do not need to identify the repositories in the JCL for executing the application job step. The CPC subsystem provides access to the repositories.
- You can use CPC procedures to automate backups of the repository data.
- CPC repositories support simultaneous updates across multiple z/OS systems.
- CPC repositories can accommodate very large amounts of data because the physical data is broken up into multiple data sets.
SAFE definitions

You can set up system authorization facility (SAF) definitions to secure and permit access to product resources.

Installation and maintenance

You install and maintain Application Accelerator libraries by using the BMC standard Installation System for mainframe products. Other product components require little maintenance.

Installation System

You use the Installation System to install the Application Accelerator product modules. After prompting you for required values, the Installation System creates JCL that you can execute to prepare SMP/E zones.

To enable Application Accelerator execution on a specific CPU, you must use the Installation System to install an authorization password from BMC. The three-character product code that you use to install Application Accelerator passwords is IBO.

Periodically, BMC distributes updates for Application Accelerator product modules in the form of PTFs. You use the Installation System to apply PTFs to your SMP/E zones.

For more information about these topics, see the Installation System User Guide. Also, for specific information about installing Application Accelerator (including relevant FMIDs), see the BMC Application Accelerator for IMS Release Notes.
Component maintenance

Application Accelerator trial-mode components typically need no maintenance during a brief trial period. If you use the product in trial mode for an extended amount of time, the trial-mode repository might need the periodic maintenance and backups that you would perform for any VSAM data set.

In production mode, Application Accelerator product components are mostly self-maintaining:

- When the console on individual user systems should be updated, the console automatically detects that need and performs the update automatically. User intervention is seldom required.

- The volume of Application Accelerator data in the CPC repositories is typically small. However, you can set up a job to perform an automatic purge of aged data.

- You can automate CPC repository backups by setting parameters and a schedule in the console.

- Ongoing operation of the CPC subsystem and its affiliated started tasks is managed in the same way that you manage other started tasks in the z/OS environment.

For more information about maintaining production-mode components, see the Database Products for IMS Configuration Guide.

Requirements and considerations

The following requirements and considerations apply to Application Accelerator.

System and software requirements

The following system and software requirements apply to Application Accelerator. For requirements related to the CPC subsystem and other related components, see the Installation System User Guide.

Table 1  Requirements for Application Accelerator (part 1 of 2)

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Any version of IBM z/OS that IBM supports</td>
</tr>
<tr>
<td>IMS</td>
<td>IMS Version 11 or later</td>
</tr>
</tbody>
</table>
Supported application types

Application Accelerator supports applications that issue IMS Data Language/I (DL/I) calls in the following types of IMS regions:

- BMP
- DLI
- DBB

**NOTE**

For Application Accelerator to participate in a BMP job, the submitting user ID of that job must have the authority to access various IMS subsystem data sets (such as the RECONs, MODSTAT, and ACBLIBs) and IMS database data sets. To enable this access, you can define a resource rule that provides the required access. For more information, see the BMC Database Products for IMS Configuration Guide.

Additional considerations for product interactions

Application Accelerator works with other BMC products that operate during execution of IMS batch applications, including:

- APPLICATION RESTART CONTROL for IMS
- MainView Batch Optimizer

To ensure that the products work together correctly and that required maintenance is applied, see the release notes for Application Accelerator and the other products.
Information and support

When using Application Accelerator, you can access the following resources for additional information or assistance:

- Application Accelerator provides context-sensitive online Help in the Database Management Console. The topics in the Help system provide:
  - Procedural information for completing product tasks
  - Conceptual information to support you while you are using the console
  - Complete reference information for all panels and fields

  You can access Help topics by clicking the Help button in the interface.

- Application Accelerator can issue error, warning, and informational messages during execution of your IMS batch applications. These messages can appear in the application log. The CPC subsystem and affiliated subsystems and servers can issue messages to your system console. For help with these messages, see the message topics in the BMC Documentation Center. The Documentation Center is available from BMC Support Central at www.bmc.com/support. A stand-alone version is also available and does not require Internet access.

- BMC backs its products with outstanding customer support. You can speak directly with an on-call support specialist who has years of experience with IMS. You can e-mail Customer Support, or you can obtain technical support on the Customer Support web page or by telephone 24 hours a day, 7 days a week.
Using Application Accelerator in trial mode

The following topics provide instructions for implementing and using the BMC Application Accelerator for IMS product in trial mode:

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Workflow summary for trial mode

You must complete the following basic tasks to use Application Accelerator in trial mode:

1. Allocate the trial-mode repository, and initialize it with default values.

   The trial-mode repository is a VSAM key-sequenced data set (KSDS). Application Accelerator uses the repository to store setup and control information, and data about monitored job steps.

   You can use the IBOINIT batch program to specify the default values that control how Application Accelerator operates in your environment and interacts with your applications. For example, you can use default values to:

   - Set the minimum number of application executions that Application Accelerator must monitor before optimizing
   - Specify how to allocate temporary data sets for Application Accelerator
During initialization, the product obtains the default values from the repository. While the application is executing, the product captures relevant information about the characteristics of the run-time environment and stores that data in the repository.

For more information, see “Allocating and initializing the trial-mode repository” on page 23.

2. Modify the JCL for executing the application.

In this step, you identify where the Application Accelerator load modules, trial-mode repository, and other relevant data sets reside.

In trial mode, Application Accelerator automatically initializes in every job step in which the Application Accelerator load modules are present. Typically, you will add the required product libraries to the STEPLIB concatenation in the job step JCL.

To identify the trial-mode repository to the job step, you add the $IBO$VSM DD statement to the job step JCL. BMC recommends that you also add DD statements for trace data sets.

If the load library is present for a job step that Application Accelerator should not process, you must include the IBOIGNOR DD DUMMY statement in the JCL for that step.

For more information, see “Modifying application JCL in trial mode” on page 25.

3. Provide an APF-authorized environment for Application Accelerator operations.

During application execution, Application Accelerator performs certain tasks that require APF authorization.

For more information, see “Providing APF authorization in trial mode” on page 27.

4. Execute your application jobs, and evaluate the results of using Application Accelerator.

To identify and analyze the effects of Application Accelerator activities on your application executions, you can manually compare statistics from the same job step, executed with and without the product.

5. If needed, troubleshoot problems.

For more information, see “Troubleshooting problems in trial mode” on page 29.
Allocating and initializing the trial-mode repository

You must allocate and initialize the trial-mode repository by creating a job that:

■ Executes the IDCAMS utility to define a VSAM cluster to contain the repository

■ Executes the IBOINIT utility to initialize the repository with default values that tell Application Accelerator how to interact with eligible batch application jobs and steps

In the Application Accelerator sample library, member IBOVINIT contains a job to perform these tasks. The following example JCL includes the significant statements from this member, but omits the explanatory comments:

```jcl
//IBOVINIT  JOB ...
//*
//ALLOCATE  EXEC  PGM=IDCAMS
//SYSPRINT DD SYSOUT=*  
//SYSIN DD * 
DELETE BMCIBO.TRIAL.$IBO$VSM CLUSTER PURGE
DEFINE CLUSTER(NAME(BMCIBO.TRIAL.$IBO$VSM) -  
INDEXED KEYS(62 6) SHAREOPTIONS (3,3) VOLUMES( DEV080 ) -  
CYL(1 1) RECORDSIZE(2000 8185) NOREUSE -  
CISZ(8192) FREESPACE(70 20) UNORDERED ) -  
DATA(NAME(BMCIBO.TRIAL.$IBO$VSM.DATA)) -  
INDEX(NAME(BMCIBO.TRIAL.$IBO$VSM.INDEX))
//*
//INIT  EXEC  PGM=IBOINIT
//STEPLIB DD DISP=SHR,DSN=&hlq.LOAD
//$IBO$VSM DD DISP=SHR,DSN=BMCIBO.TRIAL.$IBO$VSM
//SYSUDUMP DD SYSOUT=* 
//IBOTRACE DD SYSOUT=* 
//BMCPRTDD DD SYSOUT=* 
//BMCRTYNDD DD * 
* CODE AN ASTERISK IN COLUMN 1 TO TREAT THE LINE AS A COMMENT 
CAPTURES=1
IBOTRIG=1000
TEMPUNIT=unitName
MGMTCLAS= mgmtClas 
STRGCLAS= strgClas 
DATACLAS= dataClas 
//*
//DISPLAY  EXEC  PGM=IDCAMS,COND=EVEN 
//SYSPRINT DD SYSOUT=* 
//SYSIN DD * 
LISTC ENT(BMCIBO.TRIAL.$IBO$VSM) ALL 
PRINT IDS(BMCIBO.TRIAL.$IBO$VSM)
```
Allocating and initializing the trial-mode repository

**NOTE**

In trial mode, allocate a separate trial-mode repository for each z/OS system in which you will use Application Accelerator. Separate repositories prevent different systems from attempting to update a repository simultaneously.

In contrast, production mode requires only one set of repositories for multiple z/OS systems because the Cross Product Connectivity (CPC) subsystem manages the updates.

**To allocate and initialize the trial-mode repository**

1. Create a new member by copying member IBOVINIT of the Application Accelerator sample library.

2. Change the JOB statement as needed to suit the standards of your organization.

3. Change the name of the repository data set as needed to suit your trial environment.

   The default data set name in the sample JCL is BMCIBO.TRIAL.\$IBO\$VSM.

4. In the STEPLIB statement of the INIT step, specify the data set name of the library that contains the Application Accelerator executable load modules.

5. In the BMCSYSIN statement, either accept the default keyword values for the IBOINIT utility (Table 2), or change the values to suit your trial environment.

   The IBOINIT utility uses the values that you specify to update the default values in the repository.

**Table 2  Trial-mode keywords for the IBOINIT utility (part 1 of 2)**

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPTURES</td>
<td>Any numeric value</td>
<td>3</td>
<td>Specify the number of times that Application Accelerator should gather statistics during execution of an application job step before recommending the job step for optimizing. The internal default value for this keyword is 3, but the suggested value for a trial-mode implementation is 1.</td>
</tr>
<tr>
<td>IBOTRIG</td>
<td>Any numeric value</td>
<td>1000</td>
<td>Specify the number of IMS DL/I calls that a batch job step must make in a single execution before Application Accelerator will save monitoring data or evaluate optimizing for the job step. Application Accelerator benefits applications that issue a sufficient number of DL/I calls to offset the overhead of Application Accelerator processing. This parameter prevents Application Accelerator from participating in job steps that issue too few DL/I calls to benefit from that participation.</td>
</tr>
</tbody>
</table>
6 **Submit the edited JCL.**

7 **Verify that the job completed without errors and produced the expected results.**

You can view the SYSPRINT data set from the DISPLAY step to see the contents of the repository.

## Modifying application JCL in trial mode

In trial mode, you must make required changes to the JCL for executing each IMS batch application program that Application Accelerator should monitor or optimize. These changes allow Application Accelerator to receive control during execution and access the trial-mode repository. You can also make other changes to provide output data sets for diagnostic information, which can be helpful during the product trial period.

### NOTE

In production mode, no application JCL changes are required. The Cross Product Connectivity (CPC) subsystem enables Application Accelerator to receive control and provides access to required and optional data sets.

### Table 2  Trial-mode keywords for the IBOINIT utility (part 2 of 2)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMPUNIT</td>
<td>Any valid unit name in your environment</td>
<td>SYSDA</td>
<td>Specify the unit name of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
<tr>
<td>MGMTCLAS</td>
<td>Any valid management class name in your environment</td>
<td>None</td>
<td>Specify the SMS management class of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
<tr>
<td>STRGCLAS</td>
<td>Any valid storage class name in your environment</td>
<td>None</td>
<td>Specify the SMS storage class of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
<tr>
<td>DATACLAS</td>
<td>Any valid data class name in your environment</td>
<td>None</td>
<td>Specify the SMS data class of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
</tbody>
</table>
In the Application Accelerator sample library, member IBOBATCH contains a sample DLI batch application job that runs with Application Accelerator. The following example JCL includes the significant statements from this member, omits the explanatory comments, and highlights the changes for Application Accelerator:

```
//IBOBATCH JOB ...
//*
//DLTOGN EXEC PGM=DFSSRC00,PARM='DLI,DFSDDLT0,HIDALLO2,--------,N',
// REGION=5120K
//STEPLIB DD DSN=&hlq.LOAD,DISP=SHR
// DD DSN=&hlq.IMLIB,DISP=SHR
// DD DSN=IMS.RESLIB,DISP=SHR
// DFSRESLB DD DSN=IMS.RESLIB,DISP=SHR
//$IBO$VSM DD DISP=SHR,DSN=BMCIBO.TRIAL.$IBO$VSM
//IMS DD DSN=DBS.TEST.PSBLIB,DISP=SHR
// DD DSN=DBS.TEST.DBDLIB,DISP=SHR
//*
//HIDO00D2 DD DSN=DBS.TEST.HIDO0002.HIDO00D2,DISP=SHR
//HIDO1DX2 DD DSN=DBS.TEST.HIDO1DX2.HIDO1DX2,DISP=SHR
//HIDO6X2 DD DSN=DBS.TEST.HIDO6X2,HIDO6X2,DISP=SHR
//HIDO6X3 DD DSN=DBS.TEST.HIDO6X3,HIDO6X3,DISP=SHR
//IEFRDER DD DSN=&&LOG,DISP=(NEW,PASS),UNIT=SYSDA,
// SPACE=(TRK,(1,1))
//*
//PRINTDD DD SYSOUT=* 
//SYSUDUMP DD SYSOUT=* 
//DFSSTAT DD SYSOUT=* 
//IBOTRACE DD SYSOUT=* 
//DLITRACE DD SYSOUT=* 
//*
//*IBOIGNOR DD DUMMY 
//*IBO#xxxx DD DUMMY 
//*
//DFSVSAMP DD * 12288,6
//SYSIN DD *
S 1 1 1 1 1 1 HID00002 I 9999 GN HIDRUT02
```

To modify an IMS batch application job step

1. In the STEPLIB statement, at or near the beginning, insert the library (or libraries) that contain the BMC executable load modules for:

   - Application Accelerator
   - BMC MAXM solutions for IMS
   - CPC components

   The data set names and library contents depend on the options selected when the products were installed in your environment.
2 If you store your CPU ID authorization passwords in a separate data set, include that data set in the STEPLIB concatenation.

3 Add a $IBO$VSM DD statement to identify the data set name of the previously allocated trial-mode repository.

4 (optional) Add DD statements for diagnostic output data sets.

For the following data sets, specify the standard SYSOUT parameter in your environment. BMC recommends that you add these DD statements to all modified job steps during trial mode testing.

<table>
<thead>
<tr>
<th>DD statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLITRACE</td>
<td>In job steps that use BMC proprietary access methods for optimization, MAXM modules use DLITRACE to trace code flow and provide details when errors occur.</td>
</tr>
<tr>
<td>IBOTRACE</td>
<td>Application Accelerator modules use IBOTRACE to trace code flow and provide details when errors occur.</td>
</tr>
</tbody>
</table>

5 Only if needed, add the IBOIGNOR DD DUMMY statement to job steps that you do not want Application Accelerator to optimize.

The IBOIGNOR statement prevents Application Accelerator from:

- Optimizing the current execution of this job step
- Recommending optimization for the next execution

If you remove this DD statement from a subsequent job step execution, Application Accelerator does not optimize that execution but considers recommending optimization for subsequent executions. Monitoring continues.

---

**Providing APF authorization in trial mode**

In trial mode, you must enable Application Accelerator to execute in an APF-authorized environment.

**NOTE**

In production mode, Application Accelerator automatically uses the Cross Product Connectivity (CPC) subsystem for authorization.
When Application Accelerator runs, it attempts to establish an APF-authorized environment through the following sequence:

1. Application Accelerator determines whether the product modules are being loaded from an APF-authorized STEPLIB, JOBLIB, or LNKLST concatenation of libraries.

   If the libraries are APF authorized, the product obtains authorization through conventional methods.

   To use an APF-authorized library, typically you must request help from the individuals who manage the z/OS environment for your organization. They might use an existing APF-authorized library for the product load modules, or create a new one. If they use an existing library, a system IPL is not necessary. If they create a new library, they must add the data set to the APF-authorized list in member IEAAPFnn of SYS1.PARMLIB, and perform a system IPL.

2. If the libraries are not APF authorized, the product determines whether the default Database Utilities Subsystem (DBUSS) is active.

   The subsystem ID of the default DBUSS is DBUZ. If DBUZ is active, the utility obtains authorization through DBUZ.

   For more information about setting up and using a DBUSS, see the BMC Database Products for IMS Configuration Guide.

3. If DBUZ is not active, the product searches for an active CPC subsystem.

   If an active CPC subsystem is found, the product obtains authorization through that subsystem.

   For more information about setting up and using a CPC subsystem, see the BMC Database Products for IMS Configuration Guide.

4. If no APF authorization is available by any of these methods, the product issues an error message, and the application job continues without Application Accelerator participation.
Troubleshooting problems in trial mode

If a problem occurs while you are using Application Accelerator in trial mode, you can refer to the following topics.

Changing default values in trial mode

The default values that you use in trial mode are not likely to require changes. If they do, you can use the IBOINIT utility as outlined in the following procedure to change the values without affecting any data that Application Accelerator collected during monitoring and optimizing activities.

In the Application Accelerator sample library, member IBOVMUPD contains a sample job that updates the default values in the trial-mode repository. The following example JCL includes the significant statements from this member, but omits the explanatory comments:

```
//IBOVMUPD   JOB ...  
/*
//MUPDATE   EXEC  PGM=IBOINIT
//STEPLIB    DD    DISP=SHR,DSN=&hlq.LOAD
//$IBO$VSM  DD    DISP=SHR,DSN=BMCIBO.TRIAL.$IBO$VSM
//IBOTRACE   DD    SYSOUT=*  
//SYSUDUMP   DD    SYSOUT=*  
//BMCPRINT   DD    SYSOUT=*  
//BMCYSIN    DD    *
  * CODE AN ASTERISK IN COLUMN 1 TO TREAT THE LINE AS A COMMENT
  CAPTURES=1
  IBOTRIG=1000
  TEMPUNIT=unitName
  MGMTCLAS= mgmtClas
  STRGCLAS= strgClas
  DATACLAS= dataClas
/*
//DISPLAY    EXEC  PGM=IDCAMS,COND=EVEN
//SYSPRINT    DD    SYSOUT=*  
//SYSSIN      DD    *
  LISTC ENT(BMCIBO.TRIAL.$IBO$VSM) ALL
  PRINT IDS(BMCIBO.TRIAL.$IBO$VSM)
```

To change default values in the trial-mode repository

1 Create a new member by copying member IBOVMUPD of the Application Accelerator sample library.

2 Change the JOB statement as needed to suit the standards of your organization.
Reproducing the trial-mode repository for troubleshooting

3 Specify the name of your repository data set.

   The default data set name in the sample JCL is BMCIBO.TRIAL.$IBO$VSM. You can issue a global change command to change this name throughout the job.

4 In the STEPLIB statement of the MUPDATE step, specify the data set name of the library that contains the Application Accelerator executable load modules.

5 In the BMCSYSIN statement, change or accept the values of the keywords that control the IBOINIT utility, as needed.

   For more information, see Table 2 on page 24.

6 Submit the edited JCL.

7 Verify that the job completed without errors and produced the expected results.

   You can view the SYSPRINT data set from the DISPLAY step to see the contents of the repository.

Reproducing the trial-mode repository for troubleshooting

For problem diagnosis, BMC Customer Support might ask you to send your trial-mode repository to BMC. You can use the IDCAMS utility to reproduce the contents of the trial-mode repository to a sequential data set for easy transmission.

To reproduce the trial-mode repository

1 If requested by Customer Support, use the REPRO command to reproduce the contents of the trial-mode repository.

   The following example JCL allocates the sequential data set and executes the REPRO command.

```javascript
//IBOVRPRO JOB ...
//*
//STEP1 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//INDD DD DSN=BMCIBO.TRIAL.$IBO$VSM,DISP=SHR
//OUTDD DD DSN=BMCIBO.TRIAL.$IBO$VSM.REPRO,UNIT=SYSDA,
//     DISP=(NEW,CATLG,DELETE),
//     DCB=(RECFM=VB,LRECL=32004,BKSIZE=32008),
//     SPACE=(CYL,(10,10),RLSE)
//SYSIN DD *
REPRO INFILE(INDD) OUTFILE(OUTDD)
```
Preparing to use production-mode components

The following topics provide instructions for preparing Application Accelerator for IMS product components for use in production mode:

- Transitioning from trial to production mode
- Overview of production-mode components
- Configuring and starting mainframe components
- Configuring the console
  - Installing the console
  - Updating the console
  - Uninstalling the console
- Launching and exiting the console
- Managing UIM server clients
- Overview of the console
  - Navigation window
  - Messages window
  - Work area
  - Selecting user options
- Setting up connections
  - Overview of the Enterprise List and personal connections
  - Using the Add Host Connection command

**NOTE**

Unless you are responsible for setting up and administering the Cross Product Connectivity (CPC) subsystem and its affiliated subsystems, servers, and repositories, you can skip all sections of this chapter except “Installing the console” on page 35 and “Launching and exiting the console” on page 37. Use of the console is intuitive, especially if you are already familiar with standard Windows-based applications.
Transitioning from trial to production mode

When ready to transition from trial mode to production mode, use the following workflow:

1. Implement production-mode components as described in Chapter 3, “Preparing to use production-mode components.”

2. Define required production-mode values and policies as described in Chapter 4, “Using Application Accelerator in production mode.”

3. To test or phase in the use of the CPC subsystem and repositories, use the IBO#cpcID DD DUMMY statement to identify a CPC subsystem for an application job step.

For more information, see “Using production mode without screening application jobs” on page 80 and “Using a different set of CPC repositories” on page 81.

Overview of production-mode components

In production mode, Application Accelerator uses the Cross Product Connectivity (CPC) subsystem and its associated subsystems and servers for the following purposes:

- Screening and intercepting IMS application jobs so that Application Accelerator can receive control during application execution
- Managing Application Accelerator data
- Establishing an APF-authorized environment for Application Accelerator processing
- Communicating with the BMC Database Management Console
NOTE
Numerous BMC products can share the production-mode components, including these products:

- MAXM Database Advisor for IMS
- Backup and Recovery Solution for IMS
- BMC Fast Path suites
- MAXM REORG solutions
- BMC System Administration for IMS
- Energizer for IMS Connect

If you are already using these components with another BMC product, no action is required other than to update the components as needed to support Application Accelerator.

Figure 1 shows the production-mode components and the relationships between them.

You can use the BMC Database Management Console (a graphical user interface, or GUI) to specify default and site values, establish policies, and view Application Accelerator reports. The console runs on a client workstation under the Microsoft Windows operating system and communicates with the User Interface Middleware (UIM) server through TCP/IP technology.
Configuring and starting mainframe components

- The UIM server translates communication between the console and the ADV server. The UIM server runs on the z/OS platform.

- The ADV server communicates with the UIM server, the repositories, IMS subsystems, and Application Accelerator. The ADV server runs on the z/OS platform.

- ADV repositories contain Application Accelerator setup and control information and the data that the product collects during execution. ADV repositories are VSAM data sets that are shared by all ADV servers in a sysplex. One ADV server is assigned to handle I/O to the repositories.

- The Cross Product Connectivity (CPC) subsystem manages APF–authorized functions and processes intercepted operating-system requests. Application Accelerator communicates with the CPC subsystem, which works with the ADV server to manage product data. The CPC subsystem communicates with CPC subsystems on other z/OS images through the z/OS coupling facility.

- Although not shown in Figure 1, the BMC Primary subsystem (BMCP) establishes supervisory services for many BMC products. The BMCP communicates in the background with the CPC subsystem. One BMCP is installed on each z/OS image and is shared by all BMC products that are running on that image.

Configuring and starting mainframe components

Before you can use Application Accelerator in production mode, a system programmer or other person with the required level of authority must install and configure the CPC subsystem, BMCP, UIM server, and ADV server. Over time, mainframe systems personnel operate these components and maintain them as needed. In addition, your system security specialist can establish system authorization facility (SAF) security for Application Accelerator resources to prevent unauthorized access and use.

The required subsystems and servers are managed as started tasks. You use the start (S) command to submit JCL for the BMCP, the CPC subsystem, and the UIM server for execution. These tasks typically remain running until stopped by a command. Initializing the CPC subsystem automatically starts the ADV server.
Configuring the console

After the UIM server is installed and running, you can install, configure, and update the console. The UIM server downloads the required code to the console computer. Depending on your user privileges on that computer, you can install the console as follows:

- If you have administrator rights, you can install one instance of the console to be shared by all users of that computer. Tracing and logging are fully supported in this case. The default installation location is `C:\Program Files\BMC Software\Database Management Console`.

- If you do not have administrator rights, you can install a single instance of the console for your use. However, tracing and logging might not work. The default installation location is `C:\Documents and Settings\user\My Documents\BMC Software\Database Management Console`.

Installing the console

Use the following procedure to install the console on a personal computer.

Before you begin

You will need:

- The name of the host computer on which the UIM server is running
- The UIM server’s port number
- Access to a supported web browser

---

**EXAMPLE**
The following commands start the BMCP, a CPC subsystem named IBOP, and a UIM server named IBOPUIM:

```
S BMCP
S IBOP
S IBOPUIM
```

For specific instructions about installing, configuring, and operating the mainframe components, see the *Installation System User Guide* and the *BMC Database Products for IMS Configuration Guide*.
If you do not know the host name and port number, consult your system administrator.

**To install the console**

1. From your web browser, enter the URL for the UIM server on the mainframe.
   
   For example, enter `http://uimServerHostName:uimPortNumber/dna/index.html`, replacing the variables with your information.

2. On the resulting web page, click **Install Local Client**.

3. Based on the browser that you are using, either open the file from its current location, or save the file to your hard drive and then run the program:
   
   - If you are using Internet Explorer, perform the following steps:
     
     A. In the File Download dialog box, select **Run this program from its current location**, and click **OK**.
     
     B. If the Security Warning dialog box is displayed, click **Yes**.
   
   - If you are using Mozilla Firefox or a similar browser, perform the following steps:
     
     A. In the Save As dialog box, select a location in which to save the installation file, and click **Save**.
     
     The `.exe` file is downloaded.
     
     B. Browse to the saved file, and double-click it.

4. Enter the requested information in the BMC Database Management Wizard.

5. On the last page of the wizard, select **Launch the Database Management Console**.

6. Click **Finish**.
   
   The BMC Database Management Console starts.

**Updating the console**

When you launch the console, the files on your personal computer (local client) are compared to the file residing on the UIM server. If a change in the installed products has occurred, the console is updated automatically.
Uninstalling the console

Use the following procedure if you need to remove the console from your personal computer.

To uninstall the console

1. In Microsoft Windows, open the Control Panel. For more information, see the documentation for your version of Windows.

2. In the Control Panel window, click Add/Remove Programs.

3. Select and uninstall BMC Database Management Console (user).

   The value of user is Admin if the console was installed by an administrator; otherwise, the value is the relevant user name.

Launching and exiting the console

The console uses z/OS authentication. When you launch the console, you must provide a valid SAF user ID and password. The security administrator for your site manages the SAF account information for users.

To launch the console

1. From the Start menu, select All Programs => BMC Software => Database Management Console.

   The login dialog box (Figure 2 on page 38) is displayed.

---

**NOTE**

If the program that installs the console on the UIM server is updated, you must enter the URL for the UIM server on the mainframe to update the console. For more information, see “Installing the console” on page 35.
2 From the **Host** box, select your UIM host name.

--- **TIP**

You can manage the host list by clicking the button to the right of the **Host** box. For more information, see “Managing UIM server clients” on page 39.

3 Enter the user ID and password that is valid on the selected host (z/OS) system.

4 *(optional)* Enter your group and account information.

5 Click **OK**.

**To exit the console**

1 From the **File** menu, select **Exit**.

2 On the **Quit?** dialog box, click **Yes**.
Managing UIM server clients

When you launch the console, you can manage your UIM server clients from the login dialog box.

To manage the UIM server clients

1. From the Start menu, select All Programs => BMC Software => Database Management Console.

   The BMC Database Management Console login dialog box (Figure 2 on page 38) is displayed.

2. Click the (More) button to the right of the Host box.

   The Manage UIM Server Clients dialog box is displayed (Figure 3).

   ![Manage UIM Server Clients dialog box](image)

3. Take the appropriate actions to manage your host list:

   - To add a host, click Add button and complete the fields in the Details area.
   - To edit a host, select it in the host list, click Edit and change the fields in the Details area as needed.
   - To delete a host, select it in the host list, and click Delete.
   - To define a host to display as the default host when logging into the console, click the check box next to the host name.
Overview of the console

The BMC Database Management Console is a Windows application. You can use it to access console-enabled BMC products through a single interface.

Figure 4  BMC Database Management Console

The console interface features the following windows:

- Navigation window
- Messages window
- Work area

Legend
1. Navigation window
2. Work area
3. Messages window
4. Status line
5. Open window tabs
Navigation window

The Navigation window is on the left side of the console and consists of the following tabs:

- The **Main** tab displays the data sources to which you have defined connections and other related objects. To access commands from a pop-up menu, right-click an object in the tree. These menu commands are also available from the **Action** menu on the console toolbar.

- The **Tasks** tab contains icons that link to parts of the product.

Messages window

The Messages window is at the bottom of the console and lists messages that the product generates during the current session. The most recent message is displayed at the top of the window. To view detailed Help, click any message. To access Help or clear all messages from the window, right-click a message.

Table 3 describes the information that is displayed in the Messages window.

**Table 3 Messages window**

<table>
<thead>
<tr>
<th>Column heading</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity</td>
<td>Type of message: informational, warning, or error</td>
</tr>
<tr>
<td>When</td>
<td>Time that the message was generated</td>
</tr>
<tr>
<td>Source</td>
<td>Where the message originated</td>
</tr>
<tr>
<td>Message</td>
<td>Numerical identifier for the message and the message text</td>
</tr>
</tbody>
</table>

Message icons (Table 4) graphically illustrate the severity of a message.

**Table 4 Message icons**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>📣</td>
<td>Informational</td>
<td>Status of your system or product</td>
</tr>
<tr>
<td>💡</td>
<td>Warning</td>
<td>Noncritical problem that might interfere with system or product processes</td>
</tr>
<tr>
<td>💥</td>
<td>Error</td>
<td>Critical problem that might interfere with system or product processes</td>
</tr>
</tbody>
</table>
Work area

Use the work area to work with the data sources that you select from the Navigation window, or with console tools. The work area contains a window for each item that you select, as indicated by the windows tabs at the bottom of the work area (Figure 4). Clicking a tab lets you see the information on that tab.

TIP

When you finish using a window, close it. Open windows consume computer memory.

To sort columns in the work area

To sort a column, click the column heading.

An up or down arrow in the column heading shows whether the sort is ascending (up arrow) or descending (down arrow).

To select rows in the work area

To select rows, perform one of the following actions:

- To select contiguous rows, click anywhere within the row and drag the mouse over the rows.
- To select noncontiguous rows, press CTRL while selecting each row.

Selecting user options

The Set Options dialog box, which you open by choosing Tools => Options, provides the ability to show the taskbar buttons in the work area. You can display taskbar buttons for windows that are open in the work area. Taskbar buttons are displayed along the bottom edge of the work area. The default is to show the buttons.
Setting up connections

When you launch the console, you must define at least one host connection. After defining a host connection, you can work with resources on that host. The connection definition remains available whenever you start the console and log on. The names of all defined connections are listed in the Connections folder on the Main tab of the Navigation window.

Overview of the Enterprise List and personal connections

Host connections for individual users are managed separately from host connections for the entire enterprise. This separation makes it easier to isolate activities in different environments (such as testing systems versus production systems or application systems versus other application systems).

The console uses a shared Enterprise List of connections. This list resides on the UIM server. Users who have the appropriate security authority can add, delete, and edit connection information in the Enterprise List. When any user launches the console, the Enterprise List identifies the host connections that are defined.

Each user has a personal list of connections. You can define a connection in your personal list manually by entering connection information (such as the host name and port number). You can also add connections to your personal list by selecting predefined connections from the Enterprise List. After you define a host connection in your personal list, that connection definition remains available whenever you start the console and log on.

Managing the Enterprise List

If you have the appropriate authority, use the following procedure to add, edit, or delete connections in the shared Enterprise List on the UIM server.

To manage the Enterprise List

1. On the Main tab of the Navigation window, right-click the Connections folder and select Manage Host Connections in the Enterprise List.

   The Manage Enterprise Connections dialog box is displayed.

2. Add, edit, or delete a connection as follows:
Using the Add Host Connection command

To define a single connection quickly, use the Add Host Connection command. Use this method to create a connection definition when you know the required connection information, such as host and port.

**To add a connection**

1. On the Main tab of the Navigation window, right-click the Connections folder and click Add Host Connection.

   The Define Connection dialog box is displayed.

2. In the Host box, enter the name of the host.

3. In the Port box, enter the UIM port number.

   The value in the Display Name field is generated automatically from the host name and the port number.

4. (optional) In the Description box, enter a descriptive name for the connection.

5. In the Login Information area, select whether to connect by using console credentials or with credentials that you specify.

Click OK to apply your changes to the shared Enterprise List and close the dialog box.
6 (optional) To connect automatically whenever the console starts, select **Autoconnect at console start**.

7 Click **OK**.

The new host connection is displayed in the **Connections** folder on the **Main** tab of the Navigation window.

**To connect to a host**

1 On the **Main** tab in the Navigation window, right-click the host connection and click **Connect**.

   The Connect dialog box displays the connection information for the selected host.

2 In the **Login Information** area, select whether to connect by using console credentials or with credentials that you specify.

   **NOTE**
   
   Console credentials are the user name and password that you used to log on to the console. If you select **Connect using these credentials**, you must enter a user name and password. If necessary, you can also enter the account and group to which the user name belongs.

3 (optional) To connect automatically whenever the console starts, select **Autoconnect at console start**.

4 Click **OK**.
Chapter 4  Using Application Accelerator in production mode

The following topics provide instructions for using the BMC Application Accelerator for IMS product in production mode.

Workflow for production mode ................................................................. 48
  Default and site values ........................................................................ 49
  Policies ................................................................................................. 50
Setting default and site values in the console ........................................... 51
  Setting default and site values in the Setup Wizard ............................... 51
  Setting default values in the Manage Defaults window .......................... 52
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Workflow for production mode

To use Application Accelerator in production mode, you perform the following basic tasks:

1. **Set default values and site values** to control basic Application Accelerator operations.
   
   For more information, see “Default and site values” on page 49.

2. **Create and manage policies** to tell Application Accelerator which application jobs are eligible for processing and how to handle them.
   
   For more information, see “Policies” on page 50.

3. **After Application Accelerator optimizes one or more application job steps, view information** that can help you evaluate the results of Application Accelerator activities.
   
   For more information, see “Evaluating Application Accelerator results” on page 75.

4. **If needed, troubleshoot problems.**
   
   For more information, see “Troubleshooting problems in production mode” on page 79.

**NOTE**

You can use the BMC Database Management Console to perform many production-mode tasks. For tasks in the console, this guide provides only basic instructions. For details, including field-level descriptions, see the online Help.
Default and site values

In production mode, you must define default values and site values that control basic Application Accelerator operations in your environment.

**NOTE**
Default and site values are sometimes called *parameters* or *options*.

Default values are specific to Application Accelerator and define how the product behaves in your environment. For example, you can use default values to:

- Enable or disable various Application Accelerator functions
- Enable or disable processing for various types of applications
- Set the minimum number of application executions that Application Accelerator must monitor before optimizing
- Specify how to allocate temporary data sets for Application Accelerator

Site values are shared with certain other BMC products in your environment and define how those products, including Application Accelerator, work with resources in your environment. For example, you can use site values to:

- Specify a valid JOB statement and control region sizes for various types of jobs
- Specify how to allocate work files and other data sets
- Define user variables
- Schedule backups and other maintenance tasks for product components

Default and site values reside in the CPC repository. The CPC subsystem provides access to this repository.

To set default and site values, you can use the BMC Database Management Console. To set default values, you have the option of using a batch utility (IBOINIT). Use the method that you prefer:

- “Setting default and site values in the console” on page 51
- “Setting default values with the IBOINIT utility” on page 53
In production mode, you use the CPC subsystem and policies to manage how Application Accelerator interacts with specific application jobs and steps in your environment. A policy identifies an application by its identifying characteristics, such as the job name or program specification block (PSB) name. You create entries in the repository to define Include policies and Exclude policies.

The CPC subsystem screens all eligible IMS batch application jobs in the system. Application Accelerator uses a two-phase process to determine whether and how to interact with jobs and steps:

- Phase 1—Using the Exclude table and the job names or PSB names and z/OS System IDs from the Policies table, Application Accelerator builds the Include table. (You set a default value to specify whether to use job names or PSB names). You create entries in the Exclude table to specify the full names (with no wildcard characters) of jobs or PSBs to eliminate from further consideration. A job or PSB that matches an entry in the Exclude table is ineligible for further Application Accelerator processing.

  By using the job name or PSB name and the z/OS system ID from the Include table, you can limit the selection of batch jobs that Application Accelerator manages. If a job’s characteristics do not match an entry in the Include table, the job is also ineligible for further Application Accelerator processing.

- Phase 2—Application Accelerator uses the Policies table. You create entries in this table to specify the names or IDs of jobs, programs, PSBs, IMS systems, and z/OS systems. Your specifications can be generic (using a pattern of literal and wildcard characters) or specific (using all literal characters). The entries also specify the action that Application Accelerator should perform for job steps that match these qualifiers.

You can use the BMC Database Management Console to set up and manage policies for Application Accelerator. The Manage Policy window on the console provides an interactive way to work with policies. Alternatively, you have the option of using a batch utility (CPCBATCH) to set up and manage policies. Use the method that you prefer:

- “Managing policies through the console” on page 59
- “Managing policies through the CPCBATCH utility” on page 64
Setting default and site values in the console

Use the following procedures to set up and maintain Application Accelerator default values and site values through the BMC Database Management Console. You can choose any of the following methods:

- “Setting default and site values in the Setup Wizard” on page 51 automatically leads you through the process of setting every default and site value. BMC recommends using this method for first-time setups.

- “Setting default values in the Manage Defaults window” on page 52 and “Setting site values in the Maintain Parameters window” on page 52 provide fast access to individual values. BMC recommends these methods when you want to change one or a few values.

Setting default and site values in the Setup Wizard

Use this procedure to access the Setup Wizard and let it guide you through setup for the default values and site values.

**NOTE**

The Setup Wizard accesses and uses parameters and site values that are shared with other BMC products. If you change existing site values, you could affect the operation of those products.

To set or change default and site values through the Setup Wizard

1. In the Navigation window, right-click the IMS Applications object.
2. Select Setup Wizard.
3. View the displayed information and values on each page, and change the values as needed.

**TIP**

Click Next to move from one wizard page to the next.

4. On the last page of the wizard, click Finish to save your changes.
Setting default values in the Manage Defaults window

Use the following procedure if you prefer to set and change your Application Accelerator default values through the Manage Defaults window in the console.

NOTE
The parameters in the Manage Defaults window are identical to those on the Configure Defaults page of the Setup Wizard.

To set or change default values in the Manage Defaults window

1. In the Navigation window, right-click the IMS Applications object.
2. Select Manage Defaults.
3. Accept or change the displayed values for the parameters.
4. Click Save, or close the window and confirm that you want to save your changes.

Setting site values in the Maintain Parameters window

Use the following procedure if you prefer to use the Maintain Parameters window in the console to set and change site values. However, keep in mind that site values are shared with other BMC products. Changing existing site values could affect the operation of those products.

NOTE
Unless you are already familiar with the Maintain Parameters window, BMC recommends that you use the Setup Wizard to set site values.

To set or change site values in the Maintain Parameters window

1. In the Navigation window, right-click the IMS Databases object.
2. Choose Configuration=>Maintain Parameters.
3. On the left side of the Maintain Parameters window, click the category of the parameters that you want to edit.
The following categories apply to Application Accelerator:

- Job Control
- Region
- Work Files
- DD Names
- User Variables
- Schedule Repository Backups

4 On the right side of the Maintain Parameters window, edit the displayed parameter values.

5 Click Save, or close the window and confirm that you want to save your changes.

Setting default values with the IBOINIT utility

Use the following procedure if you prefer to use the IBOINIT batch utility (instead of the console) to set Application Accelerator default values.

**NOTE**

IBOINIT does not set site values. To set site values, see “Setting default and site values in the Setup Wizard” on page 51 or “Setting site values in the Maintain Parameters window” on page 52.

In the Application Accelerator sample library, member IBOCINIT contains a job to initialize the values. Member IBOCMUPD contains a job to update the values. The following example JCL includes the significant statements from this member, but omits the explanatory comments:

```plaintext
//INIT EXEC PGM=IBOINIT
//STEPLIB DD DISP=SHR,DSN=hlq.LOAD
//SYSUDUMP DD SYSOUT=* 
//BMCPRT DD SYSOUT=* 
//IBOTRACE DD SYSOUT=* 
//BMCSYSIN DD *
CPCID=CPCX
CAPTURES=3
IBOTRIG=1000
TEMPUNIT=unitName
MGMTCLAS=mgmtClas
STRGCLAS=strgClas
DATACLAS=dataClas
```
To initialize and update default values by using the IBOINIT utility

1 Create a new member by copying member IBOCINIT or IBOCMUPD of the Application Accelerator sample library.

2 Change the JOB statement as needed to suit the standards of your organization.

3 In the STEPLIB statement of the INIT or MUPDATE step, specify the data set name of the library that contains the Application Accelerator executable load modules.

4 In the BMCSYSIN statement, change or accept the values of the keywords that control the IBOINIT utility.

Choose values to suit the requirements and conventions of your production environment. For descriptions of the keywords, see Table 5 on page 54.

**TIP**

To treat a line in the BMCSYSIN data set as a comment, insert an asterisk in column 1.

5 Submit the edited JCL.

6 Verify that the job completed without errors and produced the expected results.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPCID</td>
<td>Valid CPC ID</td>
<td>None</td>
<td>Specify the CPC identifier of the CPC subsystem that controls the repository to be updated.</td>
</tr>
<tr>
<td>CAPTURES</td>
<td>A numeric value</td>
<td>3</td>
<td>Specify the number of times that Application Accelerator should gather statistics during execution of an application job step before recommending the job step for optimizing.</td>
</tr>
</tbody>
</table>
### Table 5  Production-mode keywords for the IBOINIT utility (part 2 of 6)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBOTRIG</td>
<td>A numeric value</td>
<td>1000</td>
<td>Specify the number of IMS DL/I calls that a batch job step must make in a single execution before Application Accelerator will save monitoring data or evaluate optimizing for the job step. Application Accelerator benefits applications that issue a sufficient number of DL/I calls to offset the overhead of Application Accelerator processing. This parameter prevents Application Accelerator from participating in job steps that issue too few DL/I calls to benefit from that participation.</td>
</tr>
<tr>
<td>TEMPUNIT</td>
<td>Any valid unit name in your environment</td>
<td>SYSDA</td>
<td>Specify the unit name of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
<tr>
<td>MGMTCLAS</td>
<td>Any valid management class name in your environment</td>
<td>None</td>
<td>Specify the Storage Management Subsystem (SMS) management class of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
<tr>
<td>STRGCLAS</td>
<td>Any valid storage class name in your environment</td>
<td>None</td>
<td>Specify the SMS storage class of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
<tr>
<td>DATACLAS</td>
<td>Any valid data class name in your environment</td>
<td>None</td>
<td>Specify the SMS data class of the device that Application Accelerator should use when allocating small temporary data sets during processing.</td>
</tr>
<tr>
<td>IBOOFF</td>
<td>N, Y</td>
<td>N</td>
<td>Specify N to enable Application Accelerator to process applications of all types. You can use other keywords to prevent processing of specific application types. Specify Y to disable Application Accelerator for all applications, regardless of their type. You might specify this value if a problem is occurring. <strong>Note:</strong> This parameter applies to applications for which Application Accelerator was implemented in production mode. It does not apply if Application Accelerator was implemented in trial mode.</td>
</tr>
</tbody>
</table>
Setting default values with the IBOINIT utility

Table 5  Production-mode keywords for the IBOINIT utility (part 3 of 6)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
</table>
| SVCOFF  | N, Y            | N             | Specify **N** to enable dynamic screening of IMS applications to determine whether Application Accelerator should participate in their executions. Specify **Y** to disable dynamic screening. You might specify this value if a problem is occurring with dynamic screening, or if you will never want to use dynamic screening. **Note:** This parameter does not disable Application Accelerator if either of the following conditions exists:  
  - The job step is using the product in trial mode.  
  - The job step JCL includes the IBO#cpclD DD statement, and the product load modules are included in the STEPLIB, JOBLIB, or LNKLST concatenation. |
| SVCEXP  | N, Y            | N             | Specify **N** to disable extended screening. This value limits Application Accelerator to reviewing attaches of DFSRRC00 (the IMS batch region controller) that occur from job step task control blocks (TCBs) only. Specify **Y** to enable extended screening. Application Accelerator will review all invocations of DFSRRC00, in addition to invoking it by specifying PGM=DFSRRC00 in the job step JCL. When you use this value, Application Accelerator reviews any attach of DFSRRC00, whether the attach is related to a job step execution or not. |
Setting default values with the IBOINIT utility

Chapter 4 Using Application Accelerator in production mode  

PROCOPTA Y N Y Specify Y to enable users to specify policies that use BMC custom I/O techniques for applications that have update intent (through program control blocks, or PCBs, that have a PROCOPT other than G). If the application attempts to update a database, the custom I/O techniques dynamically disengage from the process.

Specify N to disable use of custom I/O techniques for PCBs that have a PROCOPT other than G.

For eligible applications, Application Accelerator can replace native DL/I call processes with BMC custom I/O techniques. An application is eligible if the application makes no update calls to any database.

Application Accelerator automatically identifies PCBs for which a get-type PROCOPT is specified, and evaluates whether to replace the DL/I calls with custom I/O techniques. However, an application developer might code a PCB with a PROCOPT other than G, even if the application performs only read-type DL/I calls. To improve optimization results for these applications, you can use this keyword to attempt to use custom I/O techniques for PCBs that perform only read-type DL/I calls but are specified with a PROCOPT other than G.

SVCJOB and SVCPSB Y N SVCJOB=N SVCPSB=Y Use the SVCJOB and SVCPSB keywords to specify the characteristic that identifies applications to exclude from Application Accelerator participation:

- Specify SVCJOB=Y and SVCPSB=N to use the name of the application job, as specified with the JOB statement in the JCL for executing the application.

- Specify SVCJOB=N and SVCPSB=Y to use the name of the program specification block (PSB) that the application uses to access IMS resources.

Warning: If you change either of these values, Application Accelerator must delete existing entries in the Exclude table.

Table 5 Production-mode keywords for the IBOINIT utility (part 4 of 6)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCOPTA</td>
<td>Y N</td>
<td>Y</td>
<td>Specify Y to enable users to specify policies that use BMC custom I/O techniques for applications that have update intent (through program control blocks, or PCBs, that have a PROCOPT other than G). If the application attempts to update a database, the custom I/O techniques dynamically disengage from the process. Specify N to disable use of custom I/O techniques for PCBs that have a PROCOPT other than G. For eligible applications, Application Accelerator can replace native DL/I call processes with BMC custom I/O techniques. An application is eligible if the application makes no update calls to any database. Application Accelerator automatically identifies PCBs for which a get-type PROCOPT is specified, and evaluates whether to replace the DL/I calls with custom I/O techniques. However, an application developer might code a PCB with a PROCOPT other than G, even if the application performs only read-type DL/I calls. To improve optimization results for these applications, you can use this keyword to attempt to use custom I/O techniques for PCBs that perform only read-type DL/I calls but are specified with a PROCOPT other than G.</td>
</tr>
</tbody>
</table>

| SVCJOB and SVCPSB | Y N | SVCJOB=Y SVCPSB=N | Use the SVCJOB and SVCPSB keywords to specify the characteristic that identifies applications to exclude from Application Accelerator participation:  
- Specify SVCJOB=Y and SVCPSB=N to use the name of the application job, as specified with the JOB statement in the JCL for executing the application.  
- Specify SVCJOB=N and SVCPSB=Y to use the name of the program specification block (PSB) that the application uses to access IMS resources.  
Warning: If you change either of these values, Application Accelerator must delete existing entries in the Exclude table.  |
Setting default values with the IBOINIT utility

Table 5  Production-mode keywords for the IBOINIT utility (part 5 of 6)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
</table>
| SVC BMP | Y, N            | Y             | Specify Y to enable Application Accelerator to process applications that execute in an IMS batch message processing (BMP) region. Specify N to disable Application Accelerator from processing BMP applications. You might specify this value if one or more of the following conditions exist:  
  ■ You are phasing in Application Accelerator processing, based on application type.  
  ■ Your organization does not have any BMP applications, or never wants to use Application Accelerator for BMP applications.  
  ■ A problem is occurring when Application Accelerator processes a BMP application (but not other applications); you need to disable processing for BMP applications temporarily. |
| SVC DLI | Y, N            | Y             | Specify Y to enable Application Accelerator to process applications that execute in an IMS batch DLI-type region. Specify N to disable Application Accelerator from processing DLI applications. You might specify this value if one or more of the following conditions exist:  
  ■ You are phasing in Application Accelerator processing, based on application type.  
  ■ Your organization does not have any DLI applications, or never wants to use Application Accelerator for DLI applications.  
  ■ A problem is occurring when Application Accelerator processes a DLI application (but not other applications; you need to disable processing for DLI applications temporarily. |
Managing policies through the console

In the console’s Manage Policy window, you can use the Policy tab to manage the Policies table, and the Exclude tab to manage the Exclude table.

Use the following procedures to work with policies through the console:

- “Accessing the Manage Policy window”
- “Adding and editing policies” on page 60
- “Rearranging the Policies table” on page 62
- “Filtering displayed policies” on page 62
- “Adding policies to the Exclude table” on page 63
- “Exporting policy information” on page 64

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVCDBB</td>
<td>Y, N</td>
<td>Y</td>
<td>Specify Y to enable Application Accelerator to process applications that execute in an IMS batch DBB-type region. Specify N to disable Application Accelerator from processing DBB applications. You might specify this value if one or more of the following conditions exist:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- You are phasing in Application Accelerator processing, based on application type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Your organization does not have any DBB applications, or never wants to use Application Accelerator for DBB applications.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- A problem is occurring when Application Accelerator processes a DBB application (but not other applications); you need to disable processing for DBB applications temporarily.</td>
</tr>
</tbody>
</table>
Accessing the Manage Policy window

Use the following procedure to use the Manage Policy window in the console.

To access the Manage Policy window

1. In the Navigation window, right-click the **IMS Applications** object.
2. Select **Manage Policy**.
3. Click either the Policy tab or the Exclude tab.
4. View and change the tables as needed.

**TIP**

Clicking **Refresh** redisplay the tab with the latest values from the repository.

5. Click **Save** to store your changes in the repository.

This action saves any changes that you have made in both tabs.

Adding and editing policies

In the console’s Manage Policy window, the Policies table (in the lower portion of the Policy tab) lists the policies that define how Application Accelerator handles an eligible application jobs. You can specify a maximum of 1000 policies.

Use the following procedures to add or edit policies. You can do so via the Add/Edit dialog, or by selecting application jobs from a list of job steps that Application Accelerator has been monitoring.

To add or edit a policy by using the Add/Edit dialog

1. In the Manage Policy window, click the Policy tab if it is not already displayed.
2. Take one of the following actions:
   - To edit an existing policy, click the corresponding row in the Policies table, and then click the **Edit** button.
   - To add a new policy that uses the values that you have entered in the Policy display filter, click the **Add Like** button.
The **Add Like** button can help you to insert a new policy in the correct position within the list of existing policies. The order of the policies is important when determining which one will take effect; BMC Application Accelerator for IMS uses the first policy that matches the job step.

The **Add Like** button is also convenient when you want to see if a policy with the required values already exists, and create one if not.

- To add a new policy without using filter values, click the **Add** button.

3 In the Add/Edit Policy dialog, specify values for the selection fields, and specify the action to take when the policy applies to a job step.

---

**TIP**

For most of the selection fields, you can specify wildcard (masking) characters to create generic policies. For more information and examples, see the online Help.

---

4 Click **OK** to store your changes in the Policies table, or click **Cancel** to abandon your changes.

**To add a policy by using the recommended jobs list**

1 In the Manage Policy window, click the Policy tab if it is not already displayed.

2 Click **Recommend Jobs**.

3 In the Recommended Jobs dialog, select a displayed job step.

---

**NOTE**

Application Accelerator must monitor and capture statistics for a job for a specified minimum number of runs before it can list the job in this dialog. The job steps that will provide the best resource savings when optimized are listed at the top.

---

4 Click **Create Optimize Policy** to create a policy that is based on the selected job step.

The **Action** field in the new policy is set to **Optimize**.
Rearranging the Policies table

The Policies table lists the policies in the order that Application Accelerator will apply them. Application Accelerator attempts to match an eligible application job or step with these specifications, starting with the first policy in the list and continuing down the list until a policy matches. The first match determines the action that Application Accelerator will perform for the job or step. For this reason, specific policies will precede generic policies in the Policies table. You can change the order of the policies in the table.

**To rearrange the Policies table**

1. In the Manage Policy window, click the Policy tab if it is not already displayed.
2. Select a policy by clicking the corresponding row in the Policies table.
3. Click **Move Up** or **Move Down** as needed to reposition the row in the table.

   **NOTE**
   
   You cannot move specific policies (those that contain all literal characters) below generic policies (those that contain one or more wildcard characters.)

4. Click **Save** to store your changes in the repository.

   **TIP**
   
   To abandon your changes, close the Manage Policies window without saving.

Filtering displayed policies

You can use the Policy Display Filter (in the upper portion of the Policy tab) to limit the displayed policies to those that match a specified filter. Policies that do not match are still present in the Policies table, and still apply during Application Accelerator processing. The filter can make it easier for you to maintain the order of policies when the table contains a large number of policies.

**To filter displayed policies in the Policies table**

1. On the Policy tab, click **Add Like**.
2. Enter a values in a field in the Policies Display Filter table.
Adding policies to the Exclude table

As you enter a value in a field, the value immediately takes effect to limit the records displayed in the Policies table. Any policies that do not match this value are hidden until this field is cleared.

3 Click OK to apply the specified filters.

---

**TIP**

You can remove a filter and display all policies in the Policies table by clicking Clear.

---

**Adding policies to the Exclude table**

The Exclude table (in the Exclude tab of the Manage Policy window) defines the policies that Application Accelerator uses when determining whether to exclude an eligible job and bypass further processing of that job. The Exclude table’s policies apply before Application Accelerator determines whether to monitor, optimize, or ignore eligible IMS batch application jobs and steps, based on the entries in the Policy tab.

Exclude policies are never generic; the job name or PSB name field cannot contain wildcard characters. However, you can specify an IBM MVSTM ID to exclude a job whenever it runs on the specified system. If you omit the MVS ID, the job is always excluded, regardless of the system on which the job is running.

Use the following procedure to add an exclusion policy. You can specify a maximum of 100 exclusion policies.

**To add an exclusion policy**

1 In the Manage Policy window, click the Exclude tab if it is not already displayed.

2 Click Add.

3 In the Add Exclude Policy dialog, specify values for the selection fields.

4 Click OK to add the policy to the Exclude List.
Exporting policy information

You can export the policy information in your Include and Exclude tables to an external file on your personal computer.

To export policy information

1. In the Manage Policies window, click the Export button to display the Export Data dialog.
2. In the Select File Type field, select csv to insert commas between fields in the exported information, or txt to insert tabs.
3. In the File Name field, specify the name of the file to contain the exported information.
4. Click Browse and navigate to the folder where you want to store the exported information.
5. Click Export to write the information to the specified file and folder.

Managing policies through the CPCBATCH utility

You can use the CPCBATCH utility to manage Application Accelerator policies through a batch job. This utility works with the Cross Product Connectivity (CPC) subsystem and repositories.

To use the CPCBATCH utility

1. Identify the tasks that you want to accomplish with the utility, and the functions to specify.
   
   For more information, see “Adding or changing policies with the CPCBATCH utility” on page 65.

2. Create JCL to execute the utility.
   
   For more information, see “CPCBATCH JCL requirements for policies” on page 68.

3. Specify control statements in the CPSCSYIN data set.
   
   For more information, see “CPCSYSIN control statements” on page 69.
Adding or changing policies with the CPCBATCH utility

You can use the CPCBATCH utility to perform the following tasks:

- Implement policies in a new repository
- Change existing policies in a repository
- Test effects of policies

To implement policies in a new repository

1. Create a sequential data set (also known as a flat file), and specify policy records in this data set.

   For more information, see “Sequential data set for the EXPORT and IMPORT functions” on page 71.

2. Use the IMPORT function to import the records from the sequential data set to the repository.

   For more information, see “Importing policies” on page 67.

3. Use the REFRESH function to activate the new policies for Application Accelerator use.

   For more information, see “Refreshing policies” on page 67.

To change existing policies in a repository

1. Use the EXPORT function to export policies from the repository to a sequential data set.

   For more information, see “Exporting policies” on page 67.
2 Edit the policies as needed.
   For more information, see “Sequential data set for the EXPORT and IMPORT functions” on page 71.

3 Use the IMPORT function to import the edited policies.
   For more information, see “Importing policies” on page 67.

4 Use the REFRESH function to activate the new policies for Application Accelerator use.
   For more information, see “Refreshing policies” on page 67.

To test effects of policies

1 Use the EVALUATE function to evaluate existing policies and determine the action that Application Accelerator will take for a specific application job.
   For more information, see “Evaluating policies” on page 68.

2 View the results of the evaluation in the CPCLOG data set.
   For more information, see “Results of the EVALUATE function” on page 74.

CPCBATCH functions for the POLICIES command

To work with Application Accelerator policies, you specify the following CPCBATCH utility functions by using the POLICIES command:

- EXPORT
- IMPORT
- REFRESH
- EVALUATE
### Exporting policies

The EXPORT function exports existing policy records from the repository to a sequential data set. The data set can be an existing data set, or the utility can allocate a new data set.

**EXAMPLE**
The following CPCSYSIN statement exports all policies from the repository to a data set that is named MY.POLICIES.FILE:

```
POLICIES RUNTYPE(EXPORT) DSN(MY.POLICIES.FILE)
```

### Importing policies

The IMPORT function imports policy records from an existing sequential data set to the repository.

**WARNING**
The IMPORT function deletes all existing policies in the repository before importing the set of policies from the sequential data set. If the repository contains existing policies that you want to keep, export the policies to the sequential data set, and make changes to that set of exported policies.

**EXAMPLE**
The following CPCSYSIN statement deletes all existing policies from the repository and imports the policies from a data set that is named MY.NEW.POLICIES.FILE to the repository:

```
POLICIES RUNTYPE(IMPORT) DSN(MY.NEW.POLICIES.FILE)
```

### Refreshing policies

The REFRESH function activates a set of newly imported policies in the repository so that Application Accelerator can use them.

**EXAMPLE**
The following CPCSYSIN statement refreshes the policies:

```
POLICIES RUNTYPE(REFRESH)
```
**NOTE**

Newly imported policies do not take effect until you run the REFRESH function or until the CPC subsystem is restarted.

---

**Evaluating policies**

Use the EVALUATE function to test a set of policies to determine the action (optimize, monitor, or ignore) that Application Accelerator will perform for a specified application job. The CPCBATCH utility writes the results to the CPCLOG data set.

**NOTE**

The EVALUATE function does not consider the effect of Exclude policies when determining the action.

---

EVALUATE can be useful when you are testing policies to ensure that they perform as expected, or to determine whether a problem exists.

---

**EXAMPLE**

You need to determine the action that Application Accelerator will take for an application job that:

- Executes with job name TESTJOB1
- Uses a program specification block (PSB) named PSB01
- Executes program TESTPGM1
- Executes in an IMS system that has IMS identifier IMSA
- Executes in a z/OS system that has z/OS identifier SYSX

Specify the following CPCSYSIN statement:

```
POLICIES RUNTYPE(EVALUATE) JOBNAME(TESTJOB1) PSB(PSB01) - 
PROGNAME(TESTPGM1) IMS(IMSA) MVSID(SYSX)
```

---

**CPCBATCH JCL requirements for policies**

The following JCL statements are valid when you specify the POLICIES command for the CPCBATCH utility:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXEC</td>
<td><em>(required)</em> Specify PGM=CPCBATCH.</td>
</tr>
<tr>
<td>STEPLIB DD</td>
<td><em>(required)</em> Identify the library that contains the CPC load modules.</td>
</tr>
</tbody>
</table>
The following example job shows a CPCBATCH job that specifies policies for Application Accelerator:

```
//CPCBATCH JOB ...
//POLICIES EXEC PGM=CPCBATCH,REGION=region
//STEPLIB DD DISP=SHR,DSN=cpcOptionsLibrary
// DD DISP=SHR,DSN=bmcLoadLibrary
//CPCLOG DD SYSOUT=* 
//PCYEXPT DD DISP=SHR,DSN=yourPolicyExportDsn
//CPCSYSIN DD *
POLICIES -
RUNTYPE(EXPORT) -
DDN(PLCYEXPT) /*
```

### CPCSYSIN control statements

The CPCSYSIN control statement data set contains 80-character fixed-length records that control the actions of the CPCBATCH utility.

### CPCSYSIN syntax

In the CPCSYSIN data set, you can specify control statements by using the following syntax elements:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commands</td>
<td>The control statement must begin with a valid command. A command can have keywords and comments, separated where necessary with separators and continuation characters (if statements continue to the next line). A separator must follow a command. You can enter commands anywhere in positions 1 through 72 of the input statement; positions 73 through 80 are ignored.</td>
</tr>
<tr>
<td>Keywords</td>
<td>Keywords follow a command and invoke options. All keywords are non-positional. You specify a keyword with a value following it in parentheses. The keyword value can be any character string up to 255 characters. All alphanumeric and special characters are allowed.</td>
</tr>
</tbody>
</table>
CPCSYSIN control statements

CPCSYSIN keywords for the POLICIES command

To specify policies for Application Accelerator, you specify the POLICIES command. The following keywords are valid with the POLICIES command:

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted Values</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUNTYPE</td>
<td>EXPORT IMPORT</td>
<td>None</td>
<td><em>(required for all functions)</em> Specify the function for the CPCBATCH utility to perform.</td>
</tr>
<tr>
<td></td>
<td>REFRESH EVALUATE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DDNAME (or DDN)</td>
<td>ddname</td>
<td>None</td>
<td><em>(valid for EXPORT and IMPORT functions)</em> If a DD statement in the utility JCL identifies a file that will contain exported data or that contains the data to import, specify this keyword to identify the ddname of that statement. If you specify this keyword, do not specify the DSNAME keyword.</td>
</tr>
<tr>
<td>DSNAME (or DSN)</td>
<td>Data set name</td>
<td>None</td>
<td><em>(valid for EXPORT and IMPORT functions)</em> If no DD statement in the utility JCL identifies a file that will contain exported data or that contains the data to import, specify this keyword to identify the data set name of the file. If you specify this keyword, do not specify the DDNAME keyword. For the EXPORT function, the CPCBATCH utility will create the data set if it does not already exist. For the IMPORT function, the data set must exist before you execute the CPCBATCH utility.</td>
</tr>
<tr>
<td>JOBNAME</td>
<td>Job name</td>
<td>None</td>
<td><em>(valid for EVALUATE functions)</em> Specify the job name of the application job to evaluate.</td>
</tr>
</tbody>
</table>
You can edit the sequential data set that contains data for the EXPORT and IMPORT functions to change, add, or remove policies.

In the following example, a sequential data set is open for editing in the ISPF Edit panel. The COLS ON command displays a column counter that can help with data entry.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted Values</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSB</td>
<td>PSB name</td>
<td>None</td>
<td><em>(valid for EVALUATE functions)</em> Specify the program specification block (PSB) name that is associated with the application job to evaluate.</td>
</tr>
<tr>
<td>PROGNAME</td>
<td>Program name</td>
<td>None</td>
<td><em>(valid for EVALUATE functions)</em> Specify the program name of the application job to evaluate.</td>
</tr>
<tr>
<td>IMS</td>
<td>IMSID</td>
<td>None</td>
<td><em>(valid for EVALUATE functions)</em> Specify the IMS identifier of the IMS system that is associated with the application job to evaluate.</td>
</tr>
<tr>
<td>MVSID</td>
<td>System ID</td>
<td>None</td>
<td><em>(valid for EVALUATE functions)</em> Specify the system identifier of the z/OS system that is associated with the application job to evaluate.</td>
</tr>
</tbody>
</table>

**Sequential data set for the EXPORT and IMPORT functions**

Application Accelerator applies the policies in the order that they are specified in the data set. If the order is incorrect, the wrong policy might be applied to an application job. Specific policies should precede generic policies (those that contain wildcard characters).
Format of the sequential data set

The sequential data set has a logical record length (LRECL) of 80 bytes. When the CPCBATCH utility creates the data set, the data set has a fixed-blocked (FB) format with a half-track block size.

Fields in policy records

Each policy record in the sequential data set contains the following fields:

<table>
<thead>
<tr>
<th>Columns</th>
<th>Field</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Policy Type</td>
<td>Specify the type of policy as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- E specifies an exclude policy, which causes Application Accelerator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to bypass processing for a matching job. The following fields apply</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in an exclude policy and should be the only fields that are specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>when the Policy Type field contains E:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Job Name or PSB Name (depending on an Application Accelerator default</td>
</tr>
<tr>
<td></td>
<td></td>
<td>value)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MVSID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- I specifies an include policy, which causes Application Accelerator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to continue processing for a matching job. All fields apply to an</td>
</tr>
<tr>
<td></td>
<td></td>
<td>include policy.</td>
</tr>
<tr>
<td>3 through 10</td>
<td>Job Name</td>
<td>Specify the name of the application job, as specified with the JOB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>statement in the JCL for executing the application.</td>
</tr>
<tr>
<td>12 through 19</td>
<td>PSB Name</td>
<td>Specify the name of the program specification block (PSB) that the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>application uses to access IMS resources.</td>
</tr>
<tr>
<td>21 through 28</td>
<td>Program Name</td>
<td>Specify the name of the application program, as specified with the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PGM parameter of the EXEC statement in the JCL for executing the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>application.</td>
</tr>
<tr>
<td>30 through 37</td>
<td>IMSID</td>
<td>Specify the IMS identifier to identify the IMS system that is specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in the EXEC parameter of the application JCL or in the IMS control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>blocks that are used in the eligible job step.</td>
</tr>
</tbody>
</table>
Specific and generic values

To identify a specific value for a job characteristic, such as the job name or IMS system, specify the complete name or identifier.

--- EXAMPLE ---
Specify ACCTUPDT if you want the policy to apply only when the ACCTUPDT job is running.

To identify a generic value for a job characteristic, so that the value applies to any name or identifier that matches a pattern, specify wildcard characters as follows:

- Specify a percent sign (%) in any position to represent a single-character wildcard.

--- EXAMPLE ---
Specify ACCT%%1 if you want the policy to apply when the ACCTABC1 or ACCTDEF1 job is running, but not when the REPTABC1 or ACCTABC2 job is running.

- Specify an asterisk (*) as the last non-blank character to represent a multiple-character wildcard for the remainder of the ID.

--- EXAMPLE ---
Specify ACCT* if you want the policy to apply when a job whose name starts with the string ACCT is running.

You can specify both % and * in the same value.
For the MVSID value in an include policy or exclude policy, you can specify a complete value, or leave the value blank to match all z/OS systems. No wildcard characters are permitted.

For the job name or PSB name value in an exclude policy, you must specify a complete name; no wildcard characters are permitted.

**Results of the EVALUATE function**

The EVALUATE function determines the effects of policies on specified application jobs, and writes the resulting information to the CPCLOG data set. The following example shows how Application Accelerator will handle selected application jobs:

- Optimize job AAITEST1
- Monitor job AAITEST2
- Ignore job AAITEST3
- Do not participate in job AAITEST4, because no policy applies to the job

```
02/28/2013          C P C   M E S S A G E   L O G               PAGE 1
12:34:56.59  LOG START
12:34:56.58  BMC251831I Client=RXCEVAL1(JOB09623) logged on to CPC (RXCN)
12:34:56.60  POLICIES COMMAND PROCESSING STARTED
12:34:56.60  KEYWORD     VALUE SPECIFIED
12:34:56.60  RUNTYPE     EVALUATE
12:34:56.60  JOBNAME     AAITEST1
12:34:56.60  PROGNAME    DFSDDLT0
12:34:56.60  PSB         PSB01
12:34:56.60  IMS         BMC1
12:34:56.60  MVSID       SYSP
12:34:56.60  ** END OF KEYWORDS **
12:34:56.61  POLICY ACTION = OPTIMIZE, POLICY MATCHED = POL00003
12:34:56.61  POLICIES COMMAND PROCESSING COMPLETED SUCCESSFULLY
12:34:56.61  POLICIES COMMAND PROCESSING STARTED
12:34:56.61  KEYWORD     VALUE SPECIFIED
12:34:56.61  RUNTYPE     EVALUATE
12:34:56.61  JOBNAME     AAITEST2
12:34:56.61  PROGNAME    DFSDDLT0
12:34:56.61  PSB         PSB01
12:34:56.61  IMS         BMC1
12:34:56.61  MVSID       SYSP
12:34:56.61  ** END OF KEYWORDS **
12:34:56.62  POLICY ACTION = MONITOR, POLICY MATCHED = POL00002
12:34:56.62  POLICIES COMMAND PROCESSING COMPLETED SUCCESSFULLY
```
Evaluating Application Accelerator results

In production mode, you can evaluate the results of Application Accelerator activities as follows:

- You can use the console’s Resource Savings window to view overall and individual savings.
  
  For more information, see “Viewing information about resource savings” on page 76.

- In the Job Step History window, you can view statistical information that Application Accelerator has collected about a selected job step over a selected period of time.
  
  For more information, see “Viewing job step history information” on page 77.

- For job step status information specific to batch message processing (BMP) applications, you can view the Job Status window on the console.
  
  For more information, see “Viewing job step history information” on page 77.

- You can generate batch reports that contain the same information as the Resource Savings window and the Job Status window.
For more information, see “Generating a batch report” on page 78.

- You can evaluate results manually by comparing the job step’s statistics when executed with Application Accelerator and without Application Accelerator.

### Viewing information about resource savings

After Application Accelerator optimizes one or more job steps in production mode, you can view information about the resources that were saved through optimization, such as:

- Total CPU service units and elapsed seconds saved
- CPU service units and elapsed seconds saved during individual executions

You can view this information in the Resource Savings window on the console:

- The upper portion of the window reports overall results for all optimized job steps.
- The lower portion displays results for each optimized job step.

You can view this information in the Resource Savings window on the console.

#### To view resource-savings information on the console

1. In the Navigation window, right-click the **IMS Applications** object.

2. Select **Resource Savings**.

3. If you want to limit the report to a specified job (or jobs), enter a job name in the pop-up dialog.

   You can use wildcard characters to specify a generic (masked) name. Use % to match any character in the specified position. Use * to match any characters from the specified position through the end of the name.

4. View the information in the Resource Savings window.

   **TIP**

   You can export the statistics to an external file by clicking the **Export** button. You can also view detailed status information about BMP job steps by clicking the **Job Status** button.
Viewing job step history information

You can view statistical information that Application Accelerator has collected while monitoring or optimizing IMS batch application job steps over time. This information can help you evaluate actual and potential optimization efforts for the job step.

To view job step history information

1. In the Resource Savings window, select the job step of interest.

   For more information, see “Viewing information about resource savings” on page 76.

2. Click Show History.

3. In the Show Job Step History pop-up, select one of the following options to display job step information:
   - Detail displays detailed statistics.
   - Monthly displays monthly average statistics.
   - Yearly displays yearly average statistics.

   The information is displayed in the Job Step History window.

   **Tip**

   You can view the information in table format or in various chart formats by selecting the corresponding tab at the top of the window. You can also export the statistics to an external file by clicking the Export button.

Viewing job step status information about BMPs

You can view information about the actions that Application Accelerator took for eligible BMP applications. This information can help you understand why Application Accelerator handled BMP job steps as it did.

To view job step status information about BMPs

1. In the Navigation window, right-click the IMS Applications object.

2. Select Job Status.
3 If you want to limit the report to a specified job (or jobs), enter a job name in the Job Status pop-up.

You can use wildcard characters to specify a generic (masked) name. Use % to match any character in the specified position. Use * to match any characters from the specified position through the end of the name.

The information is displayed in the Job Status window.

---

**Tip**

You can export the statistics to an external file by clicking the Export button.

4 For more information, select a job step, and click the Details button.

The Detail Job Status window is displayed. You can also access this window from the Resource Savings window.

---

**Generating a batch report**

You can generate a batch report to view the overall and individual results of using Application Accelerator to optimize eligible job steps. You request the batch report through the console. Application Accelerator generates the report and writes it to the specified mainframe data set.

**To generate batch reports**

1 In the Navigation window, right-click the IMS Applications object.


Application Accelerator submits a batch job to generate the report. When the job completes successfully, Application Accelerator issues message BMCMXO340683I, which indicates the name of the mainframe data set that contains the report. The information is displayed in the BMC Application Accelerator for IMS Savings History window.

---

**Tip**

If you want to access a previously generated report without regenerating it, select Batch Reports => View Batch Report, and enter the name of the data set that contains the report.

You can export the report to an external file by clicking the Export button.
Troubleshooting problems in production mode

If a problem occurs while you are using Application Accelerator in production mode, check the following topics for troubleshooting tips.

Preventing Application Accelerator participation

When Application Accelerator is implemented in production mode, the CPC subsystem screens IMS batch applications and passes control to Application Accelerator to participate when an application is eligible. You can use the following methods if you need to prevent Application Accelerator participation:

- Specify an exclude policy.
  
  This technique prevents Application Accelerator from participating in an entire job. For more information, see “Managing policies through the console” on page 59 or “Managing policies through the CPCBATCH utility” on page 64.

- Specify the IBOIGNOR DD DUMMY statement in the JCL for executing a job step.
  
  This technique is useful when you want to prevent Application Accelerator from optimizing a specific job step, while allowing optimizing in other steps in that job.

The IBOIGNOR statement prevents Application Accelerator from:

- Optimizing the current execution of this job step
- Recommending optimization for the next execution

If you remove this DD statement from a subsequent job step execution, Application Accelerator does not optimize that execution but considers recommending optimization for subsequent executions. Monitoring continues to occur.

Obtaining diagnostic trace information

If a problem is occurring, BMC Customer Support might ask you to add the following DD statements to your application job steps to produce diagnostic trace information. Specify the standard SYSOUT parameter in your environment.
Using production mode without screening application jobs

In some cases, you might want to use Application Accelerator in production mode without screening service requests (SVCs) to determine whether they are eligible for processing. (In this approach, the job step will technically use a hybrid of trial mode and production mode.) For example, you might want to suspend screening in the following cases:

- A problem is occurring with SVC screening.
- IMS batch applications are not executing with PGM=DFSRRC00 on the EXEC card in their job steps JCL.
- You do not want to use SVC screening for other reasons pertaining to systems operations.

You can disable SVC screening and still use Application Accelerator in production mode. You do so by using the IBO#cpcID DD statement to identify a CPC subsystem to use for an application job step. The last four characters of the DD name provide the subsystem identifier (cpcID) of the CPC subsystem that you want to use.

When you use the IBO#cpcID DD statement, the job step technically is using Application Accelerator in a hybrid of trial and production modes.

**NOTE**

When the IBO#cpcID statement is included, Application Accelerator automatically considers the job step as *Included* in Phase 1 of the process that determines the action to perform for the job step. Phase 2 proceeds, using the policies from the cpcID repositories.

**To use production mode without SVC screening**

1. In the JCL (or JCL procedure) for executing the application job step, add the IBO#cpcID DUMMY statement.

2. If needed, remove the $IBO$VSM DD statement.
Chapter 4 Using Application Accelerator in production mode

Using a different set of CPC repositories

In some cases, you might want to use repositories other than those that are associated with the CPC subsystem that is currently screening executing jobs for Application Accelerator. (In this approach, the job step will technically use a hybrid of trial mode and production mode.) For example, you might want to use different repositories in the following cases:

- You are testing a new level of Application Accelerator components.
- You want to use a set of policies that are different from the production set.

You can designate a different CPC subsystem to manage Application Accelerator data. You do so by using the IBO#cpcID DD statement to identify that CPC subsystem. The last four characters of the DD name provide the subsystem identifier (cpcID) of the CPC subsystem that you want to use.

**NOTE**

When the IBO#cpcID statement is included, Application Accelerator automatically considers the job step as *Included* in Phase 1 of the process that determines the action to perform for the job step. Phase 2 proceeds, using the policies from the cpcID repositories.

When you use the IBO#cpcID DD statement, the job step technically is using Application Accelerator in a hybrid of trial and production modes.

**To use a different set of CPC repositories**

1. In the JCL (or JCL procedure) for executing the application job step, add the IBO#cpcID DUMMY statement.

2. If needed, remove the $IBO$VSM DD statement.
Correcting problems with dimmed console items

Console items (such as menu selections, buttons, and commands) are dimmed when they are present in the interface but not accessible, given current conditions.

An item can appear dimmed (gray or lighter than other items) if any of the following conditions exist:

- You do not have the Security Access Facility (SAF) authority to use the item. For example, to manage policies and defaults for Application Accelerator, your user ID must have SAF update authority for resource FACILITY BBM.SDBA.IMSAA.*.AAS.

  To access the item, ask your security administrator to provide the correct authority. For more information about defining SAF resources for Application Accelerator, see the BMC Database Products for IMS Configuration Guide.

- The item does not apply to the selected object, or the focus is on a window in which the item does not apply. To access the item, try selecting a different object or window.

### NOTE

The $IBO$VSM DD statement identifies a trial-mode repository for Application Accelerator. If the JCL includes the $IBO$VSM DD statement, the IBO#cpcID statement is ignored.
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