BMC Application Accelerator for IMS™
User Guide

Supporting
Version 1.0 of BMC Application Accelerator for IMS

March 2013
Contacting BMC Software

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- find the most current information about BMC products
- 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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In the United States and Canada, if you need technical support and do not have access to the web, call 1 800 537 1813 or send an e-mail message to customer_support@bmc.com. (In the subject line, enter SupID:<yourSupportContractID>, such as SupID:12345). Outside the United States and Canada, contact your local support center for assistance.

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 BMC Application Accelerator product for the IBM® IMS™ environment. This book is intended for IMS system administrators, IMS database administrators (DBAs), IMS application developers, IBM z/OS® systems programmers, z/OS operations teams, and others who implement and use the product.

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.

NOTE

Online books are formatted as PDF or HTML files. To view, print, or copy PDF books, use the free Adobe Reader from Adobe Systems. If your product installation does not install the reader, you can obtain the reader at http://www.adobe.com.

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 use either of the following methods to access related publications that support your product or solution:

- Link to the BMC Documentation Center (https://webapps.bmc.com/infocenter/index.jsp) to browse documentation sets
- View BMC Quick Course Demos (short overviews of selected product concepts, tasks, or features), which are included in the BMC Documentation Center
- Read 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:
  
  `testsys/instance/fileName`

- The symbol `=>` connects items in a menu sequence. For example, `Actions => Create Test` instructs you to choose 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 italic 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>&lt;br&gt;<code>databaseDirectory</code>&lt;br&gt;<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>&lt;br&gt;<code>[-full, -incremental, -level]</code> (UNIX)</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>Item</td>
<td>Example</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>----------------------------------------------</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.

**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, 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 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.
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 $IBOVSM 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.

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 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 Accelerate operates in you 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.
SAF 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 Application Accelerator 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:

- DLI
- DBB

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

In addition to the topics in this guide and other associated guides and manuals, the following information and support are available for Application Accelerator:

- 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

- Application Accelerator can issue error, warning, and informational messages during execution of your IMS batch applications. The CPC subsystem and affiliated subsystems and servers can issue messages to your system console. For explanations of and user responses to 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. Expert help is always on call. You can speak directly with a support specialist who has years of experience with IMS. You can e-mail Customer Support, and 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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Overview of 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). 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=  
//$IBO$VSM DD DISP=SHR,DSN=BMCIBO.TRIAL.$IBO$VSM  
//SYSUDUMP DD SYSOUT=*  
//IBOTRACE DD SYSOUT=*  
//BMCPRINT DD SYSOUT=*  
//BMCSYSIN 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)
```
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>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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. 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>
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.
In the Application Accelerator sample library, member IBMATCH 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=DFSRRRC00,PARM='DLI,DFSDDLTO,HIDALL02,........,N',
   // REGION=5120K
//STEPLIB DD DSN=&hlq.LOAD,DISP=SHR
   // DD DSN=&hlq.IMLIB,DISP=SHR
   // DD DSN=&hlq.PASSWORD,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=SH
//*
//HID000D2 DD DSN=DBS.TEST.HID00002.HID000D2,DISP=SHR
//HIDIDX2 DD DSN=DBS.TEST.HIDIDX02.HIDIDX2,DISP=SHR
//HIDIXD2 DD DSN=DBS.TEST.HIDIX02.HIDIXD2,DISP=SHR
//HIDIXD3 DD DSN=DBS.TEST.HIDIX03.HIDIXD3,DISP=SHR
//IEFRDER DD DSN=&LOG,DISP=(NEW,PASS),UNIT=SYSDA,
   // SPACE=(TRK,(1,1))
//*
//PRINTDD DD SYSOUT=* 
//SYSDUMP 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 11 HID00002
L 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 still occurs.

## 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 people 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 IEAAPFn 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 might need to 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 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:

```verbatim
//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=* 
//BMCSYSIN 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)
```

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.
3. Specify the name of your repository data set.
Reproducing the trial-mode repository for troubleshooting

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.

```bash
//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,BLKSIZE=32008),
//      SPACE=(CYL,(10,10),RLSE)
//SYSIN DD *
   REPRO INFILE(INDD) OUTFILE(OUTDD)
```
Transitioning from trial to production mode

When you are ready to transition from trial mode to production mode, implement production-mode components as described in Chapter 3, “Preparing to use production-mode components.” Then define required production-mode values and policies as described in Chapter 4, “Using Application Accelerator in production mode.”

To test or phase in the use of the CPC subsystem and repositories, you can 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 79 and “Using a different set of CPC repositories” on page 80.
Transitioning from trial to production mode
Preparing to use production-mode components

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

**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 37 and “Launching and exiting the console” on page 40. Use of the console is intuitive, especially if you are already familiar with standard Windows-based applications.

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  Installing the console ........................................................................ 37
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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.

Figure 1  Production-mode components

- 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.

- 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.

**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*.  

---

*BMC Application Accelerator for IMS User Guide*
Configuring the console

When the UIM server is installed and running, you can install, configure, and update the console. The UIM server contains the code for the console and downloads it to the console computer. Depending on the type of user privileges that are set on the console computer, you can install only one instance of the console for your use, or if you have administrator rights, you can install one instance of the console that can be shared by all users on the console computer.

User requirements

The console is installed once on each machine. If the console is installed on a computer on which you have administrator privileges, tracing and logging are fully supported and the console can be shared by all users.

If the console is installed on a machine on which you do not have administrator privileges, tracing and logging may not work. However, each non-administrator user can install a console for their use on the machine.

<table>
<thead>
<tr>
<th>Privilege type</th>
<th>Type of installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>administrator</td>
<td>Install one console</td>
</tr>
<tr>
<td></td>
<td>The default location is C:\Program Files\BMC Software\Database Management Console.</td>
</tr>
<tr>
<td>non-administrator</td>
<td>Every user can install one console</td>
</tr>
<tr>
<td></td>
<td>The default location is C:\Documents and Settings\user\My Documents\BMC Software\Database Management Console.</td>
</tr>
</tbody>
</table>

Installing the console

To install the console on your personal computer, connect to the UIM server through a supported web browser.

To install the console

1. From a supported web browser, enter the URL for the UIM server on the mainframe.

   For example: http://uimServerHostName:uimPortNumber/dna/index.html
The variables in the URL are defined as follows:

- `uimServerHostName` is the name of the host computer on which the UIM server is running.

- `uimPortNumber` is the port number that is assigned to the UIM server.

To determine which host name and port number are used for the server, contact your system administrator.

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

3. Based on the browser that you are using, you must 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**.
     
        Depending on your Internet Explorer security settings, the Security Warning dialog box is displayed.
     
     B. Click **Yes**.

   - If you are using Netscape Navigator or Mozilla Firefox, 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 save location, and double-click the file.


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

6. Click **Finish**.

   The BMC Database Management Console is started.
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.

**NOTE**

If the console installer on the UIM server is updated, you will have to enter the URL for the UIM server on the mainframe to update the console. See “Installing the console” on page 37 for more information on installing the console.

Uninstalling the console

Uninstall the console from your personal computer by using the Windows Control Panel.

**To uninstall the console by using the Windows Control Panel**

To uninstall the console, perform the following steps:

1. From your Windows desktop, navigate to the Control Panel.

2. From the Control Panel window, navigate to Add/Remove Programs.

3. Select and remove **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.

   The uninstall removes the console files for the BMC Database Management Console.
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, choose Programs => BMC Software => Database Management Console.

   The BMC Database Management Console login dialog box (Figure 2 on page 40) is displayed.

2. Select the Host.

   **Tip**
   You can manage the Host list by clicking the button next to the Host list. See “Managing UIM server clients” on page 41 for more information on managing server clients.

3. Enter your User ID and Password.

4. *(Optional)* Enter your group and account information.
5 Click OK.

To exit the console

1 From the File menu, select Exit.

The Quit? dialog box is displayed.

2 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, choose Programs => BMC Software => Database Management Console.

The BMC Database Management Console login dialog box (Figure 2 on page 40) is displayed.

2 Click the more (...) button next to the Host list.

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

Figure 3 Manage UIM Server Clients dialog box
On the Manage UIM Server Clients dialog box, you can perform the following tasks:

- add a host
- edit a host
- delete a host
- select the default host that is displayed on the BMC Database Management Console login dialog box by selecting the default check box next to the host
Using the console

The console (Figure 4) is a Windows application with which you can manage BMC Software products that are console-enabled through a single interface.

Figure 4  Console

The console interface comprises the following windows:

- Navigation window
- Messages window
Navigation window

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

- **Main** tab

  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 on an object in the tree.

- **Tasks** tab

  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 the 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 graphically illustrate the severity of a message. Table 4 describes the message icons.

**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 may interfere with system or product processes</td>
</tr>
<tr>
<td>🚨</td>
<td>error</td>
<td>critical problem that may interfere with system or product processes</td>
</tr>
</tbody>
</table>
Navigating the console

In addition to the Navigation window and the Messages window, the console contains the following components:

- work area
- windows in the work area
- pop-up menus

**Work area**

The work area is where you work with data sources or console tools. It has a blue background. Any window that you open is displayed in this area. Windows that are opened in the work area remain inside the work area.

**Windows in the work area**

Product information in table format is displayed in windows in the work area. You can change how the information is displayed by sorting on columns. You can also select discontinuous rows of information.

To close a window, click the close window icon.

---

**Tip**

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

---

**To sort columns**

To sort on a column, click the column heading.

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

**To select rows**

To select rows, perform one of the following steps:

- To select contiguous rows, click anywhere within the row and drag the mouse over the rows.

- To select noncontiguous rows, press **CTRL** while selecting the row.
Pop-up menus

Many commands are available by right-clicking on an object in the Navigation window and choosing the command from the pop-up menu. These menu commands are also available from the Action menu on the console toolbar.

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. Once you define a host connection, you can work with resources on that host. When you define a host connection, the connection definition remains available each time that you start the console and log in. The names of all defined connections are listed in the Connections folder on the Main tab of the Navigation window.

Enterprise List and personal list of 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 a user launches the console, the Enterprise List is accessed to identify the host connections that are defined.

Each user has a personal list of connections. The user can define a connection in the personal list manually by entering connection information (such as the host name and port number). Or, if a connection has been predefined in the shared Enterprise List, the user can add a connection by selecting it from that shared list. After a host connection is defined in the personal list, that connection definition remains available each time that the user starts the console and logs on.
Managing the Enterprise List

The shared Enterprise List is a list of connections and their definitions that is found on the UIM server. The Enterprise List is available to all users of the console. You can add, edit, and delete the connection information that is stored in the shared Enterprise List.

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.

To add a connection, perform the following actions:

   A. Click Add.

   B. Enter the connection information in the Details area.

   C. Click Done.

2. To edit a connection, perform the following actions:

   A. Select the connection and click Edit.

   B. Change the information for the connection in the Details area.

   C. Click Done.

3. To delete a connection from the shared Enterprise List, perform the following actions:

   A. Select the connection

   B. Click Delete.

   The connection is deleted from the list.

4. Click OK to apply your changes to the shared Enterprise list and close the dialog box.
Defining and connecting to hosts

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.

The online Help describes connection procedures in more detail.

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 Display Name 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 to connect 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 an account and group that the user name belongs to.

6. (Optional) To connect automatically whenever the console is started, select the Autoconnect at console start.

7. Click OK.

   The new host connection definition 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 definition and click Connect.

The Connect dialog box is displayed with the connection information for the selected host.

2 In the Login Information area, select whether to connect by using console credentials or to connect 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 an account and group that the user name belongs to.

3 (Optional) To connect automatically whenever the console is started, select the Autoconnect at console start.

4 Click OK.

A connection is made to the host.

Using a global connections list

You can use the BBM.SDBA.DNA.ECL SAF resource to configure the console to use a common global connections list. When you use the global connections list, you define users as having write access or read access:

- users with write access

  The console is mostly unchanged for users with write access except the Save Password and Autoconnect at console start check boxes are disabled in the following dialogs:

  — Connect
  — Define Connection
  — Edit Connection

- users with read access
The following console items are removed or disabled for users with read access:

— all menus for creating, editing, and deleting connections
— all menus related to the Enterprise List
— all menus for adding a DB2 subsystem

**To define a global connections list**

Add the following rule to your SAF resource definitions:

```xml
<rule name="SDBA_DNA_EDIT_CONNECTION_LIST"
     resource="BBM.SDBA.DNA.ECL"
     class="FACILITY"/>
```
Chapter 4  Using Application Accelerator in production mode

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

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   Policies .................................................. 53
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   Setting default and site values in the Setup Wizard ....... 55
   Setting default values in the Manage Defaults window .... 55
   Setting site values in the Maintain Parameters window .... 56
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Overview of 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 52.

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 53.

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 77.

4. If needed, troubleshoot problems.

   For more information, see “Troubleshooting problems in production mode” on page 78.

**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 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 54
- “Setting default values with the IBOINIT utility” on page 57

**Policies**

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 characteristics such as the job name or PSB name. You create entries in the repository to define Include policies and Exclude policies.
Setting default and site values in the console

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**—Application Accelerator uses the Exclude table, along with the job names or PSB names and z/OS System IDs that are specified in the Policies table, to build 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, it 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 62
- “Managing policies through the CPCBATCH utility” on page 66

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 approaches:

- “Setting default and site values in the Setup Wizard” on page 55
- “Setting default values in the Manage Defaults window” on page 55
- “Setting site values in the Maintain Parameters window” on page 56
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

You can use the Manage Defaults window to set and change your Application Accelerator default values through the console.

**NOTE**
The parameters in 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

You can 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 through the console, see “Setting default and site values in the Setup Wizard” on page 55 and “Setting site values in the Maintain Parameters window” on page 56.

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=*  
//BMCPRINT DD SYSOUT=*  
//IBOTRACE DD SYSOUT=* 
//BMCSYSIN DD * 
CPCID=CPCX 
CAPTURES=3 
IBOTRIG=1000 
TEMPUNIT=unitName 
MGMTCLAS=mgmtClas 
STRGCLAS=strgClas 
DATACLAS=dataClas 
IBOOFF=N 
SVCOFF=N 
PROCOPTA=Y 
SVCJOB=Y 
SVCPSB=N 
SVCDLI=Y 
SVCDBB=Y 
```

**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 to suit the requirements and conventions of your production environment.
Setting default values with the IBOINIT utility

For descriptions of the keywords, see Table 5 on page 58.

**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 5  Production-mode keywords for the IBOINIT utility (part 1 of 4)

<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; the minimum value is 1</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>
<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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>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>
</tbody>
</table>
Setting default values with the IBOINIT utility

Chapter 4 Using Application Accelerator in production mode 59

IBOFF N Y NS
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.

Note: 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.

SVCOFF N Y
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 exist:

- The job step is using the product in trial mode.
- The job step JCL includes the IBO#cpcID DD statement, and the product load modules are included in the STEPLIB, JOBLIB, or LNKLST concatenation.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBOFF</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. Note: 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>
<tr>
<td>SVCOFF</td>
<td>N, Y</td>
<td>N</td>
<td>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 exist: The job step is using the product in trial mode. The job step JCL includes the IBO#cpcID DD statement, and the product load modules are included in the STEPLIB, JOBLIB, or LNKLST concatenation.</td>
</tr>
</tbody>
</table>
Setting default values with the IBOINIT utility

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, sometimes an application developer codes 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.

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 this value, Application Accelerator must delete existing entries in the Exclude table.

### Table 5  Production-mode keywords for the IBOINIT utility (part 3 of 4)

<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, sometimes an application developer codes 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>
<tr>
<td>SVCJOB and SVCPSB</td>
<td>Y, N</td>
<td>SVCJOB=Y, SVCPSB=N</td>
<td>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 this value, Application Accelerator must delete existing entries in the Exclude table.</td>
</tr>
</tbody>
</table>
### Table 5  Production-mode keywords for the IBOINIT utility (part 4 of 4)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Accepted values</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
</table>
| SVCDLI  | 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 application types, and you need to disable the product temporarily for this type of application. |
| SVCDBB  | Y, N           | Y             | 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:  

- You are phasing in Application Accelerator processing, based on application type.  
- Your organization does not have any DBB applications, or never wants to use Application Accelerator for DBB applications.  
- A problem is occurring when Application Accelerator processes a DBB application but not other application types, and you need to disable the product temporarily for this type of application. |
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 63
- “Rearranging the Policies table” on page 64
- “Filtering displayed policies” on page 64
- “Adding policies to the Exclude table” on page 65

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 the Policy tab, or click the Exclude tab.
4. View and modify the tables as needed.

**TIP**

Clicking Refresh redisplays the tab with the latest values from the repository.

5. Click Save to store the changes in both tabs in the repository.
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 via the Add/Edit dialog, or by selecting application jobs from a list of job steps that Application Accelerator has been monitoring for a minimum number of runs in order to capture statistics.

**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 If you want to edit an existing policy, select the corresponding row in the Policies table.

3 Click Add or Edit.

4 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.

5 Click OK to store your changes in the Policies table.

**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**

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 Policy 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 your changes first.

Filtering displayed policies

On the Policy tab, 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 them.
Adding policies to the Exclude table

To filter displayed policies in the Policies table

1. On the Policy tab, click Add Like.

2. In the Add Policy dialog, specify values that you want to use for filtering the display of policies.

3. Click OK to apply the specified filters to the display of the Policies table.

_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 MVS ID to exclude a job only when it is running on the specified system. If you omit the MVS ID, the job is always excluded, regardless of the system in 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.
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 66.

2. Create JCL to execute the utility.
   
   For more information, see “CPCBATCH JCL requirements for policies” on page 70.

3. Specify control statements in the CPCSYSIN data set.
   
   For more information, see “CPCSYSIN control statements” on page 71.

4. For the IMPORT or EXPORT function, work with the sequential data set that contains policy records.
   
   For more information, see “Sequential data set for the EXPORT and IMPORT functions” on page 73.

5. For the EVALUATE function, work with the sequential data set that contains policy records.
   
   For more information, see “Results of the EVALUATE function” on page 76.

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
Adding or changing policies with the CPCBATCH utility

Chapter 4 Using Application Accelerator in production mode 67

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 73.

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 68.

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

For more information, see “Refreshing policies” on page 69.

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 68.

2 Edit the policies as needed.

For more information, see “Sequential data set for the EXPORT and IMPORT functions” on page 73.

3 Use the IMPORT function to import the edited policies.

For more information, see “Importing policies” on page 68.

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

For more information, see “Refreshing policies” on page 69.

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 69.

2 View the results of the evaluation in the CPCLOG data set.
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 CPC SYSIN statement refreshes the policies:

```plaintext
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 CPC SYSIN statement:

```plaintext
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>
<tr>
<td>CPCLOG DD</td>
<td><em>(required for EVALUATE functions; recommended for other functions)</em> Identify an output data set to contain the CPC message log and the policy report that the utility produces for the EVALUATE function. Typically, this statement specifies a standard SYSOUT=* data set.</td>
</tr>
<tr>
<td>ddname DD</td>
<td><em>(optional for EXPORT and IMPORT functions)</em> Identify a sequential data set to contain the policies to export, or one that contains the policies to import.</td>
</tr>
<tr>
<td>CPCSYSIN DD</td>
<td><em>(required)</em> Identify the data set that contains control statements for the CPCBATCH utility. Typically, this statement specifies an in-line data set (CPCSYSIN DD *).</td>
</tr>
</tbody>
</table>

The following example job shows a CPCBATCH job that specify policies for application accelerator:

```
//CPCBATCH JOB ...
//POLICIES EXEC  PGM=CPCBATCH,REGION=region
//STEPLIB DD DISP=SHR,DSN=cpc.options.library
//CPCLOG DD DISP=SHR,DSN=bmc.load.library
//CPCSYSIN DD *
//PLCYEXPT DD DISP=SHR,DSN=your.policy.export.dsn
//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>
<tr>
<td>Comments</td>
<td>Comments consist of an alphanumeric character string beginning with a slash-asterisk (/<em>) and ending with an asterisk-slash (</em>). Comments cannot start in position 1 of an input statement.</td>
</tr>
<tr>
<td>Separators</td>
<td>When you require a separator, use a blank, a comma, or a comment. More than one separator is allowed between keywords. Do not use a separator between a keyword and its value.</td>
</tr>
<tr>
<td>Continuation characters</td>
<td>Valid continuation characters are the plus sign (+) and the minus sign (-). Use them to continue control statements and comments that do not fit on a single line of input. The continuation character must be the last nonblank character. Use the continuation characters as follows:</td>
</tr>
<tr>
<td></td>
<td>- Use the plus sign (with no spaces before it) to continue values for a single keyword to a second line (or subsequent lines). The plus sign deletes leading separators from the continued line.</td>
</tr>
<tr>
<td></td>
<td>- Use the minus sign (with a space before it) to continue a list of keywords for a single command. The minus sign does not delete leading separators from the continued line.</td>
</tr>
</tbody>
</table>
## 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 REFRESH EVALUATE</td>
<td>None</td>
<td><em>(required for all functions)</em> Specify the function for the CPCBATCH utility to perform.</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 to 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 DSN 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 to 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>For the EXPORT function, the CPCBATCH utility will create the data set if it does not already exist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>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>
<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

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>File</th>
<th>Edit</th>
<th>Edit_Settings</th>
<th>Menu</th>
<th>Utilities</th>
<th>Compilers</th>
<th>Test</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDIT</td>
<td>RIHRXC.POLS228.CNTL</td>
<td>Columns 000001 00072</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command ===&gt;</td>
<td>Scroll ===&gt; CSR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>=COLS&gt; ---+---1----+----2----+----3----+----4----+----5----+----6----+----7--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>***** ******************************************* Top of Data *******************************************</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>000001 E AAITESTX SYSP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>000002 E AAITESTX IMSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>000003 I AAITEST3 PSB01 DFSDDLTO BMC1 SYSP I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>000004 I AAITEST2 PSB01 DFSDDLTO BMC1 SYSP M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>000005 I AAITEST1 PSB01 DFSDDLTO BMC1 SYSP O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>***** ******************************************* Bottom of Data *******************************************</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Order of policies in the sequential data set

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>- <strong>E</strong> specifies an exclude policy, which causes Application Accelerator to bypass processing for a matching job. The following fields apply in an exclude policy and should be the only fields that are specified when the Policy Type field contains <strong>E</strong>:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Job Name or PSB Name (depending on an Application Accelerator default value)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MVSID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>I</strong> specifies an include policy, which causes Application Accelerator to continue processing for a matching job. All fields apply to an 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 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 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 PGM parameter of the EXEC statement in the JCL for executing the 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 in the EXEC parameter of the application JCL or in the IMS control blocks that are used in the eligible job step.</td>
</tr>
<tr>
<td>39 through 46</td>
<td>MVSID</td>
<td>Specify the system identifier of the z/OS system in which the application job executes. Specify a complete, specific identifier, or leave the value blank to indicate that the policy applies to all z/OS systems.</td>
</tr>
<tr>
<td>48</td>
<td>Action</td>
<td>Specify the action that Application Accelerator will take for an application job that matches this policy:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>O</strong> specifies that Application Accelerator will optimize the application execution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>M</strong> specifies that Application Accelerator monitor the application execution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>I</strong> specifies that Application Accelerator will ignore the application execution.</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 if 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 if the ACCTABC1 or ACCTDEF1 job is running, but not if 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 if 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
- Not participate in job AAITEST4, because no policy applies to the job

```
02/28/2013                  CPC MESSAGE LOG          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
12:34:56.61  ** END OF KEYWORDS **
12:34:56.61  POLICY ACTION = OPTIMIZE, POLICY MATCHED = POL00003
12:34:56.61  POLICIES COMMAND PROCESSING COMPLETED SUCCESSFULLY
12:34:56.62  POLICIES COMMAND PROCESSING STARTED
12:34:56.62       KEYWORD  VALUE SPECIFIED
12:34:56.62       RUNTYPE   EVALUATE
12:34:56.62       JOBNAME   AAITEST2
12:34:56.62       PROGNAME  DFSDDLT0
12:34:56.62       PSB       PSB01
12:34:56.62       IMS       BMC1
12:34:56.62       MVSID     SYSP
12:34:56.62  ** END OF KEYWORDS **
12:34:56.62  POLICY ACTION = MONITOR , POLICY MATCHED = POL00002
12:34:56.62  POLICIES COMMAND PROCESSING COMPLETED SUCCESSFULLY
12:34:56.62  POLICIES COMMAND PROCESSING STARTED
12:34:56.62       KEYWORD  VALUE SPECIFIED
12:34:56.62       RUNTYPE   EVALUATE
12:34:56.62       JOBNAME   AAITEST3
12:34:56.62       PROGNAME  DFSDDLT0
12:34:56.62       PSB       PSB01
12:34:56.62       IMS       BMC1
12:34:56.62       MVSID     SYSP
12:34:56.62  ** END OF KEYWORDS **
12:34:56.62  POLICY ACTION = IGNORE , POLICY MATCHED = POL00001
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, such as:
  
  — Total CPU service units and elapsed seconds saved
  — CPU service units and elapsed seconds saved during individual executions

For more information, see “Viewing information about resource savings” on page 77.

- You can manually compare statistics from the same job step, executed with and without Application Accelerator.

Viewing information about resource savings

When Application Accelerator has optimized one or more IMS batch application job steps in production mode, the product provides information about the resources that were saved through optimization. You can view this information in the Resource Savings window on the console.

When you access the Resource Savings window, Application Accelerator retrieves data collected during optimization and displays it as follows:

- The upper portion of the window reports overall results for all optimized job steps.
- The lower portion of the window displays the results for each optimized job step.
To view information about resource savings

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 popup 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 at the specified position through the end of the name.

4 View the information in the Resource Savings window.

Troubleshooting problems in production mode

If a problem occurs while you are using Application Accelerator in production mode, you might need to refer to the following topics.

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 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 62 or “Managing policies through the CPCBATCH utility” on page 66.

- 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 still occurs.

## 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.

<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>

## Using production mode without screening application jobs

In certain cases, you might not want or be able to use the CPC subsystem to screen service requests (SVCs) for executing jobs in your environment to determine whether they are eligible for Application Accelerator processing:

- A problem is occurring with SVC screening.
- IMS batch applications are not executing with PGM=DFSRRCC00 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.
Using a different set of CPC repositories

**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.

**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.

3. In the cpcID CPC subsystem, disable SVC screening in the default values.

4. Ensure that the required load modules for Application Accelerator are included in the STEPLIB, JOBLIB, or LNKLST concatenation.

---

**Using a different set of CPC repositories**

In certain cases, you might not want to use the CPC repositories that are associated with the CPC subsystem that screens executing jobs in your environment to determine whether they are eligible for Application Accelerator processing:

- 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.
Correcting problems with dimmed console items

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 $IBOVSM DD statement.

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

Correcting problems with dimmed console items

In the console, items (such as menu selections, buttons, and commands) are dimmed when the item is present in the interface but is not accessible, given current conditions. A dimmed item is displayed with a gray or lighter-color text or border, instead of with the black or more intense color of other items.

An item can appear dimmed 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 access. 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.
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