EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE
Installation Guide

Supporting

Version 5.6 of EXTENDED BUFFER MANAGER for DB2®
Version 5.6 of EXTENDED BUFFER MANAGER for IMS™
Version 5.6 of SNAPSHOT UPGRADE FEATURE for DB2
Version 5.6 of SNAPSHOT UPGRADE FEATURE for IMS
Version 5.6 of SNAPSHOT UPGRADE FEATURE for VSAM

February 2009
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<table>
<thead>
<tr>
<th>Address</th>
<th>Telephone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC SOFTWARE INC 2101 CITYWEST BLVD HOUSTON TX 77042-2827 USA</td>
<td>713 918 8800 or 800 841 2031</td>
<td>713 918 8000</td>
</tr>
</tbody>
</table>

**Outside United States and Canada**

<table>
<thead>
<tr>
<th>Telephone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>(01) 713 918 8800</td>
<td>(01) 713 918 8000</td>
</tr>
</tbody>
</table>

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Customer support

You can obtain technical support by using the BMC Software Customer Support website or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, see “Before contacting BMC.”

Support website

You can obtain technical support from BMC 24 hours a day, 7 days a week at http://www.bmc.com/support_home. From this website, you can

- read overviews about support services and programs that BMC offers
- 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

Support by telephone or e-mail

In the United States and Canada, if you need technical support and do not have access to the web, call 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
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About this book

This book contains detailed installation information about the EXTENDED BUFFER MANAGER (XBM) products from BMC Software. These products include:

- XBM for DB2
- XBM for IMS
- SNAPSHOT UPGRADE FEATURE (SUF) for DB2
- SUF for IMS
- SUF for VSAM

This book is intended for system administrators and database administrators.

To use this book, you should be familiar with the following items:

- your database management system (DBMS)
- OS/390 systems, job control language (JCL), and the Interactive System Productivity Facility (ISPF)

For example, you should know how to respond to ISPF panels.

Like most BMC documentation, this book is available in printed and online formats. Visit the BMC Customer Support page at [http://www.bmc.com/support_home](http://www.bmc.com/support_home) to request additional printed books or to view online books and notices (such as release notes and technical bulletins). Some product shipments also include the online books on a documentation CD.

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**NOTE**

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

The software also offers online Help. To access Help, press F1 within any product.
## Related documentation

BMC products are supported by several types of documentation:

- online and printed books
- online Help
- release notes and other notices

### NOTE

In addition, the messages that XBM generates are available in an OS/390 data set that is downloaded during installation. For each message, the data set includes an explanation and suggests a user response. The OS/390 data set is called `HLQ.MSGS` (where `HLQ` is the high-level qualifier that is specified during installation).

For XBM, the following publications supplement this book and the online Help:

<table>
<thead>
<tr>
<th>Category</th>
<th>Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>core documents</td>
<td>EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide</td>
<td>provides information about configuring and using XBM for I/O caching and snapshot processing</td>
</tr>
<tr>
<td>supplemental documents</td>
<td>release notes, flashes, technical bulletins</td>
<td>provide updates to installation information and last-minute product information</td>
</tr>
</tbody>
</table>

## 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>
</table>
| 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. | alias  
databaseDirectory  
serverHostName |
| 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. | [tableName, columnName, field]  
[-full, -incremental, -level] (UNIX) |
| Braces indicate that at least one of the enclosed items is required. Do not type the braces when you enter the item. | {DBDName | tableName}  
UNLOAD device={disk | tape.  
fileName | deviceName}  
{a | c} (UNIX) |
| A vertical bar means that you can choose only one of the listed items. In the example, you would choose either commit or cancel. | {commit | cancel}  
{-commit | -cancel} (UNIX) |
| An ellipsis indicates that you can repeat the previous item or items as many times as necessary. | columnName . . . |
Preparing for installation

This part introduces XBM, its Installation System, and the prerequisites that you must meet before starting the installation process. This part contains the following chapters:

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Installation overview

This chapter contains the following topics:

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EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE overview

Fast access to mission-critical data is a high priority. One of the best ways to improve system performance is to eliminate I/Os. However, improving performance has typically required additional hardware. Thus, the high cost of hardware upgrades has prevented many users from enjoying the benefits of reduced response time and faster data access.
In addition, in today’s business environment, data availability is crucial as information-processing capabilities evolve to better accommodate round-the-clock, global business operations. Organizations relying on mainframe applications need the ability to create backup copies of databases with minimal interruption of business-critical application processing. Shrinking batch windows and growing batch workloads are becoming increasingly problematic for many users.

The EXTENDED BUFFER MANAGER (XBM) family of products gives you the benefit of faster access to your data without the need for expensive hardware upgrades. Additionally, the XBM products work with selected BMC high-performance utilities to provide increased data availability. XBM also integrates with other BMC products to let you proactively manage system-wide performance and data availability.

**Improving system performance by using I/O caching**

XBM improves performance by reducing the number of physical read I/Os that are performed in accessing data. XBM achieves this reduction in physical I/O by caching data in central or expanded storage. This area of expanded storage is called the *extended buffer*. When data stored in the extended buffer is requested, the request is satisfied without performing a physical I/O to read the data from direct access storage devices (DASD). Reduced I/O improves performance system-wide.

XBM improves system performance through the following ways:

- performance of specific applications
- queries for specific IBM DB2 Universal Database for z/OS® and OS/390® tables
- response time for IBM IMS VSAM, OSAM, and Fast Path databases
- performance of DB2 ad hoc query systems
- performance of IMS online transactions
- performance of IMS batch operations
- access time of all applications
- overall performance of your IBM MVS® system

**Increasing data availability by using snapshots**

XBM increases data availability when used with supported BMC utilities to create snapshots. XBM increases data availability by using these methods:

- software snapshots
- hardware (SSI-assisted) snapshots
- Instant Snapshots
**Traditional snapshots**

Software and hardware snapshots are also called *traditional snapshots*. A traditional snapshot allows the supported utility to process data while the database remains available for updates. When the snapshot process starts, the database takes a brief outage to establish a point of consistency. At this point, XBM starts to provide data to the supported utility:

- For software snapshots, XBM monitors write requests to the database for the data objects that are being processed. When a record changes, XBM stores a preimage of the record in its software cache.

- For hardware snapshots, XBM uses intelligent storage to provide preimage records from a “frozen” copy of the database to the utility.

As the utility reads database records during its job, XBM satisfies the read request of the utility with the preimage from either the hardware device or software cache. In this manner the data read by the utility for that database is as it existed when the point of consistency was established, while the source database continues to be updated.

**Instant Snapshots**

Instant Snapshots are significantly different from traditional snapshots. When processing an Instant Snapshot, XBM uses the appropriate intelligent storage interface to create (or snap) a copy of physical data on a storage device to a different location on the same device (or on another device within the same control unit or frame). A copy of the data remains on the storage device after the utility finishes processing the job. XBM can also snap, or reapply, this copied data back to the original location for recovery.

XBM works with supported BMC utilities to create this physical data copy and recover by using the copy. Instant Snapshots derive their name from the speed at which the copy and recovery occur: Instant Snapshots require no host I/O to copy the data set.
BMC utilities that use snapshots

Table 1 lists the BMC utilities that can perform snapshot processing. The types of snapshots and supported features vary by utility. For information about the features that are enabled for a particular utility, see the documentation for that utility.

Table 1  Snapshot-enabled utilities

<table>
<thead>
<tr>
<th>Platform</th>
<th>Snapshot-enabled utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2</td>
<td>COPY PLUS for DB2, CHECK PLUS for DB2, RECOVER PLUS for DB2, REORG PLUS for DB2, UNLOAD PLUS for DB2</td>
</tr>
<tr>
<td>IMS</td>
<td>IMAGE COPY PLUS, MAXM Reorg/EP, MAXM Reorg/Online, RECOVERY PLUS for IMS</td>
</tr>
<tr>
<td>VSAM</td>
<td>XBM utility program (a VSAM and sequential data set copy utility), RECOVERY UTILITY for VSAM</td>
</tr>
<tr>
<td>mirror reporting only</td>
<td>MAINVIEW SRM Reporting</td>
</tr>
</tbody>
</table>

Snapshot storage devices

Table 2 lists the supported storage devices for the different types of snapshots.

Table 2  Supported hardware devices

<table>
<thead>
<tr>
<th>Snapshot type</th>
<th>Supported hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSI-assisted (hardware) snapshots</td>
<td>EMC Symmetrix, Hitachi 7700E/9900 devices capable of PPRC or FlashCopy version 2 operations, IBM Enterprise Storage Subsystem (Shark) devices capable of PPRC or FlashCopy 2 operations (including Extended Address Volumes (EAV)), IBM RAMAC Virtual Array (RVA), StorageTek Shared Virtual Array (SVA), any other storage device capable of generic PPRC</td>
</tr>
<tr>
<td>Instant Snapshots</td>
<td>EMC Symmetrix, Hitachi 7700E/9900 devices capable of FlashCopy version 2 operations, IBM Enterprise Storage Subsystem (Shark) devices capable of FlashCopy version 2 operations, IBM RVA, StorageTek SVA</td>
</tr>
</tbody>
</table>
Understanding the SNAPSHOT UPGRADE FEATURE and solutions

The SNAPSHOT UPGRADE FEATURE (SUF) is a subset of XBM. This feature allows supported BMC utilities to use XBM snapshot technology when processing snapshots.

SUF is included as a component in multiple BMC solutions:

- Backup and Recovery Solution for IMS
- Database Administration for DB2
- Database Performance for DB2
- Recovery Management for DB2

You can also license SUF separately from the solutions and use it with the supported BMC utilities to perform snapshot processing. SUF as a stand-alone component is available for DB2, IMS, and VSAM.

Understanding XBM components

XBM is designed to isolate functions for a specific product into a component structure. Table 3 shows the components that are available for XBM.

<table>
<thead>
<tr>
<th>Component</th>
<th>Major functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSAM</td>
<td>supporting snapshot processing for VSAM data with supported BMC utilities and the XBM utility program</td>
</tr>
<tr>
<td>DB2</td>
<td>- defining DB2 managed objects</td>
</tr>
<tr>
<td></td>
<td>- maintaining DB2 statistics</td>
</tr>
<tr>
<td></td>
<td>- performing local and sysplex-wide performance caching for DB2 data sets</td>
</tr>
<tr>
<td></td>
<td>- compressing DB2 data sets in cache</td>
</tr>
<tr>
<td></td>
<td>- prefetching DB2 data during sequential reads</td>
</tr>
<tr>
<td></td>
<td>- supporting local and sysplex-wide snapshot utilities processing</td>
</tr>
</tbody>
</table>
Installation System overview

The Installation System from BMC Software is an ISPF application that generates a set of installation batch jobs in job control language (JCL). You can use these batch jobs to unload and customize BMC Software products from distribution media. You can also use the batch jobs to apply maintenance to installed products.

NOTE
The SSI component is automatically authorized when you authorize the DB2, IMS, or VSAM component. The PSS component is automatically authorized when you authorize the DB2 or IMS component.

For more information about obtaining passwords, see Chapter 6, “Applying product passwords.”

Table 3 Components of XBM (part 2 of 2)

<table>
<thead>
<tr>
<th>Component</th>
<th>Major functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS</td>
<td>■ defining IMS managed objects (OSAM, VSAM, and Fast Path)</td>
</tr>
<tr>
<td></td>
<td>■ maintaining IMS statistics</td>
</tr>
<tr>
<td></td>
<td>■ caching IMS data sets to enhance performance</td>
</tr>
<tr>
<td></td>
<td>■ compressing IMS data sets in cache</td>
</tr>
<tr>
<td></td>
<td>■ prefetching IMS VSAM data during sequential reads</td>
</tr>
<tr>
<td></td>
<td>■ supporting local and sysplex-wide snapshot utilities processing</td>
</tr>
<tr>
<td>Parallel Sysplex Support (PSS)</td>
<td>■ supporting I/O caching in a DB2 sysplex environment (global I/O caching)</td>
</tr>
<tr>
<td></td>
<td>■ supporting snapshot utilities processing for DB2 or IMS in a sysplex environment</td>
</tr>
<tr>
<td></td>
<td>■ maintaining PSS statistics of all XBM subsystems in a sysplex environment</td>
</tr>
<tr>
<td>Storage Systems Integration (SSI)</td>
<td>■ supporting snapshot processing by using intelligent storage DASD devices</td>
</tr>
<tr>
<td></td>
<td>■ providing an interface to allow active manipulation of storage devices</td>
</tr>
<tr>
<td></td>
<td>■ monitoring storage device status</td>
</tr>
</tbody>
</table>
As shown in the following table, the Installation System accommodates different installation and maintenance media, and different installation strategies:

<table>
<thead>
<tr>
<th>Category</th>
<th>Supported choices</th>
<th>More information</th>
</tr>
</thead>
<tbody>
<tr>
<td>installation methods</td>
<td>■ Custom installation</td>
<td>“Installation methods” on page 25</td>
</tr>
<tr>
<td></td>
<td>■ Express installation</td>
<td></td>
</tr>
<tr>
<td>product distribution</td>
<td>■ electronic software distribution (ESD)</td>
<td>“Distribution methods” on page 26</td>
</tr>
<tr>
<td>methods</td>
<td>■ tape distribution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ maintenance files</td>
<td></td>
</tr>
<tr>
<td>installation strategies</td>
<td>■ full installation</td>
<td>“Installation strategies” on page 28</td>
</tr>
<tr>
<td></td>
<td>■ maintenance installation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ installation on a single DB2 subsystem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ installation on multiple DB2 subsystems</td>
<td></td>
</tr>
<tr>
<td>installation settings</td>
<td>■ use of default values from the system</td>
<td>“Installation profile repository and installation profiles” on page 32</td>
</tr>
<tr>
<td></td>
<td>■ use of specified new values</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ use of an installation profile (values that are preserved from an earlier</td>
<td></td>
</tr>
<tr>
<td></td>
<td>installation)</td>
<td></td>
</tr>
</tbody>
</table>

### Installation methods

The Installation System supports a **Custom** installation and an **Express** installation. Both installation methods create an environment that is maintained using the IBM System Modification Program Extended (SMP/E) maintenance.

Regardless of which method you choose, the Installation System guides you through the installation process, allowing you to accept or change defaults along the way. You can readily access Help from each panel by pressing **F1**.

### Custom installation

The Custom installation uses the full SMP/E product installation and maintenance program. SMP/E product distribution files contain modification control statements (MCSs) and relative files (RELFILEs) for SMP/E product installation and maintenance.

The Custom installation method is required if you are adding a product to an existing SMP/E installation.
**Express installation**

The Express installation provides an SMP/E installation that uses IEBCOPY to copy the product data sets, and sets up an SMP/E environment by using predefined SMP/E zones and libraries. The Express installation method includes steps for unloading, customizing, and executing BMC products. You may want to use the Express installation method under the following circumstances:

- to install all products into a new SMP/E environment
- to install products for a trial or demo system

**Distribution methods**

BMC offers the following methods of software distribution:

- electronic software distribution (ESD)
- distribution tapes
- maintenance files

**ESD**

Electronic product shipment is performed using FTP. You use FTP to download product files from a server at BMC for subsequent installation at your site. After specifying the products and solutions that you want to download, you receive the following items:

- base installation libraries

  The base installation libraries are required to initiate the Installation System CLIST. These libraries include an installation library (`HLQ.INSTALL`, where `HLQ` is a high-level qualifier) and a load library (`HLQ.INSTALL.LOAD`). These libraries also include ISPF panels and programs that are necessary to customize the installation of the products, and infrastructure components that multiple BMC products use.

- product and solution files

The following considerations apply to using the ESD site:

- To download from the ESD site, you must have an ESD user ID and password. To obtain them, contact your BMC Customer Support representative.

- If you have restrictions that apply to transferring files through FTP (such as byte limits, network or server timeout limits, or firewall restrictions), use tapes instead of the ESD site.
Distribution tapes

Physical product shipment is done using 3480 or 3490 tapes. The shipment includes the following tapes:

- **B-series tape set**

  The B-series tape set (formerly the BMI tape) contains the base installation libraries that are required to initiate the Installation System. This tape set also includes ISPF panels and programs that are necessary to customize the installation of the products, and infrastructure components that multiple BMC products use.

  **NOTE**
  XBM and SUF are available on the B-series tape set.

- **one or more product tape sets**

  These tape sets contain the panels and programs to unload and customize most BMC products. Examples are the C-series (DB2 products), I-series (IMS products), and M-series (MAINVIEW products) tape sets.

Maintenance files

Maintenance files update the BMC products that you installed with the Installation System. Maintenance files repair product defects or add product enhancements. BMC provides these maintenance files through eFix, ESD, and tape.

BMC provides the following types of maintenance files:

- **program update tape (PUT)**
- **SMP/E service files**

**PUT maintenance**

PUT files contain verified PTFs and hold data. BMC tests PTFs before distributing them to verify that they perform as designed. BMC distributes PUT files from the ESD site or on physical tape.

- To download PUT files from the ESD site, select **Electronic Maintenance** from the **Additional Options** menu. See “Generating jobs to perform SMP/E maintenance” on page 140 for more information.

- To order PUT maintenance on tape, contact your local Customer Support representative or send an e-mail message to **Product_Distribution@bmc.com**.
**SMP/E service files**

SMP/E service files contain additional maintenance to be applied during installation to bring the product to the GA level or to a specific PUT level. All PTFs and APARs that are required for creating the GA level of the product are added to the service files. However, if BMC incorporates an APAR into a maintenance update concurrently with the release of a new product, that APAR is not added to the service files.

**NOTE**

Use the SMP/E service files only when performing a Custom installation of a product.

**Installation strategies**

In addition to supporting Custom installation and Express installation, the Installation System allows you to perform full or maintenance installations, and to install products on a single DB2 subsystem or on multiple subsystems. Your installation strategy should suit your product configuration needs, while requiring the least amount of time and effort.

**Considerations for determining an installation strategy**

To choose the best installation strategy, consider the following questions:

- Which BMC products are installed at your site, and what are their maintenance levels?
- Which BMC products do you plan to trial or add to your installation?
- How much time and effort are required for customizing your products?
- Are you experienced with SMP/E procedures and terminology?

Your answers will help you determine the scope of your installation.

**Full or maintenance installation**

Depending on your responses to the preceding questions, you can choose to perform a full or maintenance installation:

- Use a full installation to install products for the first time or to install new releases of products that are already installed.
- Use a maintenance installation to upgrade products to current maintenance levels.
**Runtime enablement**

For selected BMC products and solutions, the Installation System supports runtime enablement (RTE). RTE lets you create runtime libraries by combining your BMC product SMP/E target libraries and user data sets into a single runtime library that is not SMP/E managed. RTE is intended to be used for product deployment, and the products are not executed from the SMP/E target data sets.

If you select the RTE option, the Installation System configures data set members that are used to execute products to point to the RTE set of libraries (not the target data sets) during the product customization phase of installation. After customization, the RTE job ($R05RTEC) is executed to create the RTE data sets.

Low-level qualifiers (LLQ) for the RTE data sets have a BMC prefix followed by up to five characters, which makes the LLQ unique and identifies the contents of the data sets (for example, the LLQ of the messages data set is BMCMLIB).

The RTE process combines like data sets into one data set (for example, the contents of BB8AMP, DBSAMP, IMSAMP, XXSAMP, and any similar user data sets that are created, like UBBSAMP, are merged into BMCSAMP). Merging the data sets into a single data set reduces the number of data sets to manage in the production environment.

The $R05RTEC job, which copies content from the SMP/E target libraries to the runtime libraries, can be created by using one of the following options to control how the copy steps are ordered:

- **Sort/Break = N**
  
  The copy steps are created in the following order, with the copy steps within each step in alphabetical order:

  - BB libraries
  - DB libraries
  - IM libraries
  - XX libraries
  - password
  - user libraries
  - OZI (ozicntl and $R05RTEC)

- **Sort/Break = Y**

  A copy step is created for each type of content such as CLIB, DBRM, LINK, and other content. The copy steps are sorted in alphabetical order within each step.
The runtime enablement feature affects the installation process in several areas:

- **Product selection**
  
  During product customization you might be prompted to change your product selections. If you select a mix of products that do and do not support the runtime enablement feature, you are prompted to continue without using the runtime enablement feature or to change the products that you selected so that you can use the runtime enablement feature.

- **Product customization**
  
  During product customization, if all products that you are installing support runtime enablement, you are prompted to run your products from runtime enablement data sets or from your SMP/E target libraries.

- **Runtime enablement**
  
  When you have run all product customization jobs, choose Runtime Enablement from the installation main menu to create and run the $R05RTEC job, which allocates or uses the existing runtime libraries and copies members from the target and user data sets into the runtime libraries.

- **Product maintenance**
  
  During product maintenance you apply SMP/E maintenance to your SMP/E target libraries and then copy the updated members into your runtime data sets.

**Merged and non-merged installations**

For most BMC products for DB2 and IMS, you can select a merged or non-merged installation. With both the merged and non-merged installation, each product function modification ID (FMID) can now have its own data definition (DDDEF).

- Merged installation (available in earlier versions) places product libraries in three collections of data sets. The data set names are prefixed with BB, DB, or XX (such as BBLINK, DBLINK, or XXLINK).

- The new non-merged installation places the product libraries in product-specific data sets that are prefixed by the product code (for example, ACPLINK). For BMC products for DB2, a non-merged installation requires the use of runtime enablement.
Sample strategies

Table 4 summarizes common installation strategies.

Table 4  Sample installation strategies  (part 1 of 2)

<table>
<thead>
<tr>
<th>Situation</th>
<th>Installation strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are installing new BMC products, and you have no other BMC products</td>
<td>You need to perform a full installation. You can choose one of the following installation methods:</td>
</tr>
<tr>
<td>installed.</td>
<td>■ Custom installation of any combination of BMC products</td>
</tr>
<tr>
<td></td>
<td>■ Express installation of any combination of BMC products</td>
</tr>
<tr>
<td>You are upgrading previously installed BMC products to new releases.</td>
<td>You need to perform a maintenance installation if you are upgrading to a maintenance-level (.mm) release.</td>
</tr>
<tr>
<td></td>
<td>You need to perform a full installation if you are upgrading to a full-level (v.r) release.</td>
</tr>
<tr>
<td>You are installing new products for trial.</td>
<td>You can choose one of the following installation methods:</td>
</tr>
<tr>
<td></td>
<td>■ Express installation of the new products for trial</td>
</tr>
<tr>
<td></td>
<td>You can run the trial products on the same CPU with existing products.</td>
</tr>
<tr>
<td></td>
<td>■ Express installation of your existing products and trial products</td>
</tr>
<tr>
<td></td>
<td>If you install trial products with your existing products, you might have difficulty removing the trial products at a later date without removing the other products.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The difference between trial products and licensed products is the type of password that you use and the password’s expiration date. You should notice no other differences when you install trial and licensed products.</td>
</tr>
</tbody>
</table>

Note: The difference between trial products and licensed products is the type of password that you use and the password’s expiration date. You should notice no other differences when you install trial and licensed products.
The installation profile repository and installation profiles provide a means of storing and managing installation variables for many products, across many installation sessions. You can use preserved values from any previous installation, or you can selectively use the default values that the Installation System provides.

### Profile repository

The profile repository is an index of profiles that you use to install BMC products. The repository is a sequential data set that stores each profile name, the date when the profile was created, and other information.

When you first run the Installation System, you are required to create a profile repository. BMC recommends the following convention for your repository name:

```
HLQ.BMCREPO
```
The variable *HLQ* is a high-level qualifier that should be easily identified and used by all installation users in your facility. All users are encouraged to use the same repository because only one repository is necessary for any installation environment. However, because the repository can store many hundreds of profiles, you can choose to create additional repositories, as necessary, for organizational purposes.

---

**TIP**

If many profiles are created in your environment, consider creating a separate repository for each calendar or fiscal year in which profiles are created.

---

The following profile management features are available within the profile repository:

- View or browse a profile to verify the contents before beginning an installation session.
- Print a profile to review the contents. This feature generates print JCL for a profile report.
- Copy a profile to create a profile that is modeled from another. This feature is useful when you want to use many but not all of the variables from an earlier session.
- Delete a profile that is no longer required.
- Use an existing profile when you want to replicate a previous installation, using the same variables, values, and defaults that you used in the original installation session.
- Create a new installation profile data set.

If an installation profile data set does not exist, specify the *HLQ* and *ID*. If a profile repository data set does not exist, specify *HLQ.BMCREPO*. The Installation System creates the installation profile and profile repository data sets.

Profiles are listed in the repository in chronological order of use; the most recently used is listed first. By using the profile repository, you can ensure a consistent and specific installation environment for a group of products or for a business unit within your enterprise.
Installation profile

The installation profile is a sequential data set that contains the variables and values used during the installation of the BMC Software mainframe products. This includes variables and values used in the user options, product install, customization and additional options process. The installation profile can be used to provide subsequent installers with the data entered during previous installations.

NOTE

The $BMCPROF ISPF should not be confused with the installation profile. The $BMCPROF ISPF profile contains the variables and values that you provide prior to the product installation.

When you first run the Installation System, you are prompted to create a new profile. The profile name uses the following format:

`HLQ.IDPROF`

The variable `HLQ` is a high-level qualifier that you provide and may be used by other installers, `ID` is a four-character name that you choose, and `PROF` is an appended string that identifies the data set as an installation profile.

In subsequent installation sessions, the most recently used profile is the default. You can choose to create a new profile, or you can select a profile from the profile repository.

By reusing an existing profile, you can replicate an earlier installation exactly. If you make changes during the installation, the Installation System updates the profile accordingly.

In most cases, the best practice is to create a new profile for each distinctly different installation. If installation variables are few, you can simply copy a similar profile, advance to the variables that require change (by using the checkpoint feature), and proceed with the installation. You can stop your installation at any checkpoint. You can then start over, or you can resume the installation from one of the listed checkpoints.

How to display profile repository information

You can use a CLIST member (READREPO) to display your installation profile and profile repository information outside the Installation System. After you perform an installation with the Installation System, READREPO is included in your customized installation library if the version of your installation library is 2.0.09 or later.
To display installation profile repository information

1  Copy READREPO to a UDBCLIB library.

2  Enter EX READREPO.

3  When the CLIST prompts you for the control or repository data set name (DSN),
    enter the location of your previous repository.

    For example, enter yourProductHLQ.CNTL or yourHLQ.BMCREPO.

If you have an older version of the installation in place but you have a newer tape or
ESD installation library available, you can use the READREPO CLIST from the newer
library to read the older repository. If you have another library, such as a JCL library
that contains a member named OZICNTL, you can use the OZICNTL member to
locate the READREPO CLIST. The OZICNTL member contains the customized
installation library name and the repository name.

Conventions for using the Installation System

This section explains conventions that apply during the installation process.

Panel selections

Throughout the Installation System, you are requested to make selections on panels.
Unless otherwise stated, you select an item by typing a slash (/) or the letter s next to
the item and pressing Enter.

Function keys and commands

The Installation System panels provide messages at the bottom to indicate which
function keys are available. By default, the active function keys are not displayed. To
display the active keys, type the ISPF command PFSHOW on the Command line and
press Enter.

NOTE
Some Installation System panels use every available line to display input variables. To display
all variables, type PFSHOW OFF on the Command line and press Enter.
You can use the following commands and function keys to move through the Installation System panels:

- **HELP** or **F1** displays the Help panel for the current panel.
- **END** or **F3** saves your changes and returns to the Installation System Main Menu.
- **CANCEL** or **F12** saves any changes and returns to the previous panel.
- **Enter** accepts the defaults or changes and continues to the next panel.

In the Installation System Help panels, use the following keys or commands to navigate:

- **F3** exits the Help panel and returns to the current installation panel.
- **F10** or **F12** returns to the previous page of a multiple-page Help panel.
- **Enter** or **F11** continues to the next page of a multiple-page Help panel.

### Data set names

The Installation System uses ISPF conventions when processing data set names. If the TSO/E PROFILE NOPREFIX option is in use, the Installation System does not append a prefix to the data set name that you specify. The maximum length for a data set name is 44 characters, including the prefix, if used.

**NOTE**

The TSO/E PROFILE PREFIX option must be turned on when you start the Installation System. If the option is not turned on, you must use the setup parameter as described in “To start the Installation System” on page 69.

### Symbolic variables

The Installation System frequently uses symbolic variables in data set names, data set prefixes, and job-statement information. In the Installation System, most symbolic variables are related to keyword values that you specify in the product options. Symbolic variable names begin with an ampersand (&).

While the Installation System assembles product options, macro processing tries to resolve all symbolic variables in the listing. Most symbolic variables are resolved when a BMC product generates JCL. When necessary, the Installation System doubles the ampersand for all symbolic variables to prevent errors.
The double-character rule also applies to the following characters:

- single quotation marks within literal values if the literal is enclosed with delimiting single quotation marks
- a period if the literal immediately follows a variable name

The following table illustrates the use of double characters:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&amp;&amp;</code></td>
<td><code>&amp;</code></td>
</tr>
<tr>
<td><code>''</code></td>
<td><code>'</code></td>
</tr>
<tr>
<td><code>..</code></td>
<td><code>.</code></td>
</tr>
</tbody>
</table>

**Volume serial number ID**

Every tape is identified by a unique volume serial (VOLSER) number. The VOLSER is printed on the tape label and is encoded electronically on the tape. The VOLSER number, or VOLSER ID, is a six-character string that is based on the following syntax:

\[ \text{targetMediaOrderYmd} \]

- The variable `target` represents the single-character tape set identifier. BMC products are organized into the following types:
  - `B-series` identifies the base installation tape.
  - `C-series` identifies the classic or DB2\(^{TM}\) product family tapes.
  - `I-series` identifies the IMS\(^{TM}\) product family tapes.
  - `M-series` identifies the MAINVIEW product family tapes.
  - `P-series` identifies the PUT maintenance tapes.
  - `S-series` identifies the SMP/E service tapes.

A series can contain one or more tapes.

- The variable `Media` represents the single-character media identifier:
  - 8 identifies 3480 tapes.
  - 9 identifies 3490 tapes.

- The variable `Order` represents the single character tape usage order. Tape A is first, B is second, and so on.
The variable \textit{Ymd} represents the tape’s date in the format year, month, day:

— The year is the last digit of the four-digit year (4=2004).
— The month can be from 1 through C (1-9, A=10, B=11, and C=12).
— The day can be from 1 through V (1-9, and A=10 through V=31).

For example, 47H means the date of the tape is July 17, 2004.

Examples of VOLSERs are M9A4CV and C8B581:

- M9A4CV=M-series products; 3490 tape; first tape in tape set; December 31, 2004
- C8B581=C-series products; 3480 tape; second tape in tape set; August 1, 2005

### Naming conventions for product packaging

BMC naming conventions classify product components while allowing for future expansion. The conventions reflect product-line organization. They also classify machine-readable data that is used during installation as SMP/E setup, product installation, or product-specific information.

BMC classifies system modifications (SYSMODs) by product line and type. Each seven-digit SYSMOD name uses the format \textit{BTPFV} or \textit{BTPN}:

- The initial B represents BMC Software.
- The variable \textit{T} represents the SYSMOD type.

<table>
<thead>
<tr>
<th>Value for \textit{T}</th>
<th>SYSMOD type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>function</td>
<td>BBBBX16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BBIBA26</td>
</tr>
<tr>
<td>A</td>
<td>APAR</td>
<td>BAB0001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BAI0002</td>
</tr>
<tr>
<td>P</td>
<td>PTF</td>
<td>BPB0123</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BP10456</td>
</tr>
</tbody>
</table>

- The variable \textit{P} represents the product line.
- The variable \textit{F} represents a two-character identifier that is used only for a function SYSMOD.
- The variable \textit{V} represents a two-digit version number that is used only for a function SYSMOD.
- The variable \textit{N} represents an APAR or PTF number within the product line.
NOTE
The letters C, D, E, and F are reserved for future APAR SYSMOD use. The letters Q and R are reserved for future PTF SYSMOD use.

Naming conventions for Custom and Express data sets

BMC uses naming conventions for product distribution files to prevent conflicts between system and product data sets. The following naming conventions apply to Custom and Express data sets:

<table>
<thead>
<tr>
<th>Name variable for product data set</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>targetLibraryName</td>
<td>target library dname or DDDEF name</td>
<td>HLQ.V2050.ESD6.DBLINK</td>
</tr>
<tr>
<td>distributionLibraryName</td>
<td>distribution or maintenance library dname or DDDEF name</td>
<td>HLQ.V2050.ESD6.ADBLINK</td>
</tr>
<tr>
<td>runtimeLibraryName</td>
<td>runtime library dname or DDDEF name</td>
<td>HLQ.V2050.ESD6.BMCLINK</td>
</tr>
<tr>
<td>function</td>
<td>function name</td>
<td>ZAUP221</td>
</tr>
<tr>
<td>prdRelease</td>
<td>three-letter product code and release number</td>
<td>SPD2200</td>
</tr>
</tbody>
</table>

**Note:** Release numbers can include a combination of one-digit or two-digit version, release, and modification levels. For example, 1100 means version 1.1.00 (version 1, release 1, no maintenance).

Custom installation data sets

BMC identifies product data sets for a Custom installation as shown in the following examples:

- SMPMCS
- BMC.function.Fnn
**Express installation data sets**

BMC identifies product data sets for an Express installation as shown in the following examples:

- BMC.prdRelease.targetLibraryName
- BMC.prdRelease.distributionLibraryName
- BMC.prdRelease.UCLIN.DLIB.CSI
- BMC.prdRelease.UCLIN.TARGET.CSI

To use the high-level qualifier BMC, the RFDSNPFX parameter is required in the header for the SMPMCS of all product function IDs (FMIDs).

**NOTE**

If multiple users are installing products, all users of the Installation System must have access to the data sets defined by the high-level qualifier.

---

**Installation and configuration process**

Table 5 summarizes the tasks for installing and configuring your product. Experienced users can use this table as a quick reference for locating relevant details, as cited in the “Reference” column. Other users should proceed through each part of the book in order, referring to this table for orientation as required.

**Table 5 Installation and configuration tasks (part 1 of 3)**

<table>
<thead>
<tr>
<th>Task</th>
<th>How to complete the task</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparing for installation (Part 1 of this book)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gather the information that you will need during the installation.</td>
<td>Review the prerequisites and considerations for installing XBM and SUF successfully in your environment.</td>
<td>Chapter 1, “Installation overview” and Chapter 2, “Installation requirements and considerations”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>release notes, flashes, and technical bulletins</td>
</tr>
<tr>
<td><strong>Installing and customizing product libraries (Part 2 of this book)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set up the installation libraries.</td>
<td>Obtain the base installation libraries by using one of the following methods:</td>
<td>“Obtaining the base installation libraries” on page 58</td>
</tr>
<tr>
<td></td>
<td>- Download from the ESD site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Unload from the B-series tape set.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Create a customized installation library.</td>
<td>“Creating a customized installation library” on page 63</td>
</tr>
</tbody>
</table>
### Table 5  Installation and configuration tasks (part 2 of 3)

<table>
<thead>
<tr>
<th>Task</th>
<th>How to complete the task</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Run the Installation System.</strong></td>
<td>Start the Installation System.</td>
<td>“Starting the Installation System” on page 69</td>
</tr>
<tr>
<td></td>
<td>Create a profile repository to store installation variables and customization options.</td>
<td>- “Installation profile repository and installation profiles” on page 32&lt;br&gt;- “Creating an installation profile repository and installation profiles” on page 70</td>
</tr>
<tr>
<td></td>
<td>Specify user options that determine how the Installation System runs and where it stores installation JCL.</td>
<td>- “Specifying user options” on page 74</td>
</tr>
<tr>
<td><strong>Install product libraries.</strong></td>
<td>Select the products that you want to install and generate installation JCL for them.</td>
<td>“Generating installation JCL” on page 78</td>
</tr>
<tr>
<td></td>
<td>If you used the Express installation method, run the generated installation JCL to unload products to the product libraries.</td>
<td>“Running Express installation JCL” on page 80</td>
</tr>
<tr>
<td></td>
<td>If you used the Custom installation method, perform the following subtasks:</td>
<td>- “Checking for PTFs in error” on page 84 and “Processing PTF hold data” on page 84&lt;br&gt;- “Setting up the SMP/E environment for Custom installations” on page 85&lt;br&gt;- “Installing the product libraries with SMP/E” on page 89&lt;br&gt;- “Allocating and constructing product data sets with SMP/E” on page 91</td>
</tr>
<tr>
<td></td>
<td>- Check for PTFs in error and, if they exist, process the PTF hold data.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Set up the SMP/E environment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Install the product libraries.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Set up product data sets in target and distribution zones.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If you need to apply SMP/E product maintenance, perform the following subtasks:</td>
<td>- “Setting up the SMP/E environment for Express installations” on page 82&lt;br&gt;- “Generating jobs to perform SMP/E maintenance” on page 140&lt;br&gt;- “Running jobs to apply SMP/E maintenance” on page 143&lt;br&gt;- “Obtaining maintenance from eFix” on page 147</td>
</tr>
<tr>
<td></td>
<td>- If you used Express installation, prepare the SMP/E maintenance environment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Generate maintenance JCL (if applicable).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Run the generated maintenance JCL.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Download and apply the latest PTFs from eFix.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 5  Installation and configuration tasks (part 3 of 3)

<table>
<thead>
<tr>
<th>Task</th>
<th>How to complete the task</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customize the installation.</strong></td>
<td>Use the Installation System to perform the following subtasks:</td>
<td>• “Gathering the required information” on page 98</td>
</tr>
<tr>
<td></td>
<td>• Set default option values to prepare the products for execution.</td>
<td>• “Generating Standard customization JCL” on page 100</td>
</tr>
<tr>
<td></td>
<td>• Generate and run customization JCL.</td>
<td>• “Running Standard customization JCL” on page 103</td>
</tr>
<tr>
<td><strong>Authorize products.</strong></td>
<td>Use the Product Authorization utility to authorize products.</td>
<td>Chapter 6, “Applying product passwords”</td>
</tr>
<tr>
<td><strong>Apply the latest maintenance.</strong></td>
<td>Use the BMC Customer Support website or SMP/E to ensure that you are using the most current level of the products.</td>
<td>Chapter 7, “Applying maintenance”</td>
</tr>
<tr>
<td><strong>Configuring the product to work in your environment (Part 3 of this book)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grant user authorizations.</strong></td>
<td>Grant authorizations to allow users in your organization to access the products.</td>
<td>“Granting user authorizations” on page 154</td>
</tr>
<tr>
<td><strong>Perform final product-specific tasks.</strong></td>
<td>Complete required product-specific tasks that are relevant to your environment (such as enabling interaction with other BMC products).</td>
<td>• “Configuring XBM subsystems” on page 162</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• “Configuring XBM components” on page 170</td>
</tr>
</tbody>
</table>
Chapter 2  Installation requirements and considerations

This chapter contains the following topics:

Overview ................................................. 43
Installation requirements ........................................ 44
  Installation System requirements ................................. 44
  System software requirements .................................. 44
Installation authorization requirements .......................... 45
  Password requirements ....................................... 45
  Estimated space requirements ................................. 46
Installation considerations .................................. 47
  Default options .......................................... 47
  CLIST requirements ...................................... 47
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  Repository data sets ...................................... 48
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  XBM user ID ........................................... 50
  XBM for IMS and Link Pack Area storage .................... 50
  Multiple product considerations ........................... 50

Overview

This chapter describes the requirements and any considerations that you should review before installing the product described in this installation guide.
Installation requirements

XBM and SUF have system software, password, space requirements, and ISPF requirements for their installation, customization, and use. This section introduces these prerequisites.

NOTE
Because SUF is a subcomponent of XBM, the process for installing and customizing the products is the same. The features that are enabled are determined by password authorization.

Installation System requirements

The Installation System has the following ISPF requirements:

- ISPF version 4.0 or later
- You must have the DD ISPTABL library in your ISPF logon PROC.
  
  This library is needed for the ISPF table processing that the Installation System requires.
- Set the disposition of your ISPPROF or ISRPROF data set to shared (DISP=SHR) in your logon procedure.
  
  Setting the disposition to shared allows batch TSO to update the data set. Specifically, this setting allows you to merge product tapes and run BMCINSTL REXX EXEC. If you do not set the disposition to shared, you will receive an ISPS105 error (invalid keyword) when you submit the installation JCL to merge product tapes, and when you run BMCINSTL REXX EXEC.

System software requirements

XBM has the following system software requirements:

- any IBM-supported version of ISPF
- TSO region size set to TSO REGION=4M (or higher) for all XBM users
Depending on the XBM component that you have, you must also have the following software installed:

- IBM-supported version of DB2 (for XBM for DB2)
- IBM-supported version of IMS (for XBM for IMS)

To use XBM for snapshot processing, you must also have a supported BMC utility installed and storage devices installed, if applicable.

**Installation authorization requirements**

When you install the XBM product, you must meet the following requirements:

- You must have a DB2 authorization of SYSADM to run the batch jobs that the Installation System generates. However, you do not need DB2 authorization to run the Installation System or to generate the batch jobs.

- If you are using an SMP/E environment, you must APF authorize the SMP/E HLQ.BMCPSWD and HLQ.LLQLINK data sets (where LLQ is DB, XX, BB, and UDB).

- If you are using a runtime environment, you must APF authorize the HLQ.BMCLINK data set.

The Installation System copies the HLQ.BMCPSWD and HLQ.LLQLINK data sets (where LLQ is DB, BB, XX, and UDB) to either the HLQ.BMCLINK data set or to the existing user-specified APF-authorized LINK library.

**Password requirements**

To activate a BMC product or solution, you must have a password. The Product Authorization Letter that accompanied your product shipment provides details.

The Installation System accommodates any of the following methods for establishing license authority to access and use BMC products:

- Use the Product Authorization option from the Installation System Additional Options Menu. This option starts the BMC Software Product Authorization utility, which is documented in Chapter 6, “Applying product passwords.”

- Review and edit the Product Authorization JCL that is unloaded with the products, and submit the JCL outside the Installation System’s operation.
Use the Installation System’s product customization process to establish access authority.

**NOTE**

Some BMC products can be authorized only during the product customization process.

The XBM components that you authorize and the passwords that you need depend on the features of XBM that you are implementing. Table 6 describes how to authorize different features of XBM. For more information about applying passwords, see Chapter 6, “Applying product passwords.”

**Table 6 Authorizing XBM components**

<table>
<thead>
<tr>
<th>Features implemented</th>
<th>Type of password needed</th>
</tr>
</thead>
</table>
| snapshot features only                | - If you received XBM or SUF as part of a solution, use the solution-level password to authorize the XBM components. For more information, see the installation guide for your solution.  
- If you received XBM or SUF as a stand-alone product, use a SUF for DB2 (XBS), SUF for IMS (XBU), or SUF for VSAM (XBA) password. |
| hardware monitoring features only     | Use the solution-level password to authorize the SSI component of XBM.                  |
| all features (including I/O caching, snapshot, and monitoring features) | Use an XBM for DB2 (XBM) or XBM for IMS (XBI) password.                                 |

**NOTE**

The SSI component is automatically authorized when you authorize the DB2, IMS, or VSAM component. The PSS component is automatically authorized when you authorize the DB2 or IMS component.

**Estimated space requirements**

During the unload process, the Installation System determines space requirements and automatically allocates various data sets according to the products that you selected for installation. The Installation System displays the total space requirements for all of your selections.

You can increase the allocation for any or all data set types. You can increase the allocation for a specific data set type, or you can apply a percentage increase to all data set allocations. You cannot decrease space allocations.
Installation considerations

Before you install and customize the XBM product, you should familiarize yourself with the information described in this section.

Default options

The XBM product uses an assembled options module (XBM$OPTS). The options are kept in text format and apply only to the ISPF user interface.

If you are using XBM in a data sharing environment, see “Configuring XBM$OPTS for data sharing environments” on page 168.

CLIST requirements

One CLIST is required for each MVS image, with separate options for each unique XBM subsystem.

NOTE

If you are using XBM in a sysplex environment, you can set up XBM$OPTS so that you can use a single CLIST by using pattern-matching characters.

For more information, see “Defining and starting the XBM started task” on page 163.

Dispatching priority

BMC recommends setting the dispatching priority of XBM to just below that of IBM VTAM®. The dispatching priority of XBM should be at least equal to the priority for the Internal Resource Lock Manager (IRLM) or the DBMS (whichever one has the higher priority).
Automatic initialization of the XBM subsystem

XBM runs as a formal MVS subsystem and automatically handles its subsystem initialization. You do not need to add XBM to the SYS1.PARMLIB subsystem name table.

**WARNING**
Not setting XBM to high enough dispatching priority can have a negative impact on overall system performance.

**WARNING**
If you add XBM to your Program Properties Table (PPT), do not define XBM as nonswappable. Defining XBM as nonswappable results in incomplete XBM initialization.

Repository data sets

When you install XBM, you must allocate a minimum of one data set for each repository. However, for backup purposes, BMC recommends that you allocate at least two data sets for each repository, with each data set located on a different device.

XBM keeps each copy of a repository data set current. If one repository data set become unavailable, XBM can access the other.

Migrating repositories when upgrading

You will likely reuse the information stored in your repository when you upgrade to a new version of XBM. This repository information includes configurations, management sets, groups, and option settings. The Installation System generates the $C10VSAM job that allows you to migrate your old repository information to your new XBM repository.

- **Migrating repositories for a regular installation**

  The $C10VSAM job that is generated during a regular installation creates JCL that defines a new VSAM repository data set. To migrate your old repository information, use a copy utility (such as IDCAMS REPRO) to copy the old repository information from your old repository data set into the newly created repository data set.
Migrating repositories for a maintenance installation

The $C10VSAM job that is generated during a maintenance installation creates JCL that alters your existing VSAM repository data set. Before submitting this job, make a backup copy of your repository data set in case you need to fall back to an earlier version.

If you maintained more than one repository data set (as BMC recommends), you need not make a backup copy. Modify the XBM PROC to point to only one of your existing VSAM repository data sets. When you initialize the new version of XBM for the first time, XBM updates the repository information for only the repository data set specified in the PROC. The other repository data set remains unaltered in case you must revert to the earlier version of XBM.

When you are satisfied that you no longer need the remaining old repository, add that repository data set name to the PROC and restart XBM.

(See “Configuring XBM subsystems” on page 162 more information about the PROC format.)

Reverting to a previously installed version of XBM

Back up your repository before you upgrade to a new version or release of XBM. Repository formats are not backward-compatible among XBM versions. If you do not back up your repository before you upgrade, you can revert to an earlier version of XBM but you must re-create your repository (including management sets, groups, configurations, and any options that you specified). This compatibility issue is not applicable to maintenance upgrades. For example, if you upgrade from 5.1.00 to 5.1.01, the repository formats do not change.
SYSTEMS-wide XBM ENQ demotion (PSS component only)

For the PSS component, XBM uses SYSTEMS-wide ENQs to control shared repository access. Though it is sometimes common practice to demote SYSTEMS-wide ENQs to SYSTEM-wide ENQs to enhance system performance, BMC recommends that you refrain from demoting XBM ENQs (major name BMCXBM).

PROC for started task

Each XBM subsystem requires a PROC for the started task.

“Defining and starting the XBM started task” on page 163 describes this task.

XBM user ID

The XBM user ID requires update authority to the XBM load library. This allows XBM to enable a grace period if a problem occurs with your product authorization (for example, if you need to temporarily run XBM on a backup processor).

XBM for IMS and Link Pack Area storage

If you are installing XBM for IMS, ensure that the following modules are not in the Link Pack Area (LPA) of main storage: DFSPLDR0, DFSXDL10, DFSAOS60, DFSAOS80, DFSDLOC0, and DFSDLR00. If the modules are in LPA storage, move the modules before installing XBM for IMS. Otherwise, XBM may fail with a SOC4 abend.

Multiple product considerations

This section includes considerations when running XBM with other BMC products.
Runtime enablement

The Installation System allows you to create runtime libraries by combining various SMP/E libraries into a single set. Choosing the runtime enablement feature creates a copy job that merges the SMP/E target libraries and configured data sets into a single set of libraries. To use the runtime enablement feature, all of the products that you are installing in the same installation must support runtime enablement.

**NOTE**

Currently, the BMC products and solutions for DB2 (except MAINVIEW for DB2) and IMS support runtime enablement.

Using merged or non-merged libraries

For most BMC products and solutions for DB2, the Installation System allows you to create merged or non-merged libraries:

- Merged libraries are the BB, DB, and XX libraries. If you use merged libraries, you have the option of using runtime enablement.
- Non-merged libraries are product-specific. The name of each library is prefixed with the product code. If you use non-merged libraries, you must use runtime enablement.

The following restrictions apply if you install a MAINVIEW product or a BMC product for IMS™ at the same time that you install a BMC product for DB2:

- If you select a MAINVIEW product for installation with a BMC product for DB2, only merged installation without runtime enablement is available.

  This restriction results from the fact that MAINVIEW products do not support non-merged installation or runtime enablement.

- If you select a BMC product for IMS for installation with a BMC product for DB2, only merged installation with the optional runtime enablement is available.

  This restriction results from the fact that non-merged installations for BMC products for DB2 require runtime enablement. (BMC products for DB2 and IMS support merged and non-merged installation and runtime enablement. However, BMC products for IMS do not require runtime enablement for non-merged installations.)
Table 7 summarizes support for merged and non-merged installations and runtime enablement.

**Table 7  Support for merged installation, non-merged installation, and runtime enablement**

<table>
<thead>
<tr>
<th>Products</th>
<th>Merged installation support?</th>
<th>Non-merged installation support?</th>
<th>Runtime enablement support?</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC products for DB2</td>
<td>yes&lt;sup&gt;a&lt;/sup&gt;</td>
<td>yes&lt;sup&gt;a&lt;/sup&gt;</td>
<td>yes</td>
</tr>
<tr>
<td>BMC products for IMS</td>
<td>yes&lt;sup&gt;a&lt;/sup&gt;</td>
<td>yes&lt;sup&gt;a&lt;/sup&gt;</td>
<td>yes</td>
</tr>
<tr>
<td>BMC MAINVIEW products</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

<sup>a</sup> Using runtime enablement is optional.

<sup>b</sup> Using runtime enablement is required.

**Product library names**

The XBM product supports the SMP/E installation method, merged and non-merged installation, and runtime libraries. You can use three different types of libraries:

- **runtime** libraries, which use a qualifier of BMC
- **SMP/E** merged libraries, which use a qualifier of DB, BB, or XX
- **SMP/E** non-merged libraries, which use the product or component code (prd) as a qualifier
- **user** libraries, which use a qualifier of UDB

*UDB* identifies user data sets that contain customized or generated members.

In this book, the variable LLQ is used to represent these qualifiers when referring to library names.

Table 8 lists libraries that can exist when you install the products and components. In all library names, HLQ represents the high-level qualifier that is assigned in your environment during installation, and prd represents the product code.

**Table 8  Library names (part 1 of 2)**

<table>
<thead>
<tr>
<th>Included in library</th>
<th>Non-merged installation library name</th>
<th>Merged installation library name</th>
<th>Runtime library name</th>
</tr>
</thead>
<tbody>
<tr>
<td>password data</td>
<td>HLQ.BMCPSWD</td>
<td>HLQ.BMCPSWD</td>
<td>HLQ.BMCLINK</td>
</tr>
<tr>
<td>CLISTs</td>
<td>HLQ.UXXCLIB</td>
<td>HLQ.UXXCLIB</td>
<td>HLQ.BMCCCLIB</td>
</tr>
<tr>
<td>JCL</td>
<td>HLQ.UXXCNTL</td>
<td>HLQ.UXXCNTL</td>
<td>HLQ.BMCCNTL</td>
</tr>
</tbody>
</table>
Observe the following guidelines when you customize the libraries:

- If you are customizing a product within the Installation System, the Installation System takes your changes to members in the JCL library and applies them to members in the UDB user libraries.

- If you are customizing a product outside of the Installation System, you must copy the members from the DB SMP/E target libraries to the UDB user libraries. Then, update the members in the UDB libraries.

- If you apply maintenance to your runtime libraries or if you modify your user libraries, you must copy the members from the DB, BB, and XX SMP/E target libraries and the user UDB user libraries to the BMC runtime libraries.

### Table 8  Library names (part 2 of 2)

<table>
<thead>
<tr>
<th>Included in library</th>
<th>Non-merged installation library name</th>
<th>Merged installation library name</th>
<th>Runtime library name</th>
</tr>
</thead>
<tbody>
<tr>
<td>sample files and other reference</td>
<td>HLQ.XBMSAMP</td>
<td>HLQ.XXSAMP</td>
<td>HLQ.BMCSAMP</td>
</tr>
<tr>
<td>information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>modules</td>
<td>HLQ.XBMLINK</td>
<td>HLQ.XXLINK</td>
<td>HLQ.BMCLINK</td>
</tr>
<tr>
<td>panels and Help libraries</td>
<td>HLQ.XBMLIB</td>
<td>HLQ.XXPLIB</td>
<td>HLQ.BMCLIB</td>
</tr>
</tbody>
</table>

Observe the following guidelines when you customize the libraries:
Installing the product

This part contains the following chapters:

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Chapter 4
  Installing product libraries ................................................... 77

Chapter 5
  Customizing XBM ................................................................. 97

Chapter 6
  Applying product passwords .................................................. 107

Chapter 7
  Applying maintenance ............................................................ 139
Chapter 3  Setting up the Installation System

This chapter contains the following topics:

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- Setting up the installation libraries .................................. 58
  - Obtaining the base installation libraries .......................... 58
  - Creating a customized installation library ...................... 63
- Starting and preparing the Installation System ................... 68
  - Starting the Installation System ................................ 69
  - Creating an installation profile repository and installation profiles ........................................... 70
  - Specifying user options ........................................... 74

Overview

The installation process includes unloading products from distribution tape or downloading products from the BMC Electronic Software Distribution (ESD) site. Products are customized for use on your system. You can also use the Installation System to perform other tasks, such as applying maintenance and managing licensing authority.

This chapter explains how to set up and run the Installation System.
Setting up the installation libraries

You use the base installation libraries when installing products or applying product maintenance. The base installation libraries consist of an installation library and a load library. Before installing products, you must set up the base installation libraries as follows:

1. Obtain the base installation libraries ("Obtaining the base installation libraries" on page 58).

2. Set up a customized installation library ("Creating a customized installation library" on page 63).

Obtaining the base installation libraries

You can obtain the base installation libraries from either of the following sources:

- Download the libraries from the ESD File Transfer Protocol (FTP) site.

  You can download directly to the mainframe (if your site allows direct downloads through FTP), or you can use a web browser to download to a personal computer (PC) and then transfer the files to the mainframe.

- Unload the libraries from a distribution tape.

  You create and submit JCL to unload libraries from the tape. You can model your initial unload JCL after the example in Figure 2 on page 63.

Complete the procedure that best suits your needs:

- “To download base libraries from the ESD site by using FTP” on page 59
- “To download base libraries from the ESD site by using a web browser” on page 61
- “To unload base libraries from a tape” on page 62

**NOTE**

Instructions for downloading from the ESD site are also available on the ESD site at the following URL:
ftp://userID:password@epddownload.bmc.com/bmc/esd/ozi/ozi_readme.htm
Before you begin

Ensure that you have completed the following prerequisites before proceeding:

- Review the release notes, technical bulletins, and flashes that are associated with your products. These notices contain additional information that might have been added after this book was published.

- Back up your current product versions. Copy and save your current installation and product libraries.

- If you plan to download from the ESD site, obtain a user ID and password from your BMC Software Customer Support representative to access the site.

  Your Customer Support representative can also inform you of any special requirements for accessing and downloading products and solutions. All products require authorization before you can run them.

  **NOTE**

  BMC recommends that you use unique plan names, table names, repository names, and qualifier names.

To download base libraries from the ESD site by using FTP

1. Create a batch job that is similar to the sample in Figure 1 on page 61.

   A. Ensure that the JCL is unnumbered; FTP reads all 80 characters.

   B. Set **CAPS OFF** and **NUM OFF**.

   C. Customize the JOBCARD job to comply with your site’s requirements.

   **NOTE**

   This job requires a REGION parameter value of 0M.

D. Change variable text in the INPUT DD section (highlighted in bold in Figure 1 on page 61) as follows:

   **WARNING**

   The FTP server is case sensitive. You must use lowercase letters for all data in the INPUT DD section.
Obtaining the base installation libraries

- Change `userID` and `password` to the user ID and password that you obtained from BMC.
- Change `unit` to the unit parameter.
- *(optional)* Change `volume` and the SMS variables to the correct values for your site.

**NOTE**
If you do not use these parameters, delete these lines. Do not leave blank lines in the JCL.

- Change `versionNumber` to the version number that is listed on the ESD site for the Installation System binary image file at the following location:

  `ftp://userID:password@epddownload.bmc.com/bmc/esd/ozi/`

- Change `newDataSetName` to a valid data set name for your site.

  This data set should not already exist. The data set is created when the binary image file is downloaded.

- Make any additional changes your site requires, such as providing proxy information to get outside your firewall.

2. Submit the JCL to download the compressed libraries.

3. After the job completes successfully, edit the downloaded data set according to the instructions in the file.

4. Submit the edited JCL to decompress the base installation libraries.

   When the job decompresses the base installation libraries, it creates the `HLQ.BMC.INSTALL` and `HLQ.BMC.INSTALL.LOAD` data sets at the same location as the decompressed libraries.

**NOTE**
If you have adequate space allocated for your TSO session, you can submit the JCL from within the member. Otherwise, save your changes, exit the data set, and submit the data set (JCL) externally.

5. To create a customized installation library, proceed to “Creating a customized installation library” on page 63.
Figure 1  Sample FTP download job for the base installation libraries

```
//JOB_NAME JOB (ACCOUNT), 'USER COMMENT',
//   CLASS=JOB_CLASS, MSGCLASS=MSG_CLASS,
//   REGION=0M, NOTIFY=&SYSUID
//FTPGET EXEC PGM=FTP, REGION=5120K,
//   PARM='epddownload.bmc.com (timeout 720 exit=8'
//SYSMDUMP DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//OUTPUT DD SYSOUT=*
//INPUT DD *
userId password
cd bmc/esd/ozi
binary
locsite rec=fb lr=80 blk=6160
locsite cy pri=20 sec=2
locsite u=unit
locsite vol=volume
locsite stor=smsStorageClass
locsite mg=smsManagementClass
locsite datac=smsDataClass
get bmcozi-versionNumber-image.bin +
   'newDataSetName'
quit
/*
```

To download base libraries from the ESD site by using a web browser

1. Using a web browser, download the following file to your personal computer’s
desktop:

```epddownload.bmc.com/bmc/esd/ozi/bmcozi-<versionNumber>-image.bin```

**NOTE**
The variable `versionNumber` represents the current base installation version number.

2. Copy the downloaded file to your mainframe by using the transfer program of
your choice.
Obtaining the base installation libraries

NOTE
The file transfer must meet the following requirements:

- The transfer must be binary.
- The data set on the mainframe must be a fixed block 80 sequential file.
- The block size must be 6160.
- The primary allocation must be set to 30 cylinders, and the secondary allocation must be set to 2 cylinders.

3 After the transfer completes successfully, edit the downloaded data set according to the instructions in the file.

4 Submit the edited JCL to decompress the base installation libraries.

When the job decompresses the base installation libraries, it creates the HLQ.BMC.INSTALL and HLQ.BMC.INSTALL.LOAD data sets at the same location as the decompressed libraries.

NOTE
If you have adequate space allocated for your TSO session, you can submit the JCL from within the member. Otherwise, save your changes, exit the data set, and submit the data set (JCL) externally.

5 To create a customized installation library, proceed to “Creating a customized installation library” on page 63.

To unload base libraries from a tape

1 Create a batch job that is similar to the example shown in Figure 2 on page 63:

TIP
If you have a CD drive available, you can copy Figure 2 from the copy of this installation guide that is on your documentation CD, and use the copy as a base for creating the batch job. Be sure to check for and correct any spacing problems or other transferred errors.

A Edit the job to unload File 1 into the load library that the Installation System will use (for example, BMC.INSTALL.LOAD).

B Edit the job to unload File 2 into a partitioned data set (PDS, not PDSE) with the low-level qualifier INSTALL (for example, BMC.INSTALL).

In Figure 2 on page 63, B9Aymd represents the base installation tape’s VOLSER. The variable HLQ is the high-level qualifier that you assigned to the INSTALL data set when you unloaded the base installation libraries.
Modify the job card information according to your site’s requirements.

**Figure 2  Batch job for unloading the base installation libraries from the distribution tape**

```plaintext
//JOB_NAME JOB (account), 'USER COMMENT',
//              CLASS=JOB_CLASS, MSGCLASS=MSG_CLASS,
//              REGION=0M, NOTIFY=&SYSUID
//UNLOAD    EXEC PGM=IEBCOPY
//SYSPRINT  DD SYSOUT=* 
//SYSUT3    DD UNIT=SYSDA, SPACE=(TRK,(1,1))
//SYSUT4    DD UNIT=SYSDA, SPACE=(TRK,(1,1))
//BMCTLOAD  DD DSN=BMC.INSTALL.LOAD, DISP=OLD, VOL=SER=B9Aymd,
//              UNIT=TAPE, LABEL=(1,SL,EXPD=98000)
//* 
//BMCTINST  DD DSN=BMC.INSTALL, DISP=OLD, VOL=SER=B9Aymd,
//              UNIT=AFF=BMCTLOAD, LABEL=(2,SL, EXPD=98000)
//* 
//BMCLOAD   DD DISP=(CATLG, DELETE), DSN=HLQ.INSTALL.LOAD,
//              UNIT=SYSDA, SPACE=(CYL,(50,5,500)),
//              DCB=(RECFM=U, BLKSIZE=23476)
//* 
//BMCINST   DD DISP=(CATLG, DELETE), DSN=HLQ.INSTALL,
//              UNIT=SYSDA, SPACE=(CYL,(60,5,900)),
//              DCB=(RECFM=FB, LRECL=80, BLKSIZE=6160)
//* 
//SYSIN     DD *
COPY     I=BMCTLOAD, O=BMCILOAD
COPY     I=BMCTINST, O=BMCIINST
```

2. Submit the job to unload the base installation libraries.

To create a customized installation library, proceed to “Creating a customized installation library.”

**Creating a customized installation library**

After downloading or unloading the base installation libraries, you can use the procedure in this section to start the Installation System and create your site-specific installation environment.

---

**NOTE**

In this procedure, the variable `HLQ` is the high-level qualifier that you assigned to the `INSTALL` data set when you unloaded the base installation libraries.
Before you begin

Unload the base installation libraries as explained in “Obtaining the base installation libraries” on page 58.

To avoid merge error ISPS105 (invalid keyword), set the disposition of your ISPPROF or ISRPROF data set to shared (DISP=SHR) in your logon procedure. This setting allows batch TSO to update the data set.

To create a customized installation library

1 From the TSO Commands panel, start the Installation System with or without the setup option:

   - If you want to run the Installation System with the setup option (which allows you to specify the names and locations of temporary data sets for use during the installation), enter the following command:

     EX 'HLQ.INSTALL(BMCINSTL)' 'SETUP'

     For example, if your high-level qualifier is BMC.BMCI, enter the following command:

     EX 'BMC.BMCI.INSTALL(BMCINSTL)' 'SETUP'

   - If you want to run the Installation System without the setup option, enter the following command:

     EX 'HLQ.INSTALL(BMCINSTL)'

**WARNING**
If you are using SMS-managed data sets or JES3, you must use the setup option.

**NOTE**
BMC recommends that you use the setup option for subsequent installations because the option allows control of temporary data sets, SMS capabilities, JES options, and previously used installation profiles.

BMC recommends that you omit the setup option only if you are a first-time user of the Installation System, or if you want to reenter the provided defaults for items such as job card information.
2 When the Setup Options panel (Figure 3) is displayed, provide the necessary information and press Enter.

**Figure 3  Setup Options panel**

BMC Software Install System Setup Options

Command ===> _________________________________________________________________

During the installation process, the install system will allocate some temporary data sets to complete the install process. The install system will default the high level qualifier (HLQ) of those data sets to your TSO userid. If another HLQ is desired, then it should be entered below with any other relevant data set requirements.

- **Temporary Data Set HLQ** . . . . ________ (24 char. max)
- **Temporary Storage Class** . . ________ (Specify Value if Required for SMS)
- **Temporary Management Class** . . ________ (Specify Value if Required for SMS)
- **Temporary Data Class** . . . . ________ (Specify Value if Required for SMS)
- **Temporary Unit** . . . . . . . . SYSALLDA
- **Temporary VOLSER** . . . . . . . ______
- **Type of JES used** . . . . . . . JES2 (Specify JES2 or JES3)

**Reuse Previously Used Application-ID ($BMC) from the Install Library Y (Y/N)**

Press Enter to continue.

**TIP**

- Use a unique high-level qualifier for the **Temporary Data Set HLQ** field.
- In the **Reuse Previously Used Application-ID** field, select **Y** to use the $BMC profile if you have one user start the install and pass the installation to another user to complete the installation using the existing values. Select **N** when you do not want to share an installation values between users.

If you reuse the $BMC application ID, any changes you make during the installation session will replace the values currently stored for that installation session.

You will not see the **Reuse Previously Used Application-ID** option the first time you run the Installation System.

When you finish, the BMC Software Installation Configuration panel (Figure 4 on page 66) is displayed. The **Setup New Customized Installation Library** option is preselected.
Creating a customized installation library

**Figure 4  Installation Configuration Initial Menu**

Welcome to the BMC Software Installation and Customization System. The first step of this process is the setup of a Customized Installation Library. It is from within this library that you will unload, customize, and maintain the BMC Software products and solutions that you have purchased.

If you are executing this process for the first time for this release, select setup to create a new Customized Installation Library. Otherwise, select to Install and Customize your BMC Software Products and Solutions.

Select an option then press Enter to continue.

- Setup New Customized Installation Library
- Install and Customize Products and Solutions

Install notes: F1=Help, F3=Exit, F7 & 8=Table Scroll, F10=List, F11=XML code next Product/Category, F12=Previous Panel
Selection is by / or S unless panel states otherwise

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3 To continue, press Enter.

The system displays the Select Distribution and Installation Methods panel (Figure 5).

**Figure 5  Distribution and Installation Methods panel**

The BMC Software installation process installs products and solutions using multiple distribution and installation methods.

Select the Distribution Method:

- Electronic - Electronic Software Distribution
- Tape - Cartridge Distribution
  - 3490
  - 3480

Select the Installation Method:

- Custom - Install using the classic SMP/E installation process
- Express - Install using a predefined SMP/E installation process

Press Enter to continue.
4 Select the distribution method that you prefer:

- **Electronic** generates JCL that will download products from the BMC Software ESD site.

  **NOTE**
  
  The ESD site is password protected. The Installation System will prompt you for a user ID and password when you initiate the electronic download procedure. Contact your BMC Customer Support representative for a valid user ID and password.

- **Tape** generates JCL that will unload products from one or more distribution tapes. If you select **Tape**, also select one of the following options:
  
  - 3490
  - 3480

  **NOTE**
  
  If you later decide to change the distribution method for products or maintenance, you must create a new customized installation library and indicate the appropriate distribution method. In that case, when the checkpoint panel is displayed, choose to start over.

5 Select the installation method that you want to use:

- **Custom** generates JCL to perform a full SMP/E installation.
- **Express** generates JCL to perform an SMP/E installation using IEBCOPY.

6 Press **Enter** to continue.

7 Specify a name for your customized installation library, provide job card information as requested, and press **Enter**.

8 Provide product distribution information:

- If you selected the electronic distribution method, specify information that establishes a connection to the ESD site.

  **NOTE**
  
  Be prepared to provide the proxy information that your site requires and the user ID and password that you received from your BMC Customer Support representative.

  If the Installation System cannot get past your firewall, the system displays a prompt and assists you in obtaining the product files manually from the ESD site.

- If you selected the tape distribution method, specify the first VOLSER in the product distribution tape series.
9 When the system displays the JCL that creates your customized installation library, review the comments at the beginning of the job.

10 Submit the JCL to create the customized installation library.

**NOTE**

If you need to end this procedure and return to the initial panel, press F3.

Proceed to “Starting and preparing the Installation System.”

## Starting and preparing the Installation System

After creating your customized installation library, you are now ready to complete the following installation tasks:

1. **Start the Installation System** ("Starting the Installation System" on page 69).

2. **Set up installation profiles** ("Creating an installation profile repository and installation profiles" on page 70).

   You can create a new installation profile repository and installation profile to save your installation variables, or you can reuse an existing repository and existing profiles.

3. **Specify user options** ("Specifying user options" on page 74).

   This section explains how to start the Installation System and complete these tasks.
Starting the Installation System

Use the following procedure to access the Installation System’s Main Menu.

Before you begin

Ensure that you have obtained the base installation libraries and created your customized installation library as instructed in “Setting up the installation libraries” on page 58.

To start the Installation System

1. From the TSO Commands panel, enter the following command:

   EX 'HLQ.INSTALL(BMCINSTL)'

   The Installation Configuration Initial Menu is displayed (Figure 6).

   **Figure 6  Installation Configuration Initial Menu**

   | BMC Software Installation Configuration V2.2.45 Initial Menu |
   | Command ===|  _________________________________________________________________ |
   | Welcome to the BMC Software Installation and Customization System. The first step of this process is the setup of a Customized Installation Library. It is from within this library that you will unload, customize, and maintain the BMC Software products and solutions that you have purchased. |
   | If you are executing this process for the first time for this release, select setup to create a new Customized Installation Library. Otherwise, select to Install and Customize your BMC Software Products and Solutions. |
   | Select an option then press Enter to continue. |
   | - Setup New Customized Installation Library |
   | S Install and Customize Products and Solutions |
   | Install notes: F1=Help, F3=Exit, F7 & 8=Table Scroll, F10=List, F11=XML code next Product/Category, F12=Previous Panel |
   | Selection is by / or $ unless panel states otherwise |
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   | All rights reserved. |

2. Select Install and Customize Products and Solutions and press Enter.

   The Main Menu is displayed (Figure 7 on page 70).
Creating an installation profile repository and installation profiles

Creating an installation profile repository and installation profiles

An installation profile is a data set that contains installation variables and customization options. The installation profile repository is a sequential file that acts as an index to the profile data sets. The Installation System stores the profile repository data set name in the ISPF profile data set that is associated with your user ID.

Use the instructions in this section to complete one of the following tasks:

- Create a new installation profile repository (if the repository does not yet exist) and a new installation profile.

- Copy or select an existing installation profile to replicate an earlier installation (“To reuse an existing profile” on page 72).

3 To create an installation profile repository, proceed to “Creating an installation profile repository and installation profiles.”
To create a new installation profile

1. Start the Installation System as described in “Starting the Installation System” on page 69.

2. From the Main Menu, select Manage Repository/Profile and press Enter.

   The system displays the Repository/Profile Options panel (Figure 8).

**Figure 8  Repository/Profile Options panel**

```
BMC Software Install Repository/Profile Options

Change options as necessary. Press Enter to continue.

Repository Data Set . . . . . . HLQ.CUSTOMER.DEFINED.BMCREPO
Repository Storage Class . . . . . . (Specify Value if Required for SMS)
Repository Management Class . . . . (Specify Value if Required for SMS)
Repository Data Class . . . . . . . . (Specify Value if Required for SMS)
Repository Unit . . . . . . . . . . . . (Blank to use Installation Unit)
Repository VOLSER . . . . . . . . .

Repository Profile ID . . . . . . BMCI  ID containing Installation Parameters
** To create a new Profile, type over the Profile ID shown above. **
Profile System Name . . . . . . . <systemID>
Profile Data Set HLQ . . . . . . . . . . . (30 char. max)
Profile Data Set Description . . . . .
Manage Profiles . . . . . . . . . Y  (Y/N)
Entry Field Delimiter . . . . . . . 3  (1.Underscore  2.Reverse Video  3.None)
```

3. If the Repository Data Set field is blank, type a repository data set name:
   - If your profile repository data set already exists, enter that name.
   - If the data set does not exist, enter HLQ.BMCREPO to create the data set (replacing HLQ with your high-level identifier).

4. (optional) If required for the Storage Management System (SMS), type values for the following fields:
   - Repository Storage Class
   - Repository Management Class
   - Repository Data Class

5. (optional) In the Repository Unit field, type the repository unit.

6. (optional) In the Repository VOLSER field, type the ID of the VOLSER that corresponds to the VOLSER of the repository.
In the **Repository Profile ID** field, type a four-character ID for the installation profile.

The Installation System will use this ID and the HLQ that you choose in step 9 to create the name for the installation profile data set.

**8** In the **Profile System Name** field, type your system ID.

**9** In the **Profile Data Set HLQ** field, type a high-level qualifier for the profile data set.

The Installation System uses this HLQ and the profile ID that you chose in step 7 to name the installation profile data set, as follows:

$HLQ.IDPROF$

For example, if you type **MY.PDY** in this step and **MYNA** in step 7, the Installation System creates a profile data set with the following name:

**MY.PDY.MYNAPROF**

The Installation System stores the profile ID in the following locations:

- output JCL data set that you name when you specify user options
- ISPF profile data set (ISPPROF) that is associated with your user ID
- customized installation library that you created

**10** In the **Profile Data Set Description** field, type a description of your profile data set.

**11** In the **Manage Profiles** field, type **N** to create a new installation profile data set.

**12** After verifying that the values on the Repository/Profile Options menu are correct, press **Enter** to return to the Main Menu.

**13** To specify user options, proceed to “Specifying user options” on page 74.

**To reuse an existing profile**

**1** Start the Installation System as described in “Starting the Installation System” on page 69.

**2** From the Main Menu, select **Manage Repository/Profile** and press **Enter**.

The Repository/Profile Options panel (Figure 8 on page 71) is displayed.

**3** In the **Manage Profiles** field, type **Y** and press **Enter**.
The Repository Listing panel is displayed (Figure 9). The profiles are listed chronologically, beginning with the most recently used profile. You can view, copy, delete, or reuse any of the listed profiles.

**Figure 9** Repository Listing panel

<table>
<thead>
<tr>
<th>Sel</th>
<th>Created</th>
<th>Prof</th>
<th>Description</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>02/26/2008 XXXX</td>
<td>DEBH TAPE FULL DIRECT COPY PROFILE TEST</td>
<td>DEBH</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/21/2008 REOR</td>
<td>REORG INSTALL</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/22/2008 MHA3</td>
<td>SDFD ACT INSTALL</td>
<td>DB2B</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/24/2008 MHA1</td>
<td>DHA 1 COPY OF RDALWO.IVP7401.0ZI2012.UHA</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/23/2008 MGA2</td>
<td>INDIRECT COPY ACT ACM</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/23/2008 MGA1</td>
<td>THIS PROFILE IS A COPY OF MBA1</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/17/2008 MDC3</td>
<td>DBDC - 3 ALU FULL DIRECT V8</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/17/2008 MDC2</td>
<td>DBDC - 2 AAD FULL DIRECT V8</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/14/2008 MDC1</td>
<td>DBDC - 1 DAD FULL DIRECT V8</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/27/2008 MCS2</td>
<td>DECS - 2 SSID USING COPY OF MDC2</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/27/2008 MCS1</td>
<td>DECS - 1 MSSID USING COPY OF MDC1</td>
<td>DB2A</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>02/23/2008 MCR2</td>
<td>FULL DIRECT ACT ACP AMU AFR ADU</td>
<td>MCR2</td>
<td></td>
</tr>
</tbody>
</table>

4 In the selection field for the profile that you want to reuse, enter U.

**WARNING**

When using an existing profile, you must review the installation parameters carefully. If the previous person who installed the product changed a BMC Software default value to a user-specified value, you must change the user-specified value when you reuse the profile. The value must be a BMC default value or a different user-specified value. If you do not change the required unique parameters during the new installation procedure, severe errors result when you submit the installation JCL.

For example, if you do not change the user-specified value for a DB2 plan name from the value that was specified during a previous installation, you can overwrite the plan that your current installation uses.

5 To return to the Repository/Profile Options menu, press Enter.

6 After verifying that the values on the Repository/Profile Options menu are correct, press Enter to return to the Main Menu.

7 To specify user options, proceed to “Specifying user options” on page 74.
Specifying user options

You need to specify user options that determine how the Installation System runs and where it stores the installation JCL. If you are running the Installation System for the first time, you must specify options before continuing with any task. User options that you specify remain in effect for all subsequent installation tasks until you or someone else changes them.

Before you begin

Ensure that you have completed the following tasks:

- Obtained the base installation libraries and created your customized installation library as instructed in “Setting up the installation libraries” on page 58.
- Started the Installation System, as instructed in “Starting the Installation System” on page 69.
- Created a profile and profile repository, as instructed in “Creating an installation profile repository and installation profiles” on page 70.

To specify user options

1. From the Main Menu, select User Options and press Enter.

2. Specify an installation JCL data set to contain the JCL that the Installation System generates.

   **NOTE**
   Use a data set name of your choice. The output JCL data set contains the following items:
   - all jobs that are used to install the selected products
   - most CLISTs that are used to run the selected products
     Some products do not require CLISTs in the installation JCL.

   **WARNING**
   If installation JCL already exists in the specified data set, that JCL is overwritten.

3. *(optional)* Specify the storage class, management class, and data class for the installation JCL if required for SMS.

4. *(optional)* Specify the unit for the installation JCL if required for SMS.
5 (optional) Specify the installation JCL VOLSER.

6 (optional) Specify the data set options are used to unload the compressed product files.

Specify Y to define the data set options that are used to unload the compressed product files to DASD and decompress them. Provide the following values:

- High Level Qualifier
- Unit Name
- Volume Serial Num
- Storage Class
- Management Class
- Data Class

Specify N to accept the default data set options for unloading the compressed formatted product files to DASD and decompressing them.

7 To save your changes and return to the Installation System Main Menu, press Enter.

8 Specify the high-level qualifier (HLQ) that you used for creating temporary data sets in the unloading process.

The default value is your user ID. See “Obtaining the base installation libraries” on page 58.

9 (optional) Specify the unit name.

The default value is SYSALLDA.

10 (optional) Specify a volume for the temporary data sets.

11 (optional) Specify the storage class, management class, and data class for the temporary files that you used to decompress the product data sets if required for SMS.

12 (optional) Specify the output class for automatic purging of the noncritical output from the decompression process.

You are now ready to unload products from the distribution media, as instructed in Chapter 4, “Installing product libraries.”
Installing product libraries

This chapter contains the following topics:

- Overview ................................................. 77
- Generating installation JCL ................................... 78
- Running JCL for an Express installation ....................... 80
  - Running Express installation JCL .......................... 80
  - Setting up the SMP/E environment for Express installations .... 82
- Running JCL for a Custom installation .......................... 83
  - Checking for PTFs in error ................................. 84
  - Processing PTF hold data ................................ 84
  - Setting up the SMP/E environment for Custom installations ... 85
- Installing the product libraries with SMP/E ...................... 89
  - Allocating and constructing product data sets with SMP/E .... 91
- Canceling the installation .................................. 95

Overview

This chapter guides you through the tasks associated with installing the product libraries for the products that you selected:

- After you set up and run the Installation System (as described in Chapter 3, “Setting up the Installation System”), you are ready to generate the installation JCL for the products that you want to install. The purpose of this JCL is to unload the products that you selected into your environment.

  The Installation System places the generated jobs in your HLQ.JCL library. For more information, see “Generating installation JCL” on page 78.
Generating installation JCL

After you generate the installation JCL, you execute the JCL to start the unload process. The procedures for running the jobs vary, depending on which installation method you use.

— If you are installing XBM by using the Express installation method, you must complete the procedure in “Running JCL for an Express installation” on page 80.

— If you are installing XBM using the Custom installation method, you must consider environmental issues before running the JCL. “Running JCL for a Custom installation” on page 83 provides details.

Generating installation JCL

After you have supplied user options, you are ready to select products to unload from the distribution media. This procedure generates installation batch jobs (JCL) that you can review and edit if necessary. Running the JCL will unload the products that you selected into your environment.

Before you begin

Ensure that you have completed the following tasks:

- Obtained the base installation libraries and created your customized installation library as instructed in “Setting up the installation libraries” on page 58.

- Started the Installation System as instructed in “Starting the Installation System” on page 69.

- Specified user options as instructed in “Specifying user options” on page 74.

To generate the installation JCL

1. From the Main Menu, choose Product Install and press Enter.

   **NOTE**

   If you have previously run the Installation System, a checkpoint panel is displayed. You can stop your installation at a checkpoint. You can then start over, or you can resume the installation from one of the listed checkpoints.

   The Product Selection panel lists all products that are available in the customized installation library that you created when you first ran the Installation System.
2 On the Product Selection panel, select the products that you want to install and press Enter to continue.

A panel displays the selected products.

3 Verify that the displayed products are correct, and press Enter to continue.

---

**NOTE**
If you select some products and solutions that do support runtime enablement and some that do not, the Installation System issues a warning. If you want to use runtime enablement, you must return to the product selection screen and select only products that support runtime enablement.

Several panels are displayed, requesting information about your selections.

4 For each product, provide the requested information (modifying the displayed values, if necessary), and press Enter to continue.

5 After completing the product and solution panels, generate the installation jobs to unload the products from the distribution media:

---

**NOTE**
Downloading and decompressing products from the BMC ESD site requires approximately twice the DASD as a tape unload. The Installation System recovers this space after the decompression procedure is complete.

---

A On the JCL Generation Option panel, specify one of the following options:

- Generate installation jobs in the data set that you entered in “Specifying user options” on page 74.

  The Installation System generates jobs that unload the product libraries from the media, overwriting any installation jobs that already exist in the specified data set. The panel displays the current status of the JCL generation.

- Skip the installation job generation, and continue to the next panel.

  For example, you might skip the installation job generation if you have already generated jobs and simply want to review the information that you provided for the installation.

---

**NOTE**
If you skip the job generation, no installation jobs are created. Instead, the Installation System skips to step 5C.
Running JCL for an Express installation

B Press Enter to generate the installation jobs.

The installation jobs for the product or products are created.

C When all required jobs are generated, press Enter to display the list of generated jobs.

D Review the product documentation for additional installation requirements.

---

**NOTE**

When you generate installation JCL, jobs are automatically created that will restore your system to conditions that were in place before the installation. These jobs are located in the installation JCL library that you specified when you provided user options. See “Canceling the installation” on page 95 for more information.

---

6 Run the generated JCL to complete the installation:

- If you are performing an Express installation, see “Running JCL for an Express installation” on page 80.

- If you are performing a Custom installation, see “Running JCL for a Custom installation” on page 83.

**NOTE**

You should run the installation JCL before customizing your products because some of the customization steps for some products require installed product files.

---

Running JCL for an Express installation

To install products from tapes by using the Express installation method, run the JCL shown in Table 9 on page 81. The remainder of this section provides instructions for running installation JCL and setting up the SMP/E environment.

Running Express installation JCL

This procedure explains how to run JCL to unload BMC Software products from tapes for the Express installation method. If you are using the Custom installation, see “Running JCL for a Custom installation” on page 83.
Before you begin

Ensure that you have generated the JCL as instructed in “Generating installation JCL” on page 78.

Before running the JCL, set NUMBERS OFF on the ISPF Command line.

To run Express installation JCL

1 Review the JCL that the Installation System generated in your HLQ.JCL library (Table 9).

You can modify the JCL if necessary. When you are satisfied that the JCL is correct, proceed to the next step.

Table 9 Generated jobs for a Express installation

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>provides documentation relevant to the unload JCL</td>
</tr>
<tr>
<td>$B04DCMP</td>
<td>decompresses the images from tape sets and creates the data sets used for $B05UNLD</td>
</tr>
<tr>
<td>$B04DWNL</td>
<td>downloads the images from the ESD site and creates the data sets used for $B05UNLD</td>
</tr>
<tr>
<td>$B05UNLD</td>
<td>allocates libraries and unloads the products that you selected for this installation</td>
</tr>
<tr>
<td>LIBUPR</td>
<td>converts certain libraries from lowercase to uppercase</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: This job is automatically created only for the products that offer this conversion. The LIBUPR job is not automatically displayed with the unload jobs.</td>
</tr>
<tr>
<td>$B90SMPE</td>
<td>creates an SMP/E environment for future maintenance</td>
</tr>
<tr>
<td>$B99CLNU</td>
<td>deletes UCLIN libraries that are left from the installation if you do not run $B90SMPE</td>
</tr>
</tbody>
</table>

2 Run the $B04DCMP or $B04DWNL job to decompress or download the product files from the selected media.

3 Run the $B05UNLD job to unload the product data sets.

The product unload is now complete. The product libraries reside in the data sets that you specified in your user options (“Specifying user options” on page 74).

Where to go from here

To set up your SMP/E environment, go to “Setting up the SMP/E environment for Express installations” on page 82.
Most products require customization before you can run them. For more information, see Chapter 5, “Customizing XBM.”

## Setting up the SMP/E environment for Express installations

You need to complete this procedure only if you performed an Express installation.

**NOTE**

If you performed a Custom installation, see “Setting up the SMP/E environment for Custom installations” on page 85.

During Express installation, the Installation System creates the $B90SMPE job, which prepares products and environments for SMP/E maintenance. $B90SMPE builds and populates zones, initializes the SMP/E environment, and allocates and populates SMP/E support data sets and distribution libraries.

**Before you begin**

Verify that the $B90SMPE job is in your **HLQ.JCL** library.

Before running the JCL, set NUMBERS OFF on the ISPF **Command** line.

**To prepare for SMP/E maintenance (Express installations only)**

1. Assign a job class or specify a time parameter that allows sufficient CPU time for the $B90SMPE job to complete.

   The required CPU time varies, depending on how many products you are installing.

2. Run the $B90SMPE job.

   **NOTE**

   The VSMALLOC step in this job might complete with a return code of 8. This return code is normal and does not indicate an error condition.

After $B90SMPE is completed, the SMPLOG data set contains many UCLIN records. You can manage the SMPLOG data set in the following ways:

- Rename the SMPLOG data set following successful completion of $B90SMPE, and allocate a new data set for ongoing SMP/E processing.
Use DISP=OLD instead of DISP=MOD so that existing SMPLOG data set space is rewritten.

Make the SMPLOG a dummy data set by coding either DSN=NULLFILE, or DD DUMMY.

Where to go from here

Most products require customization before you can run them. For more information, see Chapter 5, “Customizing XBM.”

Running JCL for a Custom installation

If you are installing products by using the Custom method, you must complete several tasks that use the JCL that is generated by the Installation System.

1. Check for PTFs that may be in error (page 84).
2. If hold data exists for PTFs in error, move that data to a hold data set (page 84).
3. Set up your SMP/E environment to prepare for installing the product libraries (page 85).
4. Install the products libraries (page 89).
5. Allocate and construct the product data sets (page 91).

Before proceeding, note the following general guidelines for installing BMC products in an SMP/E environment:

- The SMP/E utility is described in these IBM publications:
  - System Modification Program Extended User’s Guide
  - System Modification Program Extended Reference

- BMC products have common components. When installing multiple BMC products into your SMP/E environment, you should install them into one set of target and distribution zones. SMP/E can then control the relationships among the components. Future products (and enhancements to existing products) might also share components that were distributed previously.
You should not apply PTFs that are in error to your system. To determine whether your products have PTFs in error, check the most recent technical bulletins or flashes on the Customer Support website at http://www.bmc.com/support_home.

The technical bulletins might indicate hold data for PTFs that are in error. Use the following procedure (“Processing PTF hold data”) to process them. If none of your products have PTFs in error, proceed to “Setting up the SMP/E environment for Custom installations” on page 85.

Processing PTF hold data

If you determine that hold data exists for PTFs in error, use the following procedure to move that data to a hold data set.
To process PTF hold data

1. Create a data set for hold data processing as described in the IBM book *System Modification Program Extended Reference*.

2. Use the following modification control statements (MCSs) to enter exception SYSMOD hold data in your data set:

```
+++HOLD(_______)
FMID(_______)
DATE(____)
ERROR_REASON(_______)
COMMENT(_______________________)
```

**NOTE**
The Installation System generates JCL members $B50HOLD and $B55LIST in the HLQ.JCL library to process hold data. For descriptions of these jobs, see Table 12 on page 89.

3. To process hold data from your data set and list the exception SYSMODs, use JCL members $B50HOLD and $B55LIST.

4. Review the hardcopy listings to determine whether you need to take any further action.

### Setting up the SMP/E environment for Custom installations

To use SMP/E, you must set up your SMP/E environment to prepare for installing the product libraries. The jobs that are in the HLQ.JCL data set install BMC products into an existing environment or a new environment, depending on your responses on the installation panels.

For users who performed a Custom installation, this section provides step-by-step instructions for preparing an existing environment (“Preparing an existing SMP/E environment” on page 86) or for creating a new environment (“Creating a new SMP/E environment” on page 88.)

**NOTE**
If you performed an Express installation, see “Setting up the SMP/E environment for Express installations” on page 82.
Upon completing the Custom installation panel, the information job $B00DOC is generated. Select this job for browsing or offline printing. Review the contents for critical information about this installation.

**WARNING**

Before running the RECEIVE and APPLY processes on new products or maintenance in an existing environment, run the ACCEPT process on all previously installed products and maintenance.

### Preparing an existing SMP/E environment

During the installation process, if you chose to install your BMC products into an existing SMP/E environment, the Installation System generated JCL in HLQ.JCL to create new target and distribution zones as necessary, and to relate them to an existing global zone. This procedure describes the generated jobs and considerations for running them.

**Before you begin**

Ensure that you have generated the JCL as instructed in “To generate the installation JCL” on page 78.

The SMP/E environment can have several installation configurations that use

- existing global, target, and distribution zones
- existing global zones with new target and distribution zones

Review the following considerations for SMP/E zones.

**Considerations for all SMP/E environments with existing zones**

For all SMP/E environments with existing zones, you must consider the number of directory blocks to allocate. Provide 400 directory blocks for the SMPTLIB. Failure to allocate these directory blocks can result in SMP/E errors. Verify that your DSSPACE parameters are as follows, where your site determines the `xxx` values: DSSPACE `(xxx,xxx,400)`. The last parameter must be 400.

You can use the following sample UCLIN to make the correct allocation:

```
SET BDY(GLOBAL)
UCLIN.
REP OPTIONS(BAB)
DSSPACE(200,120,400)
ENDUCL.
```
Ensure that the global zone is updated with a BMC entry. When new target and distribution zones share the same global zone, an SREL(BOOL) entry must be included in the global zone before you can install your products. The Installation System generates the $B20RELT job, which includes an SREL(BOOL) entry. If an SREL(BOOL) entry is found in your global zone, its presence indicates that BMC products have been installed on your system previously.

**Considerations for existing global, target, and distribution zones**

The target libraries contain multiple products. When multiple products share libraries, use the same high-level prefix for the target libraries that you used previously. Common components between products, such as BBIIS25 or BBISS26, are installed only once, and maintenance needs to be applied only once.

**Considerations for existing global zones with new target and distribution zones**

For a global zone connected to two sets of target and distribution zones, common components are installed twice. Maintenance can be received once in that global zone, but it must be applied to both sets of target and distribution zones. If you want to run multiple products together, you need to concatenate the target libraries.

To install your products and apply maintenance, the new target and distribution zones must be related to the existing global zone. The Installation System generates jobs $B10CCSI and $B25RELT, which allocate new target and distribution zones that are related to the same global zone.

**To prepare the existing SMP/E environment**

1. Review the jobs that are listed in Table 10 and make modifications as necessary.

**Table 10  Jobs to prepare the SMP/E environment**

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B10CCSI</td>
<td>creates new target and distribution zones</td>
</tr>
<tr>
<td></td>
<td>The Installation System generates and requires this job only when you are</td>
</tr>
<tr>
<td></td>
<td>creating separate target and distribution zones.</td>
</tr>
<tr>
<td>$B25RELT</td>
<td>relates new target and distribution zones to an existing global zone and</td>
</tr>
<tr>
<td></td>
<td>updates the global, target, and distribution zones with an SREL(BOOL) entry</td>
</tr>
</tbody>
</table>

2. Submit the jobs in the order listed.

3. Proceed to “Installing the product libraries with SMP/E” on page 89 to install your products in the SMP/E target and distribution zones.
### Creating a new SMP/E environment

If you chose to create a new SMP/E environment during the installation process, the Installation System generated JCL to define new global, target, and distribution zones and non-VSAM data sets to SMP/E. This procedure describes the generated jobs and considerations for running them.

#### Before you begin

Ensure that you have generated the JCL as instructed in “To generate the installation JCL” on page 78.

Before running the JCL, set NUMBERS OFF on the ISPF Command line.

#### To create a new SMP/E environment

1. Review the jobs that are listed in Table 11 and make modifications as necessary.

#### Table 11 Jobs to create a new SMP/E environment

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B05CGBL</td>
<td>creates a global zone</td>
</tr>
<tr>
<td></td>
<td>If AutoCustomization (MAINVIEW products only) is used, the prefix for the product libraries must not be the same as the TSO user ID of the person who is conducting the installation.</td>
</tr>
<tr>
<td>$B10CCSI</td>
<td>creates new, separate target and distribution zones</td>
</tr>
<tr>
<td>$B15CSMP</td>
<td>allocates non-VSAM data sets</td>
</tr>
<tr>
<td>$B20RELT</td>
<td>defines BMC options to be used for RECEIVE, APPLY, and ACCEPT processing and relates new BMC target and distribution zones to a global zone</td>
</tr>
<tr>
<td></td>
<td>To create new target and distribution zones only for BMC products, you must relate these zones to the global zone.</td>
</tr>
<tr>
<td></td>
<td>A return code of 4 and ADD ASSUMED messages are normal. If the job ends with a higher return code, check the output and call BMC Customer Support.</td>
</tr>
</tbody>
</table>

2. Submit the jobs in the order listed.

3. Proceed to “Installing the product libraries with SMP/E” to install your products in the SMP/E target and distribution zones.
Installing the product libraries with SMP/E

This procedure explains how to unload product libraries with SMP/E. Specifically, it explains how to receive, apply, and accept product functions and maintenance, and how to define target and distribution libraries by using jobs that the Installation System generates.

Before you begin

Ensure that you have completed a Custom installation as described in “To generate the installation JCL” on page 78.

To install product libraries

1. Review the jobs that are listed in Table 12 and make modifications as necessary.

**NOTE**

These jobs require special consideration before you submit them. Review all descriptions and notes.

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B04DCMP</td>
<td>decompresses the images from the media and creates the data sets that are used for $B30RECP</td>
</tr>
<tr>
<td>$B30RECP</td>
<td>receives downloaded and decompressed product functions</td>
</tr>
<tr>
<td></td>
<td>You should use the $B35LIST and $B40REJT instructions only if you are installing your products in the same target and distribution libraries as other BMC products.</td>
</tr>
<tr>
<td>$B35LIST</td>
<td>lists the functions received but not applied to the specified target zone</td>
</tr>
<tr>
<td></td>
<td>When you are installing newer functions into existing functions, SMP/E requires a SELECT operand for the following operations:</td>
</tr>
<tr>
<td></td>
<td>• APPLY CHECK ($B75APCK)</td>
</tr>
<tr>
<td></td>
<td>• APPLY ($B76APLY)</td>
</tr>
<tr>
<td></td>
<td>• ACCEPT CHECK ($B80ACCK)</td>
</tr>
<tr>
<td></td>
<td>• ACCEPT ($B81ACPT)</td>
</tr>
<tr>
<td></td>
<td>Obtain the list of function IDs (FMIDs) that are needed to construct the SELECT operand from the $B35LIST output.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The Installation System generates this member only if you are installing BMC products into existing SMP/E data sets.</td>
</tr>
</tbody>
</table>
Table 12  Jobs to install product libraries (part 2 of 2)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
</table>
| $B40REJT | rejects the functions that were previously received, applied, and accepted.  

If a subsequent SMP/E receive of functions contains REWORK dates later than the previously applied and accepted functions, these functions are not processed. Reject these functions selectively.  

**Warning:** Do not reinstall previously installed functions that are shipped with product upgrades.  

**Note:** The Installation System generates this member only if you are installing one or more products in the same target and distribution libraries as other BMC products. |
| $B45RECS | receives the PTFs from the cumulative maintenance tape or program update maintenance tapes  

After $B45RECS is completed, you can review system and error hold information by reviewing the RECEIVE ++HOLD/++RELEASE SUMMARY REPORT. You can also generate the system and error hold information by submitting $B55LIST and viewing the output.  

Because the maintenance tape includes maintenance for most BMC products, output from $B45RECS might include ++VER messages, indicating that maintenance for other products was not received.  

**Note:** These diagnostic messages cause a step return code of 4. |
| $B50HOLD | receives HOLD statements that are stored in your data set.  

**Note:** You should run this job only if you received hold data from BMC Customer Support. (See “Checking for PTFs in error” on page 84.) |
| $B55LIST | lists hold data  

SYSMODs that are held because of errors are released automatically when an APAR or PTF resolves the error. SYSMODs that are held for documentation or action must be released with the BYPASS keyword in the APPLY JCL at the end of the $B76APLY job. |
| $B60DOCL | contains JCL to print PTF documentation from the maintenance tape  

Keep the product documentation, and insert it into the appropriate book. |

2  Submit the jobs in the order that is listed.  

3  Proceed to “Allocating and constructing product data sets with SMP/E” to finish the installation process.
Allocating and constructing product data sets with SMP/E

To complete a Custom installation, you must allocate product data sets in target and distribution zones, and you must apply and accept all functions and maintenance. The Installation System generates JCL that accomplishes these tasks. The following procedures provide considerations and instructions for running the jobs.

Before you begin

Ensure that you have completed the installation process for a Custom installation as described in “Generating installation JCL” on page 78.

The Installation System generates JCL to allocate and construct product data sets. Review the generated jobs that are listed in the following table:

Table 13  Jobs to allocate and construct product data sets

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B18ALOC</td>
<td>allocates target and distribution data sets for products</td>
</tr>
<tr>
<td>$B27FSET</td>
<td>defines FMIDSETs for new target and distribution zones</td>
</tr>
<tr>
<td>$B70DDEF</td>
<td>defines data sets to SMP/E by using DDDEF statements</td>
</tr>
<tr>
<td>$B75APCK</td>
<td>performs APPLY CHECK for all functions and maintenance</td>
</tr>
<tr>
<td>$B76APLY</td>
<td>applies all functions and maintenance</td>
</tr>
<tr>
<td>$B80ACCK</td>
<td>performs ACCEPT CHECK for functions and maintenance for a new installation</td>
</tr>
<tr>
<td>$B81ACPT</td>
<td>accepts functions, PTFs, and APARs during a new installation</td>
</tr>
</tbody>
</table>

To create a product FMIDSET

**NOTE**

Follow these steps only if you selected to create a product FMIDSET on the product installation panels.

1. Review the comments near the beginning of the $B27FSET job.
2. Submit the $B27FSET job.

To allocate target and distribution data sets

1. Review the comments near the beginning of the $B18ALOC job.
2. Submit the $B18ALOC job to allocate target and distribution data sets for products.
Perform the following steps only if you selected to allocate data sets with DDDEF statements on the product installation panels.

3 Review the comments near the beginning of the $B70DDEF job.

4 Submit the $B70DDEF job to allocate data sets with DDDEF statements.

To apply all functions and maintenance

In general, all previously applied SYSMODs should be accepted before applying new maintenance.

1 Perform APPLY checking before applying functions and maintenance.

   A Review the comments near the beginning of the $B75APCK job.

   B Use the list of FMIDs that $B35LIST produced in the APPLY SELECT list.

   C Change the BYPASS keyword as needed to take appropriate action for system holds, as in the following example:

   BYPASS(HOLDSYS(DOC,ACTION,DELETE,DEP))

   This example releases SYSMODs that were held for documentation and action.

   D Submit the $B75APCK job to perform APPLY checking.

   E Review the $B75APCK output to verify that the $B76APLY job will apply the expected functions and maintenance.

   A return code of 4 is normal. If the job ends with a higher return code, check the output and call BMC Customer Support for assistance.

2 Perform APPLY processing:

   A Review the comments near the beginning of the $B76APLY job.

   B Use the same APPLY 'SELECT' list that was used for $B75APCK.

   C Use the same 'BYPASS' that was used for $B75APCK.
D Submit the $B76APLY job to perform APPLY checking.

E Review the $B76APLY output to verify that the $B76APLY job has applied the expected functions and maintenance.

**NOTE**
A return code of 4 is normal. If the job ends with a higher return code, check the output and call BMC Customer Support for assistance.

3 Submit the $B76APLY job to run the apply.

**NOTE**
A return code of 4 is normal. If the job ends with a higher return code, check the output and call BMC Customer Support for assistance.

The target libraries are defined by product line, not by product. Some products within a product line do not need all of the target libraries for that line. For this reason, the SMP/E APPLY might not use some target libraries. You can delete the unused target libraries if you do not plan to install other BMC products. However, do not delete the distribution libraries at this time; they are needed for ACCEPT processing.

**To accept functions, PTFs, and APARs**

**NOTE**
In general, all previously applied SYSMODs should be accepted before applying new maintenance.

1 Perform ACCEPT checking before accepting functions and maintenance:

A Review the comments near the beginning of the $B80ACCK job.

B Use the list of FMIDs that $B35LIST produces in the ACCEPT SELECT list.

C Change the BYPASS keyword to take appropriate action for system HOLDs, as in the following example:

```
BYPASS(HOLDSYS(DOC, ACTION, DELETE, DEP))
```

This example releases SYSMODs held for documentation and action.

D Submit the $B80ACCK job to perform ACCEPT checking.
Review the $B80ACCK output to verify that the $B81ACPT job accepted all the expected functions and maintenance.

**NOTE**
A return code of 4 is normal. If the job ends with a higher return code, check the output and call BMC Customer Support for assistance.

2 Perform ACCEPT processing:

A Review the comments near the beginning of the $B81ACPT job.

B Use the same ACCEPT SELECT list that you used for $B80ACCK.

C Use the same BYPASS that you used for $B80ACCK.

D Submit the $B81ACPT job to perform ACCEPT checking.

E Review the $B81ACPT output to verify that the $B81ACPT job accepted the expected functions and maintenance.

**NOTE**
A return code of 4 is normal. If the job ends with a higher return code, check the output and call BMC Customer Support for assistance.

**Where to go from here**

Most products require customization before you can run them. For more information, see Chapter 5, “Customizing XBM.”
Canceling the installation

When you generate installation JCL, jobs are automatically created that will restore your system to conditions that were in place before the installation. These jobs are located in the installation JCL library that you specified when you provided user options. Table 14 describes these utility jobs.

Table 14  Installation System restore jobs

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
</table>
| $B00DOC  | contains relevant information about the installation and descriptions of generated jobs  
Read this member before submitting any JCL. |
| $B99CLNU | deletes SMP/E input data sets that the $B90SMPE job would have used to populate the SMP/E environment with the products and components that were selected  
Run this job only if $B90SMPE job was not executed. |
| #D98DCSI | deletes global, target, and distribution zones that were created during an SMP/E installation |
| #D98DTGT | removes all product data sets from your SMP/E target libraries |
| #D98USR  | deletes all user data sets that $C05ALOC created |
| #D99DDLB | removes all product data sets from your SMP/E distribution libraries |
| #D98DROP | drops all DB2 data structures and frees all packages and plans that were created during installation  
Run this job only when you want to remove the installed products from your environment. As a safeguard, you must edit the job before it will run. |
| #D99DVSM | deletes all VSAM data sets that $C10VSAM created  
Run this job only when you want to remove the installed products from your environment. As a safeguard, you must edit the job before it will run. |
| #D99RTE  | deletes all runtime data sets that $R05RTEC created |

To cancel an installation

1  Determine which jobs you need to run from Table 14.

2  Run the selected jobs.
Customizing XBM

This chapter contains the following topics:

Overview ................................................................. 97
Specifying customization options ................................. 97
Gathering the required information ................................ 98
Generating Standard customization JCL .......................... 100
Running Standard customization JCL .............................. 103
  Return codes greater than 0 ......................................... 105
  Runtime enablement .................................................. 106
  Where to go from here .............................................. 106

Overview

This chapter provides information about customizing XBM options and generating and running customization JCL.

Specifying customization options

Customization assigns values to default options and prepares a product for execution. BMC supports the following customization procedures:

- Standard customization
- AutoCustomization

XBM supports only the Standard customization method.
Gathering the required information

Before you start customizing XBM, you must gather the information that is described in Table 15.

Table 15  Installation information for XBM (part 1 of 3)

<table>
<thead>
<tr>
<th>Field</th>
<th>Input</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>XBM version information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous Release Version of</td>
<td>current version of XBM installed on your system</td>
<td></td>
</tr>
<tr>
<td>XBM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APF authorization information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APF Data Set Name</td>
<td>name of the APF-authorized data set</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BMC products require APF authorization. Also, if the installation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>task unloads the distribution tape, the install dialog will generate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a job to copy all load modules unloaded from the distribution tape</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to the specified data set.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The APF data set will be used as the target load library or STEPLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>in all other install jobs. It will be used in place of the load</td>
<td></td>
</tr>
<tr>
<td></td>
<td>library created when the distribution tape was unloaded.</td>
<td></td>
</tr>
<tr>
<td>APF Data Set Block Size</td>
<td>block size of the APF-authorized data set</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If an APF-authorized library is specified and the install dialog</td>
<td></td>
</tr>
<tr>
<td></td>
<td>will unload the distribution tape, specify the APF-authorized block</td>
<td></td>
</tr>
<tr>
<td></td>
<td>size. The install system will generate an IEBCOPY job with a COPYMOD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>statement. The unloaded load modules are blocked at 23476. The</td>
<td></td>
</tr>
<tr>
<td></td>
<td>install system will reblock to the specified APF data set block size.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 15 Installation information for XBM (part 2 of 3)

<table>
<thead>
<tr>
<th>Field</th>
<th>Input</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XBM general information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Identifier</td>
<td>identifier for your XBM system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This field is used as the XBM subsystem ID and as an identifier for your XBM started task.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you are installing XBM for use on multiple LPARs or in a sysplex environment, use a generic XBM subsystem ID and then tailor your XBM subsystems so that they have a unique subsystem identifier. See “Completing XBM installation” on page 162 for more information.</td>
<td></td>
</tr>
<tr>
<td>VOLSER for VSAM data sets</td>
<td>volume serial number where you want all generated VSAM data sets to reside</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> You can edit this value before submitting the $C10VSAM JCL if you want the VSAM data sets to reside on different volumes.</td>
<td></td>
</tr>
<tr>
<td>For SMS — VSAM Storage Class</td>
<td>for an SMS-managed data set, the class to use for obtaining storage-related information (such as record length, block size, and space units)</td>
<td></td>
</tr>
<tr>
<td>For SMS — VSAM Management Class</td>
<td>for an SMS-managed data set, the class to use for obtaining information related to data management (such as migration, and backup criteria)</td>
<td></td>
</tr>
<tr>
<td>For SMS—VSAM Data Class</td>
<td>for an SMS-managed data set, the class to use for obtaining data-related information (such as SPACE, LRECL, BLKSIZE, and BUFNO)</td>
<td></td>
</tr>
<tr>
<td>XBM for Storage Systems Integration</td>
<td>whether you will use SIBBATCH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If SIBBATCH is to be used by XBM, select this option to enter the SIBBATCH program location.</td>
<td></td>
</tr>
<tr>
<td><strong>XBM repository information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VSAM Repository High-level Qualifier</td>
<td>high-level qualifier (25 characters or less) for the XBM repository data sets</td>
<td></td>
</tr>
<tr>
<td>Size of VSAM Repository data sets (in CYLS)</td>
<td>size of each repository data set in cylinders</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A default of 1 cylinder is normally sufficient to hold the XBM object definitions.</td>
<td></td>
</tr>
<tr>
<td>Number of VSAM Repository Data Sets</td>
<td>number of repository data sets that will be generated when the $C10VSAM job is executed</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> BMC recommends that you specify at least two data repositories on different volumes. See “Repository data sets” on page 48 for more information.</td>
<td></td>
</tr>
</tbody>
</table>
The Standard customization procedure generates JCL that assigns initial operating parameter values to products that are not customized by using AutoCustomization.

**Before you begin**

Ensure that you have unloaded your BMC products as instructed in “Generating installation JCL” on page 78.

Run the installation JCL as instructed in “Running JCL for an Express installation” on page 80 or “Running JCL for a Custom installation” on page 83. Some of the customization steps for some products require installed product files.

---

**NOTE**

If you are installing XBM with other products, you will need additional information for those products. For more information, see the installation guides for those products.

---

**Generating Standard customization JCL**

The Standard customization procedure generates JCL that assigns initial operating parameter values to products that are not customized by using AutoCustomization.

**Before you begin**

Ensure that you have unloaded your BMC products as instructed in “Generating installation JCL” on page 78.

Run the installation JCL as instructed in “Running JCL for an Express installation” on page 80 or “Running JCL for a Custom installation” on page 83. Some of the customization steps for some products require installed product files.
To customize installed products with Standard customization

1. From the Installation System’s Main Menu, choose Product Customization and press Enter.

2. If you are installing products that require both types of customization, the Product and Solutions Verification panel lists the products that you selected to install and indicates the appropriate customization procedure for each one. If you are prompted to select the customization type, select Select Standard customization to customize products.

   If you are installing products that all use Standard customization, the Installation System will go into Standard customization without prompting you for the customization type.

   The Installation System presents a series of panels that request information about your current system and the products that you are installing. Be prepared to supply release levels of installed products, library names and locations, and other information.

3. When prompted, supply the requested information or verify the displayed information. To continue, press Enter.

   **NOTE**
   For more information about the options on each panel, press F1 to access the online Help that is available with the Installation System.

When you have completed the customization panels, the Final Tasks panel is displayed.

**Figure 10 Install System - Final Tasks panel**

Command ===> _________________________________________________________________

Select one or more options then press Enter to continue.

- Review Customization Review Values Selected During Customization.
- JCL Generation Generate Jobs to Perform Customization.
4 From the Final Tasks panel, select JCL Generation.

Choose this option to generate the customization JCL. After you choose this option, a panel similar to the panel shown in Figure 11 is displayed. If you choose to generate installation JCL, the Installation System generates the JCL used to customize the product and components.

NOTE

If the jobs already exist in your library, the Installation System will overwrite them if you generate the installation JCL.

Figure 11 Install System JCL Generation Option panel

![Install System JCL Generation Option Panel]

After the Installation System generates the JCL, press Enter to continue. The Installation System then displays the name of the library that contains the JCL. Press Enter again to display an Edit member list that you can use to edit or submit the generated JCL, as necessary. See “Running Standard customization JCL” for more information about these jobs.

5 When you have finished working with the options at the Final Tasks panel, press F3 to return to the Main Menu.

6 Run the customization JCL as directed in “Running Standard customization JCL” on page 103.
Running Standard customization JCL

This procedure explains how to run the JCL that was generated when you followed the Standard Customization panels.

The customization jobs that are generated vary, depending on the products that you install and the customization features that you choose. The Installation System generates customization JCL in your HLQ.JCL library. Table 16 lists typical customization jobs. Review the comment section near the beginning of each generated job for function details.

Table 16 Generated JCL for Standard customization (part 1 of 3)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$C00DOC</td>
<td>provides documentation relevant to the customization JCL</td>
</tr>
<tr>
<td>$C05ALOC</td>
<td>creates the user libraries that contain members used to execute and</td>
</tr>
<tr>
<td></td>
<td>customize the products</td>
</tr>
<tr>
<td>$C10VSAM</td>
<td>defines the VSAM data sets that are required for the products that you</td>
</tr>
<tr>
<td></td>
<td>have selected for this installation</td>
</tr>
<tr>
<td>$C15PSWD</td>
<td>applies product or solution passwords in preparation for execution</td>
</tr>
<tr>
<td>$C20APF</td>
<td>copies load modules to an APF-authorized library</td>
</tr>
<tr>
<td>$C26XIMP</td>
<td>copies the XIM parameter member to the data PDS</td>
</tr>
<tr>
<td>$C30DOPT</td>
<td>creates and assembles the installation options modules for the products</td>
</tr>
<tr>
<td></td>
<td>that you have selected for this installation</td>
</tr>
<tr>
<td></td>
<td>You should verify that the parameter names and the data definition names</td>
</tr>
<tr>
<td></td>
<td>in this job are compatible with your site requirements.</td>
</tr>
<tr>
<td>$C31CPYS</td>
<td>copies the generated RECOVERY MANAGER for DB2 options to the ARM$OPTS member</td>
</tr>
<tr>
<td></td>
<td>in the HLQ.*.DBCNTL file</td>
</tr>
<tr>
<td>$C31HIST</td>
<td>allocates the &amp;DTVSGSPN DB2 history and LOGRANGE files if they do not exist</td>
</tr>
<tr>
<td>$C32SOPT</td>
<td>creates and assembles the installation options module for BMCSORT, the</td>
</tr>
<tr>
<td></td>
<td>BMC sort engine</td>
</tr>
<tr>
<td>$C34INIT</td>
<td>establishes the base AUTOEDIT variables in Control-O</td>
</tr>
<tr>
<td>$C35BNDI</td>
<td>binds the plan that is needed to install DB2 products</td>
</tr>
<tr>
<td></td>
<td>This job processes the installation worklist that contains data definition</td>
</tr>
<tr>
<td></td>
<td>language (DDL) and BIND plan statements.</td>
</tr>
<tr>
<td>$C38ALTR</td>
<td>alters the tables, adding columns to each table if they do not already exist</td>
</tr>
<tr>
<td>$C38INDX</td>
<td>builds additional indexes for existing common utility tables</td>
</tr>
<tr>
<td>$C39ALTR</td>
<td>alters the common utility tables to the latest configuration</td>
</tr>
<tr>
<td>$C40ALTR</td>
<td>alters the ALTER or CHANGE MANAGER product tables and builds additional</td>
</tr>
<tr>
<td></td>
<td>objects</td>
</tr>
</tbody>
</table>
Running Standard customization JCL

Table 16  Generated JCL for Standard customization (part 2 of 3)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$C40INST</td>
<td>executes a series of worklists to create the DB2 environment for the products that you selected for this installation. This job creates DB2 objects and binds application plans. The BMC product load library must be APF authorized for this job to complete successfully.</td>
</tr>
<tr>
<td>$C45CNTL</td>
<td>copies generated control members to the CNTL library</td>
</tr>
<tr>
<td>$C45COMD</td>
<td>assembles the command table for BMC CATALOG MANAGER for DB2 product</td>
</tr>
<tr>
<td>$C45COPY</td>
<td>copies JCL generated members to the libraries where they will be used</td>
</tr>
<tr>
<td>$C46EDIT</td>
<td>tailors job skeletons that are copied to the CNTL library</td>
</tr>
<tr>
<td>$C56LDRU</td>
<td>loads the Japanese rule set to the product RULES table</td>
</tr>
<tr>
<td>$C60GRNT</td>
<td>grants user authority to the various product tables and plans</td>
</tr>
<tr>
<td>$C63MIGP</td>
<td>migrates data for the Performance products</td>
</tr>
<tr>
<td>$C64INIT</td>
<td>initializes and allocates various files that are required for the BMC products for IMS</td>
</tr>
<tr>
<td>$C65MIG</td>
<td>unloads data from a previous release of the product</td>
</tr>
<tr>
<td>$C66MIG</td>
<td>loads data from a previous release of the product into the new environment</td>
</tr>
<tr>
<td>$C66TBLD</td>
<td>loads the initialization data for DASD MANAGER PLUS and loads the CATALOG MANAGER product tables</td>
</tr>
<tr>
<td>$C67COPY</td>
<td>produces an image copy of the new environment after migrating data from a previous release</td>
</tr>
<tr>
<td>$C68ALP</td>
<td>migrates data from previous releases of the BMC Log Master for DB2 product to the new environment in the specified DB2 subsystem</td>
</tr>
<tr>
<td>$C68DOM</td>
<td>migrates VSAM data for BMC Performance products</td>
</tr>
</tbody>
</table>
| $C70IVP | runs the installation verification procedure (IVP) for several BMC Utility and Backup and Recovery products. This job performs the following tasks:  
  - builds all required DB2 objects  
  - loads the required data  
  - verifies that the $B90SMPE job (Express installation) or the $B76APLY job (Custom installation) ran to create an SMP/E environment for maintenance  
  - deletes the temporary database that it uses for its own testing  
Note: BMC recommends that you do not run this job until after you have completed all other customization and configuration tasks.  
See “Setting up the SMP/E environment for Express installations” on page 82 for more information on the $B90SMPE job. |
| $C79BBVC | runs the BMC StopX37/II stand-alone customization |
Before you begin

Before running the customization JCL, complete the following tasks:

- Ensure that you have generated the customization JCL as instructed in “Generating Standard customization JCL” on page 100.
- Before running JCL, set NUMBERS OFF on the ISPF Command line.
- Some products have specific requirements for submitting the customization batch jobs. For each product that you are installing, check the following sources to determine specific requirements:
  - the $C00DOC member of the installation batch jobs
  - release notes, flashes, and technical bulletins for the product
  - additional customization procedures in this chapter

To run standard customization JCL

1. Review the generated customization jobs in your HLQ JCL library.

   You can modify the JCL if necessary. When you are satisfied that the jobs are correct, proceed to the next step.

2. Run the jobs in the order listed (or as instructed in $C00DOC or other customization procedures).

Return codes greater than 0

Return codes greater than 0 are specific to the job that is run and the products that are referenced. Refer to the comment block near the beginning of each customization job and its members for information about return codes greater than 0.

The bind steps of customization jobs for some products might generate return code 4. In most cases, return code 4 does not indicate a problem with your installation.
**Runtime enablement**

If you are using the runtime enablement option, you will run the $R05RTEC job that creates the runtime enablement data sets when you have successfully completed the customization jobs.

---

**NOTE**

BMC Software recommends that you apply any available maintenance before you run the $R05RTEC job.

---

**Where to go from here**

If you have not already done so, you should apply passwords next. For more information, see Chapter 6, “Applying product passwords.”

Also, after generating and running your customization jobs, BMC strongly recommends that you apply maintenance to your installed products to ensure that your products are running at the most current level. For information about applying maintenance, see Chapter 7, “Applying maintenance.”
## Applying product passwords

This chapter contains the following topics:

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<th>Page</th>
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<td>107</td>
</tr>
<tr>
<td>How licensing works</td>
<td>108</td>
</tr>
<tr>
<td>Overview of the Product Authorization utility</td>
<td>110</td>
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<tr>
<td>Products that the Installation System supports</td>
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<td>CPU password worksheet</td>
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<td>Applying passwords with the online interface</td>
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<td>Starting the online Product Authorization utility</td>
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<td>Processing a permanent password for an existing processor</td>
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<td>Adding authorization for a new processor</td>
<td>122</td>
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<td>Deleting authorization for a processor</td>
<td>123</td>
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<td>Replacing authorization for a processor</td>
<td>124</td>
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<tr>
<td>Modifying authorization for an existing processor</td>
<td>126</td>
</tr>
<tr>
<td>Resetting authorization for all processors</td>
<td>127</td>
</tr>
<tr>
<td>Processing a temporary password</td>
<td>128</td>
</tr>
<tr>
<td>Displaying product authorization</td>
<td>129</td>
</tr>
<tr>
<td>Displaying current processor information</td>
<td>131</td>
</tr>
<tr>
<td>Applying passwords with the batch interface</td>
<td>132</td>
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<tr>
<td>Running the batch Product Authorization utility</td>
<td>132</td>
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<tr>
<td>Using control statements and keywords</td>
<td>137</td>
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<tr>
<td>Checking return codes</td>
<td>138</td>
</tr>
</tbody>
</table>

### Overview

When processing a license agreement for a product, Customer Password Response of BMC Software issues *CPU authorization passwords*. These passwords authorize specific CPUs (also referred to as *processors*) to run the licensed product. Because BMC licenses its products for use on individual CPUs, the passwords are product specific and CPU specific (one license per product per CPU). You must also have a password to delete or replace an authorized CPU.
You use the BMC Product Authorization utility to apply passwords and to change your CPU configuration. You can apply passwords in either of the following ways:

- as part of an online procedure
- in a batch interface that uses a job which is supplied on the product distribution tape

**NOTE**

The Product Authorization utility does not apply to all BMC products. Some products are authorized during product customization. To determine whether unique licensing requirements and authorization procedures are applicable, review your product’s release notes.

This chapter describes the process that you use to apply passwords and to reconfigure your CPU, permanently or temporarily. If you have questions or concerns about the Product Authorization utility or the authorization process, contact your BMC sales representative.

### How licensing works

BMC offers **temporary passwords** and **permanent passwords**.

#### Temporary passwords

During a trial period for a BMC product, you can install and use the product on any CPU by using the temporary password that you obtained from your BMC sales representative. (You can also obtain a temporary password in other special circumstances, such as when a hardware failure prevents you from using an authorized CPU.) Because each temporary password has an expiration date (typically 30 days after the password is issued), you should apply temporary passwords as soon as possible after receiving them.

Valid passwords can include the following characters:

- alphanumeric character set, excluding the letters I and O to avoid confusion with the numbers one (1) and zero (0)
- equal sign (=), “at” sign (@), and plus sign (+)

**NOTE**

If your keyboard does not have the “at” sign (@), you can use the asterisk (*) in place of @. You can use these two characters (@ and *) interchangeably when typing passwords.
Permanent passwords

When you finish the trial and want to obtain a product license, the following rules apply:

- You must purchase a product license for each CPU on which you will run the product.
- BMC Software Customer Password Response issues a permanent password for each combination of CPU and licensed product.
- To enable a product on a CPU, you must add the permanent password that is issued for that CPU. You do not need to reinstall and retest the product.
- You can install multiple passwords in the same password library. This capability lets you use the same password library to run a product on multiple CPUs or to install a product at a central site and run it at remote sites.

**NOTE**

BMC expect to find passwords in the library that is indicated in the product BMCPSWD DD statement or in the product load library. Passwords are saved in the corresponding library during execution of the installation dialog.

BMC also issues permanent passwords when you need to delete or replace a CPU or to modify the properties of a CPU or the product authorization.

**NOTE**

A password is an activation key for the software license, not the software license itself.

You do not need to apply passwords or update CPU authorization when you install product maintenance or version upgrades. Although the Product Authorization utility is not required for product maintenance and version upgrades, you must consider certain issues that are associated with these upgrades. For more information, see “Product maintenance or version upgrades” on page 113.

Scenarios for obtaining passwords

Table 17 on page 110 provides details about each situation in which you must obtain passwords. For each scenario, the table indicates the type of password that you need (temporary or permanent), what the password does, and how to obtain it.
Overview of the Product Authorization utility

You must use the Product Authorization utility in the following situations:

- for product trials and permanent licensing
- when upgrading to a new CPU
- when an authorized CPU fails

If you have installed the Product Authorization utility and have created the password library, you can apply the new passwords before you completely install the product. Also, you can apply the passwords even if the product is not yet running on a specific CPU. For example, your installation process might require that you install and run the product on a test system before migrating the product to the production system. In that case, you can apply the password for the production system CPU, even though the product is not yet running there.

Table 17  Password scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Password type</th>
<th>Password function</th>
<th>How to obtain</th>
</tr>
</thead>
<tbody>
<tr>
<td>You want to begin a free trial period.</td>
<td>temporary</td>
<td>temporarily bypasses authorization checking and lets you run the product on any CPU for a limited time</td>
<td>BMC sales representative</td>
</tr>
<tr>
<td>You purchase a license for a new product.</td>
<td>permanent</td>
<td>adds a designated CPU to the list of CPUs that are authorized to run a licensed product</td>
<td>BMC sales representative or Customer Password Response (800 841 2031)</td>
</tr>
<tr>
<td>You stop using an authorized CPU.</td>
<td>permanent</td>
<td>removes a designated CPU from the list of CPUs that are authorized to run a licensed product</td>
<td>BMC sales representative or Customer Password Response (800 841 2031)</td>
</tr>
<tr>
<td>You upgrade to a new CPU.</td>
<td>permanent</td>
<td>authorizes the transfer of a license from one CPU to another CPU</td>
<td>BMC sales representative or Customer Password Response (800 841 2031)</td>
</tr>
<tr>
<td>You want to run the product on an additional CPU.</td>
<td>permanent</td>
<td>adds a designated CPU to the list of CPUs that are authorized to run a licensed product</td>
<td>BMC sales representative or Customer Password Response (800 841 2031)</td>
</tr>
<tr>
<td>The authorized CPU is not available because of an emergency (such as hardware failure).</td>
<td>temporary</td>
<td>temporarily bypasses authorization checking and lets you run the product on any CPU for a limited time</td>
<td>BMC sales representative, Customer Password Response (800 841 2031), or BMC Customer Support (800 537 1813)</td>
</tr>
</tbody>
</table>
When you apply passwords, the Product Authorization utility builds or updates the product authorization tables. Those tables contain entries that define the authorization for the relevant products. The utility also uses the applied passwords to validate software licenses. The types of product authorization tables are as follows:

- When you install or apply a permanent password, the utility builds or updates a permanent product authorization table. The permanent table controls which CPUs are licensed to run the product, based on serial, model, and submodel numbers.

- When you apply a temporary password, the utility builds or updates a temporary product authorization table.

For more information about permanent and temporary passwords, see “How licensing works” on page 108.

Product authorization tables are product specific and are identified by a three-character product code (prd in the following examples):

- prdTBL3P (permanent)
- prdTBL3T (temporary)

**Problem involving authorization table installation**

Do not install the product authorization tables into load modules that are extended partitioned data sets (PDSEs). PDSE files cannot contain load modules and data type objects in the same file. The product authorization tables are data files and typically are stored in the product load library. Installing product authorization tables into load module PDSEs causes a failure when you try to apply a password to the product library.

**Detailed error message**

This failure issues the following error messages:

```
13.10.20 JOB05439 IE0036I
  002-CC,1GC0005E,RDACAL2S,BLFSEC3B,SYSLIB,582B,DEVS97.
13.10.21 JOB05439 IEA9951 SYMPTOM DUMP OUTPUT
  SYSTEM COMPLETION CODE=002  REASON CODE=000000CC
```
Solution

BMC plans to correct this problem in a future version of the Product Authorization utility. To avoid the problem now, specify a library that does not contain the load modules for the product authorization tables. Allocate a separate PDS or PDSE for the authorization table, and specify this PDS or PDSE when installing the password. If you have questions about the problem or the workaround, contact BMC Customer Support.

Product trials and permanent licensing

Permanent passwords update the permanent authorization table for a product. Each permanent password authorizes one of the functions that are described in Table 18. When you apply a permanent password, the Product Authorization utility automatically recognizes the function of the password and prompts you accordingly.

Table 18 Permanent password functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add</td>
<td>authorizes one new CPU to run the product</td>
</tr>
<tr>
<td>Delete</td>
<td>removes one CPU from the product authorization table, preventing that CPU from running the product</td>
</tr>
<tr>
<td>Replace</td>
<td>replaces one CPU in the table with another CPU, allowing the new CPU to run the product in place of the old CPU</td>
</tr>
<tr>
<td>Modify</td>
<td>modifies one or more properties of one CPU that exists in the product authorization table</td>
</tr>
<tr>
<td>Reset</td>
<td>modifies the global properties of the product authorization tables</td>
</tr>
</tbody>
</table>

CPU upgrades

When you upgrade to a new CPU, you must obtain a new permanent password for each product that you want to use on that CPU. When you install the new password, the old entry in the authorization table for the product is replaced. The new table entry defines the authorization for the product.

CPU failures

If a hardware failure or a disaster-recovery situation prevents the use of a licensed CPU, BMC can provide a temporary password that lets the product run on a backup CPU for a limited time. Before the temporary password expires, you must acquire a permanent password for the backup CPU or you must resume using the original CPU. At the end of the grace period, you can no longer run the affected product on the backup CPU. If the grace period ends, you must obtain a new password to reset the grace period.
**Overview of the Product Authorization utility**

**Chapter 6 Applying product passwords**

**Updating product authorization tables**

To trigger the grace period, the license validation process must update the authorization tables. If the password library must be write-protected, problems could occur with updates. To avoid problems, you can place the authorization tables in another data set and concatenate that data set to the password library.

The concatenated authorization table library should have the same DCB attributes as the product load library. (The RECFM for the table library must be U.)

---

**TIP**

If you have several BMC products, you might want to dedicate one library that includes all authorization tables for all products.

---

Before updating the library that contains the authorization tables, the license-validation process determines whether the data set is in LNKLST. If the data set is in LNKLST, the license-validation process does not attempt an update.

**Running a product on an unlicensed processor**

When you run a product on an unlicensed processor, a 15-calendar-day grace period can be triggered. When this grace period ends, the product will not run or will run with diminished functionality.

---

**NOTE**

The product will continue to function normally when you run it on a licensed CPU, even if the grace period has been triggered or has ended.

---

To prevent this situation, you should obtain a RESET password from BMC Customer Password Response. If you apply the Reset password before the grace period ends, the password updates the product authorization table and makes another 15-calendar-day grace period available.

When the grace period is triggered, the Product Authorization utility (online or in batch mode) and the affected product issue a message that advises you of the expiration date.

**Product maintenance or version upgrades**

Installing a new maintenance level or upgrading the version or release level of a product has no effect on product authorization. No new passwords are required. However, you must ensure that your authorization tables reside in the new production libraries.
If you install products in a test environment before moving them to production, the product authorization tables must also reside in the test libraries. If you try to run a product on a different CPU, that CPU must also be licensed. Copy the product authorization tables from the old library to the new library that contains the product maintenance or upgrade.

Although the product authorization tables typically reside in the password library, these tables are not load modules. If you are running ISPF version 4.2 or later, you might not be able to copy these tables by using the ISPF Move/Copy utility (option 3.3). You might receive a STOW error or one or more of the following error messages:

IEW2515W 4731 DIRECTORY ENTRY FOR prdTBL3n IDENTIFIED BY DDNAME ISPddname IS NOT MARKED AS LOAD MODULE.

IEW2522E 470E MEMBER prdTBL3n IDENTIFIED BY DDNAME ISPddname... IS NOT A LOAD MODULE- (INVALID RECORD TYPE).

IEW2307S 1032 CURRENT INPUT MODULE NOT INCLUDED BECAUSE OF INVALID DATA.

COPY FAILED FOR MEMBER prdTBL3n. FAILURE IN IEBBIND INCLUDE, RETURN CODE 8 REASON CODE 83000507

In these messages, the variable prd is the three-character product code and n is P (permanent) or T (temporary). For more information, see “How licensing works” on page 108.

If you receive any of these messages, use the IEBCOPY utility to copy the product authorization tables. Do not use the IEBCOPY COPYMOD parameter when copying the tables.

Products that the Installation System supports

Table 19 on page 115 lists the products and product components that the Installation System supports. The table provides the following information:

- complete BMC product name
- three-character product code that is referenced in the product security panel
- security or licensing mechanism that is in effect for each product:
  - V3 password means that the product is accessible through the typical BMC security panel and JCL.
  - BBKeys means that the product is accessible exclusively through the AutoCustomization process.
## Table 19  Installation System supported products and components (part 1 of 3)

<table>
<thead>
<tr>
<th>Product or component name</th>
<th>Product code</th>
<th>Security (licensing) access</th>
</tr>
</thead>
<tbody>
<tr>
<td>3270 SUPEROPTIMIZER/CICS</td>
<td>CSO</td>
<td>V3 password</td>
</tr>
<tr>
<td>Administrative Assistant for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>AAD</td>
<td>V3 password</td>
</tr>
<tr>
<td>ALTER for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ALU</td>
<td>V3 password</td>
</tr>
<tr>
<td>Apply Plus</td>
<td></td>
<td>not applicable</td>
</tr>
<tr>
<td>See High-speed Apply Engine</td>
<td></td>
<td>not applicable</td>
</tr>
<tr>
<td>APPTUNE for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ASQ</td>
<td>V3 password</td>
</tr>
<tr>
<td>Backup and Recovery Solution for IMS&lt;sup&gt;®&lt;/sup&gt;</td>
<td>BRI</td>
<td>V3 password</td>
</tr>
<tr>
<td>BMCDSN</td>
<td>ABU</td>
<td>none</td>
</tr>
<tr>
<td>CATALOG MANAGER for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ACT</td>
<td>V3 password</td>
</tr>
<tr>
<td>CATALOG MANAGER for DB2&lt;sup&gt;®&lt;/sup&gt; (Browse only)</td>
<td></td>
<td>no password required</td>
</tr>
<tr>
<td>CHANGE ACCUMULATION PLUS</td>
<td>CAP</td>
<td>V3 password</td>
</tr>
<tr>
<td>CHANGE MANAGER for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ACM</td>
<td>V3 password</td>
</tr>
<tr>
<td>CHANGE RECORDING FACILITY for IMS&lt;sup&gt;®&lt;/sup&gt;</td>
<td>CRF</td>
<td>V3 password</td>
</tr>
<tr>
<td>CHECK PLUS for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ACK</td>
<td>V3 password</td>
</tr>
<tr>
<td>CMF MONITOR</td>
<td>BFZ</td>
<td>V3 password</td>
</tr>
<tr>
<td>COPY PLUS for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ACP</td>
<td>V3 password</td>
</tr>
<tr>
<td>Cross-System Image Manager</td>
<td>XIM</td>
<td>V3 password</td>
</tr>
<tr>
<td>DASD MANAGER PLUS for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ASU</td>
<td>V3 password</td>
</tr>
<tr>
<td>DATA PACKER for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>DPD</td>
<td>V3 password</td>
</tr>
<tr>
<td>Database Administration for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>DAD</td>
<td>V3 password</td>
</tr>
<tr>
<td>DATABASE INTEGRITY PLUS</td>
<td>DBI</td>
<td>V3 password</td>
</tr>
<tr>
<td>Database Performance for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>DFD</td>
<td>V3 password</td>
</tr>
<tr>
<td>BMC Discovery for z/OS</td>
<td>MDZ</td>
<td>V3 password</td>
</tr>
<tr>
<td>Energizer for CICS</td>
<td>ECS</td>
<td>V3 password</td>
</tr>
<tr>
<td>EXTENDED BUFFER MANAGER for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>XBM</td>
<td>V3 password</td>
</tr>
<tr>
<td>EXTENDED BUFFER MANAGER for IMS&lt;sup&gt;®&lt;/sup&gt;</td>
<td>XBI</td>
<td>V3 password</td>
</tr>
<tr>
<td>FAST REORG FACILITY</td>
<td>FRF</td>
<td>V3 password</td>
</tr>
<tr>
<td>FAST REORG FACILITY/EP</td>
<td>HRF</td>
<td>V3 password</td>
</tr>
<tr>
<td>High-speed Apply Engine</td>
<td>APT</td>
<td>V3 password</td>
</tr>
<tr>
<td>IMAGE COPY PLUS</td>
<td>ICP</td>
<td>V3 password</td>
</tr>
<tr>
<td>BMC Impact Integration for z/OS</td>
<td>BIZ</td>
<td>V3 password</td>
</tr>
<tr>
<td>LOADPLUS for DB2</td>
<td>AMU</td>
<td>V3 password</td>
</tr>
<tr>
<td>LOADPLUS for IMS</td>
<td>LDP</td>
<td>V3 password</td>
</tr>
<tr>
<td>LOADPLUS/EP for IMS</td>
<td>HLD</td>
<td>V3 password</td>
</tr>
<tr>
<td>Log Master for DB2&lt;sup&gt;®&lt;/sup&gt;</td>
<td>ALP</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for WebSphere MQ Integrator</td>
<td>MQJ</td>
<td>V3 password</td>
</tr>
</tbody>
</table>
### Table 19  Installation System supported products and components (part 2 of 3)

<table>
<thead>
<tr>
<th>Product or component name</th>
<th>Product code</th>
<th>Security (licensing) access</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINVIEW AutoOPERATOR Access NV (version 6.4 or later)</td>
<td>BKG</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW AutoOPERATOR for CICS (version 6.4 or later)</td>
<td>BCC</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW AutoOPERATOR for IMS® (version 6.4 or later)</td>
<td>BCD</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW AutoOPERATOR for SAP High Availability (version 6.4 or later)</td>
<td>SHA</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW AutoOPERATOR for WebSphere MQ (version 6.4 or later)</td>
<td>BCI</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW AutoOPERATOR for z/OS (version 6.4 or later)</td>
<td>BCE</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW AutoOPERATOR TapeSHARE (version 6.4 or later)</td>
<td>BCG</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW FOCAL POINT</td>
<td>BDQ</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for CICS</td>
<td>BDR</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for DB2® - Data Collector</td>
<td>SPD or BDS</td>
<td>V3 password</td>
</tr>
</tbody>
</table>

**Note:** If you have a license to use System Performance for DB2, use the product password code SPD. If you do not have a license for System Performance for DB2, use the product password code BDS.

<table>
<thead>
<tr>
<th>Product or component name</th>
<th>Product code</th>
<th>Security (licensing) access</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINVIEW for DBCTL</td>
<td>DBC</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for IMS® Offline</td>
<td>IOF</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for IMS® Online</td>
<td>ION</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for IP</td>
<td>BFX</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for Linux - Servers</td>
<td>MML</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for z/OS</td>
<td>BEH</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for UNIX System Services</td>
<td>BFH</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for VM Systems Cloning</td>
<td>MTA</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for VTAM</td>
<td>BFW</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for WebSphere Application Server</td>
<td>MVW</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW for WebSphere MQ</td>
<td>BCL</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW Infrastructure</td>
<td>BFV</td>
<td>none</td>
</tr>
<tr>
<td>MAINVIEW Storage Resource Manager</td>
<td>BRO</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW SYSPROG Services</td>
<td>BEW</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW Transaction Analyzer</td>
<td>MTA</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAINVIEW VistaPoint</td>
<td>BEZ</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAXM Database Advisor for IMS®</td>
<td>MXA</td>
<td>V3 password</td>
</tr>
</tbody>
</table>
Table 19  Installation System supported products and components (part 3 of 3)

<table>
<thead>
<tr>
<th>Product or component name</th>
<th>Product code</th>
<th>Security (licensing) access</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXM Reorg for IMS®</td>
<td>MXC</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAXM Reorg for IMS® with Online/Defrag Feature</td>
<td>MXB</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAXM Reorg/EP for IMS®</td>
<td>MXP</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAXM Reorg/EP for IMS® with Online/Defrag Feature</td>
<td>MXH</td>
<td>V3 password</td>
</tr>
<tr>
<td>MAXM Reorg/Online for IMS®</td>
<td>MXO</td>
<td>V3 password</td>
</tr>
<tr>
<td>OPERTUNE for DB2®</td>
<td>DDT</td>
<td>V3 password</td>
</tr>
<tr>
<td>PACLOG for DB2®</td>
<td>ALM</td>
<td>V3 password</td>
</tr>
<tr>
<td>PATROL for WebSphere MQ for z/OS and OS/390</td>
<td>WMZ</td>
<td>V3 password</td>
</tr>
<tr>
<td>POINTER CHECKER PLUS</td>
<td>PCP</td>
<td>V3 password</td>
</tr>
<tr>
<td>Pool Advisor for DB2</td>
<td>PMD</td>
<td>V3 password</td>
</tr>
<tr>
<td>PREFIX RESOLUTION PLUS</td>
<td>PRP</td>
<td>V3 password</td>
</tr>
<tr>
<td>R+/CHANGE ACCUM for DB2®</td>
<td>ACA</td>
<td>V3 password</td>
</tr>
<tr>
<td>RECOVER PLUS for DB2®</td>
<td>AFR</td>
<td>V3 password</td>
</tr>
<tr>
<td>Recovery Management for DB2®</td>
<td>RMD</td>
<td>V3 password</td>
</tr>
<tr>
<td>RECOVERY MANAGER for DB2®</td>
<td>ARM</td>
<td>V3 password</td>
</tr>
<tr>
<td>RECOVERY MANAGER for IMS®</td>
<td>IRM</td>
<td>V3 password</td>
</tr>
<tr>
<td>RECOVERY PLUS for IMS®</td>
<td>RVP</td>
<td>V3 password</td>
</tr>
<tr>
<td>REORG PLUS for DB2®</td>
<td>ARU</td>
<td>V3 password</td>
</tr>
<tr>
<td>RxD2/FlexTools</td>
<td>BEY</td>
<td>V3 password</td>
</tr>
<tr>
<td>RxD2/LINK</td>
<td>BEX</td>
<td>V3 password</td>
</tr>
<tr>
<td>SECONDARY INDEX UTILITY</td>
<td>SIU</td>
<td>V3 password</td>
</tr>
<tr>
<td>SECONDARY INDEX UTILITY/EP</td>
<td>HIU</td>
<td>V3 password</td>
</tr>
<tr>
<td>SNAPSHOT UPGRADE FEATURE for DB2®</td>
<td>XBS</td>
<td>V3 password</td>
</tr>
<tr>
<td>SNAPSHOT UPGRADE FEATURE for IMS®</td>
<td>XBU</td>
<td>V3 password</td>
</tr>
<tr>
<td>SNAPSHOT UPGRADE FEATURE for VSAM</td>
<td>XBA</td>
<td>V3 password</td>
</tr>
<tr>
<td>SQL Explorer for DB2®</td>
<td>PSS</td>
<td>V3 password</td>
</tr>
<tr>
<td>SQL Performance for DB2®</td>
<td>AFD</td>
<td>V3 password</td>
</tr>
<tr>
<td>BMC System Performance for DB2®</td>
<td>SPD</td>
<td>V3 password</td>
</tr>
<tr>
<td>ULTRAOPT/CICS</td>
<td>ULC</td>
<td>V3 password</td>
</tr>
<tr>
<td>ULTRAOPT/IMS®</td>
<td>ULI</td>
<td>V3 password</td>
</tr>
<tr>
<td>UNLOAD PLUS for DB2®</td>
<td>ADU</td>
<td>V3 password</td>
</tr>
<tr>
<td>UNLOAD PLUS for IMS®</td>
<td>ULP</td>
<td>V3 password</td>
</tr>
<tr>
<td>UNLOAD PLUS/EP for IMS®</td>
<td>HUL</td>
<td>V3 password</td>
</tr>
</tbody>
</table>
When you request a permanent product license from BMC Software, you must furnish information about the affected CPUs.

**NOTE**

CPU information is not required for temporary passwords.

For each product that you license, use the worksheet in Table 20 to record the CPU information and the passwords that you receive from BMC. The first line of the table provides a sample entry for a 9X2 model with three processors and a CPU ID of 10309-9021-DA.

### Table 20  Product Authorization worksheet

<table>
<thead>
<tr>
<th>CPU serial</th>
<th>CPU type</th>
<th>Version code</th>
<th>CPU model</th>
<th>Number of CPUs</th>
<th>Permanent password</th>
</tr>
</thead>
<tbody>
<tr>
<td>10309</td>
<td>9021</td>
<td>DA</td>
<td>9X2</td>
<td>3</td>
<td>123,456,789,ABC</td>
</tr>
<tr>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __ __</td>
<td>__ __ __ __ __ __</td>
</tr>
<tr>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __ __</td>
<td>__ __ __ __ __ __</td>
</tr>
<tr>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __ __</td>
<td>__ __ __ __ __ __</td>
</tr>
<tr>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __ __</td>
<td>__ __ __ __ __ __</td>
</tr>
<tr>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __ __</td>
<td>__ __ __ __ __ __</td>
</tr>
<tr>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __ __</td>
<td>__ __ __ __ __ __</td>
</tr>
</tbody>
</table>

For information about determining your CPU ID, see “Displaying current processor information” on page 131 or use the LIST option of the batch Product Authorization utility.
Applying passwords with the online interface

This section provides instructions for using the online ISPF interface to manage product authorizations. To use the batch interface to manage authorizations, see “Applying passwords with the batch interface” on page 132.

Starting the online Product Authorization utility

Use this procedure to start the Product Authorization utility from the ISPF interface.

**Before you begin**

Ensure that you have completed the following tasks:

- Specify user options as described in “Specifying user options” on page 74.
- Obtain your BMC product authorization passwords.

**To start the online Product Authorization utility**

1. From the Installation System Main Menu, choose Additional Options.

   The Additional Options Menu (Figure 12) is displayed.

   **Figure 12   Additional Options Menu**

   | BMC Software Installation System Additional Options Menu | Command ===>  ________________________________________________________________ |
   | Select an option. Press Enter to continue. |
   | _ Product Maintenance | Apply SMP/E Maintenance. |
   | _ Additional Installs | Additional Installs for Administrative Products. |
   | _ Product Cloning | Additional DB2 Subsystem Processing. |

2. From the Additional Options Menu, choose Product Authorization.
Starting the online Product Authorization utility

3 From the displayed list of products, select a product that requires authorization.

The Installation System starts the Product Authorization utility and displays the Product Authorization Primary Menu (Figure 13).

Figure 13 Product Authorization Primary Menu (SECEPPRI)

![Product Authorization Primary Menu (SECEPPRI)]

NOTE

This panel is the only panel that you will use if you are processing a new password for an existing CPU. Additional panels to add, delete, replace, or modify a CPU are displayed only if the password that you enter on this panel provides authorization to perform those functions.
Processing a permanent password for an existing processor

Table 21 describes each option on the primary menu.

Table 21  Product Authorization Primary Menu options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Process password)</td>
<td>processes a password that BMC Customer Password Response provides to you</td>
</tr>
<tr>
<td></td>
<td>Use this option to complete these tasks:</td>
</tr>
<tr>
<td></td>
<td>■ process a password on an existing processor</td>
</tr>
<tr>
<td></td>
<td>■ add, delete, replace, modify, or reset authorization for a specific processor</td>
</tr>
<tr>
<td>2 (Display product authorization)</td>
<td>lists the processors that are authorized to use the product</td>
</tr>
<tr>
<td></td>
<td>The list also displays the date and time that the authorization was last modified (and</td>
</tr>
<tr>
<td></td>
<td>by whom) and the trial or temporary expiration date.</td>
</tr>
<tr>
<td>3 (Display current processor information)</td>
<td>displays information about the current processor, including the serial number, the</td>
</tr>
<tr>
<td></td>
<td>model number, the version code (submodel), and the number of available processors</td>
</tr>
<tr>
<td>4 (Help about)</td>
<td>displays version, copyright, and licensing information about the Product Authorization utility</td>
</tr>
<tr>
<td>5 (Exit)</td>
<td>exits the Product Authorization utility and returns to the previous menu or panel</td>
</tr>
</tbody>
</table>

Processing a permanent password for an existing processor

This procedure permanently authorizes an existing processor (a CPU that is already listed in your product authorization tables) to run the selected product. To process a temporary password, see “Processing a temporary password” on page 128.

To process a permanent password for an existing processor, perform the following steps:

1. Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

2. On the Product Authorization Primary Menu, type 1 (Process password) and press Tab.

3. In the Password library field, type a fully qualified data set name and press Tab.

   The utility saves the library name in your ISPF profile and uses that name as the default library.

4. In the Authorization password field, type your permanent password and press Enter.

5. To exit the Product Authorization utility, press F3.
Adding authorization for a new processor

This procedure adds a new processor to your product authorization table.

Before you begin

Ensure that you have received a new ADD password from BMC.

To add authorization for a new processor

1. Access the ADD Authorization for a Processor panel:

   A. Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.
   
   B. On the Product Authorization Primary Menu, type 1 (Process password) and press Tab.
   
   C. In the Password library field, type a fully qualified data set name and press Tab.
   
   D. In the Authorization password field, type your ADD password and press Enter.

   The ADD Authorization for a Processor panel (Figure 14) is displayed.

Figure 14  ADD Authorization for a Processor panel (SECEPADD)
2 In the **New serial number** field, type the serial number of the processor for which you are adding authorization.

3 In the **New model number** field, type the model number of the processor for which you are adding authorization and press **Enter**.

   A pop-up message on the Product Authorization Primary Menu explains that the product authorization table was updated successfully.

4 To exit the Product Authorization utility, press **F3**.

---

**Deleting authorization for a processor**

This procedure removes a processor from your product authorization table.

**Before you begin**

Ensure that you have received a new DELETE password from BMC.

**To delete authorization for a processor**

1 Access the DELETE Authorization for a Processor panel:

   A Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

   B On the Product Authorization Primary Menu, type **1 (Process password)** and press **Tab**.

   C In the **Password library** field, type a fully qualified data set name and press **Tab**.

   D In the **Authorization password** field, type your DELETE password and press **Enter**.
Replacing authorization for a processor

The DELETE Authorization for a Processor panel (Figure 15) is displayed.

Figure 15  DELETE Authorization for a Processor panel (SECEPDEL)

In the Old serial number field, type the serial number of the processor for which you are deleting authorization.

In the Old model number field, type the model number of the processor for which you are deleting authorization and press Enter.

A pop-up message on the Product Authorization Primary Menu explains that the product authorization table was updated successfully.

To exit the Product Authorization utility, press F3.

Replacing authorization for a processor

This procedure replaces one processor in the product authorization table with another processor. This replacement allows the new processor to run the associated product in place of the old processor.

Before you begin

Ensure that you have received a new REPLACE password from BMC.
To replace authorization for a processor

1 Access the REPLACE Authorization for a Processor panel:

A Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

B On the Product Authorization Primary Menu, type 1 (Process password) and press Tab.

C In the Password library field, type a fully qualified data set name and press Tab.

D In the Authorization password field, type your REPLACE password and press Enter.

The REPLACE Authorization for a Processor panel (Figure 16) is displayed.

Figure 16 REPLACE Authorization for a Processor panel (SECEPREP)

Supply information for all input fields. Then press Enter.

Authorization password . . : 4XY YAL AMB 48S

Old serial number . . 10293
Old model number . . 9672  (for example, 9021, 9121, 3090)

New serial number . . 10293
New model number . . 9652  (for example, 9021, 9121, 3090)

2 In the Old serial number field, type the serial number of the processor to be replaced.

3 In the Old model number field, type the model number of the processor to be replaced.

4 In the New serial number field, type the serial number of the processor that will replace the old processor.

5 In the New model number field, type the model number of the processor that will replace the old processor and press Enter.
A pop-up message on the Product Authorization Primary Menu explains that the product authorization table was updated successfully, replacing the old processor with the new processor.

6 To exit the Product Authorization utility, press F3.

Modifying authorization for an existing processor

This procedure changes one or more properties of a processor in the product authorization table. You can change the following properties:

- number of significant digits for the serial number
- maximum number of processors
- expiration date for the product license

Before you begin

Ensure that you have received a new MODIFY password from BMC.

To modify authorization for a processor

1 Access the MODIFY Authorization for an Existing Processor panel:

A Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

B On the Product Authorization Primary Menu, type 1 (Process password) and press Tab.

C In the Password library field, type a fully qualified data set name and press Tab.

D In the Authorization password field, type your MODIFY password and press Enter.
The MODIFY Authorization for an Existing Processor panel (Figure 17) is displayed.

**Figure 17  MODIFY Authorization for an Existing Processor panel (SECEPUPD)**

In the Serial number field, type the serial number of the processor for which you want to modify the authorization.

3 In the Model number field, type the model number of the processor for which you want to modify the authorization and press Enter.

The properties are modified automatically. A pop-up message on the Product Authorization Primary Menu explains that the product authorization table was updated successfully.

4 To exit the Product Authorization utility, press F3.

**Resetting authorization for all processors**

This procedure resets a global property (one that applies to all CPU IDs) of the authorization table.

**Before you begin**

Ensure that you have received a new RESET password from BMC.
**To reset authorization for all processors**

1. Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

2. On the Product Authorization Primary Menu, type 1 (Process password) and press Tab.

3. In the Password library field, type a fully qualified data set name and press Tab.

4. In the Authorization password field, type your permanent password and press Enter.

   A pop-up message explains that the product authorization table was updated successfully.

5. To exit the Product Authorization utility, press F3.

---

**Processing a temporary password**

This procedure temporarily authorizes a processor to run the selected product. To process a permanent password, see “Processing a permanent password for an existing processor” on page 121.

To process a temporary password, perform the following steps:

1. Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

2. On the Product Authorization Primary Menu, type 1 (Process password) and press Tab.

3. In the Password library field, type a fully qualified data set name and press Tab.

4. In the Authorization password field, type your temporary password and press Enter.

   A pop-up message explains that the product authorization table was built or updated successfully.

5. To exit the Product Authorization utility, press F3.
Displaying product authorization

This procedure displays the current authorization for a product.

To display authorization for a product, perform the following steps:

1. Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

2. On the Product Authorization Primary Menu, type 2 (Display product authorization) and press Tab.

3. In the Password library field, type a fully qualified data set name and press Enter.

The Product Authorization Display panel (Figure 18) is displayed.

Figure 18  Product Authorization Display panel (SECEPTBL)

Table 22 describes the fields on this panel.

Table 22  Field descriptions for the Product Authorization Display panel (part 1 of 2)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password library</td>
<td>name of the password library</td>
</tr>
<tr>
<td>Product code</td>
<td>code that BMC assigns to the product</td>
</tr>
</tbody>
</table>
Table 22  Field descriptions for the Product Authorization Display panel (part 2 of 2)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last changed (mm/dd/yy-hh:mm)</td>
<td>date and time that the product authorization tables were last modified</td>
</tr>
<tr>
<td></td>
<td>The variables are as follows:</td>
</tr>
<tr>
<td></td>
<td>■ \textit{mm} represents the month (in the range 01–12).</td>
</tr>
<tr>
<td></td>
<td>■ \textit{dd} represents the day (in the range 01–31).</td>
</tr>
<tr>
<td></td>
<td>■ \textit{yy} represents the year (in the range 00–99).</td>
</tr>
<tr>
<td></td>
<td>■ \textit{hh} represents the hour (in the range 00–23).</td>
</tr>
<tr>
<td></td>
<td>■ \textit{mm} represents minutes (in the range 00–59).</td>
</tr>
<tr>
<td>Last changed by</td>
<td>user ID or job that requested the modification</td>
</tr>
<tr>
<td>Grace period ends (mm/dd/yyyy)</td>
<td>date when the grace period (if triggered) will end</td>
</tr>
<tr>
<td></td>
<td>The variables are as follows:</td>
</tr>
<tr>
<td></td>
<td>■ \textit{mm} represents the month (in the range 01–12).</td>
</tr>
<tr>
<td></td>
<td>■ \textit{dd} represents the day (in the range 01–31).</td>
</tr>
<tr>
<td></td>
<td>■ \textit{yyyy} represents the year (in the range 0001–9999).</td>
</tr>
<tr>
<td></td>
<td>\textbf{Note}: This line appears only if the failure mode is phased and the grace period has been triggered. The grace period can be triggered when you run a permanently licensed product on an unlicensed processor. You should apply a RESET password to reset the grace period. For assistance, contact your BMC sales representative.</td>
</tr>
<tr>
<td>Temporary expiration date (mm/dd/yyyy)</td>
<td>date on which you will no longer be allowed to bypass the CPU ID check or the product</td>
</tr>
<tr>
<td></td>
<td>The variables are as follows:</td>
</tr>
<tr>
<td></td>
<td>■ \textit{mm} represents the month (in the range 01–12)</td>
</tr>
<tr>
<td></td>
<td>■ \textit{dd} represents the day (in the range 01–31)</td>
</tr>
<tr>
<td></td>
<td>■ \textit{yyyy} represents the year (in the range 0001–9999)</td>
</tr>
<tr>
<td></td>
<td>\textbf{Note}: If this expiration date has not yet been reached, you can run this product on any processor. On the date shown, your trial period will end or (if you have licensed the product) you will be able to run the product only on authorized processors.</td>
</tr>
<tr>
<td>Licensed Processors</td>
<td>list of properties for each licensed CPU</td>
</tr>
<tr>
<td></td>
<td>The Version \textbf{Code} column reflects the hardware representation of the submodel. \textbf{Significant Digits} refers to the number of significant digits for the serial number. The expiration date indicates the month and year through which you are licensed for the specific processor. In most cases, this value is NONE. Most of the remaining processor information is provided for reference in case you need to contact BMC Customer Support.</td>
</tr>
</tbody>
</table>

4 To exit the Product Authorization utility, press \textbf{F3}.  

130  EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE Installation Guide
Displaying current processor information

This procedure displays the current authorization for a processor. If you experience problems, BMC Customer Support might require this information.

To display processor information, perform the following steps:

1. Start the Product Authorization utility as instructed in “To start the online Product Authorization utility” on page 119.

2. On the Product Authorization Primary Menu, type 3 (Display current processor information) and press Enter.

The Current Processor Information panel (Figure 19) is displayed.

Figure 19  Current Processor Information panel (SECEPCPU)

SECEPCPU  Current Processor Information
Command ===> _________________________________________________________________

For the MVS system on which this application is currently executing:

Serial number . . . : 10293
Model number . . . : 9672
Version code . . . : 06
Number of available processors . . : 05

Press Enter to continue.

This panel displays the CPU serial and model numbers for the processor on which TSO is running. The panel also displays the version code of the processor. The version code is the hardware representation of the submodel (for example, the 942 in ES/9000-942 or 600 for a 3090-600 processor).
Applying passwords with the batch interface

NOTE
Version code X’FF’ indicates that MVS is running as a VM guest. Code X’FF’ is not the processor version code. To determine the processor version code, run the LIST option of the batch Product Authorization utility from an APF-authorized library. For more information, see Table 24 on page 137.

This panel also displays the number of processors that are online to the current operating system. This information might be relevant to your BMC license agreement.

NOTE
The information that is displayed on this panel might not refer to a computer on which you are licensed to run a BMC product. For example, if you log on to TSO on SYSA but run your BMC product on SYSB, your product authorization entries might refer to SYSB.

3 To exit the Product Authorization utility, press F3.

Applying passwords with the batch interface

This section describes the batch interface that you can use for product authorization outside of the Installation System. To use the online interface, see “Applying passwords with the online interface” on page 119.

Using the batch interface, you can perform the following tasks:

- process a password
- obtain current product authorization and processor information
- apply passwords to multiple products at one time

Running the batch Product Authorization utility

You can find product-specific JCL samples in your JCL library and the base installation library. Follow the instructions in the comments of one of the following members:

- ###CPUID (in your JCL library)
- BMISPSWD (in the base installation library)
Figure 20 is a sample JCL script for running batch product authorization.

Figure 20  Sample JCL for running batch product authorization  (part 1 of 3)

```plaintext
/*
MODIFY JOB STATEMENT BELOW AS APPROPRIATE
*/
CPUAUTH JOB (ACCT), 'CPUID AUTHORIZATION', MSGCLASS=X, CLASS=A
/*
*/
/*
*/
*******************************************************************************
// BMC SOFTWARE - PRODUCT PASSWORD PROCESSING JCL AND INFORMATION *
*******************************************************************************

PRODUCT  PRODUCT
  _CODE_  _NAME__
  XBA     SNAPSHOT UPGRADE FEATURE for VSAM
  XBI     EXTENDED BUFFER MANAGER for IMS
  XBM     EXTENDED BUFFER MANAGER
  XBU     SNAPSHOT UPGRADE FEATURE for IMS
  XBS     SNAPSHOT UPGRADE FEATURE
  ACT     CATALOG MANAGER for DB2
  ACP     COPY PLUS for DB2

*******************************************************************************

INSTRUCTIONS
*******************************************************************************

--> MODIFY THE STEPLIB AND SYSLIB STATEMENTS BELOW. *
STEPLIB SHOULD SPECIFY THE NAME OF THE DATASET WHERE THE *
PROGRAM BLFSEC3B RESIDES. *
SYSLIB SHOULD SPECIFY THE NAME OF THE PASSWORD LIBRARY *

-----------------------------------------------*

VALID KEYWORDS AND EXAMPLES ARE:
PSWD   ==> PSWD=XXX,XXX,XXX,XXX
  WHERE XXX,XXX,XXX,XXX IS THE PASSWORD
OLDCPUID ==> OLDCPUID=SSSSS-MMMM
  WHERE SSSSS IS THE CPU SERIAL NUMBER OF *
  YOUR "OLD" CPU *
  MMMMM IS THE CPU MODEL NUMBER OF *
  YOUR "OLD" CPU *
THE "OLDCPUID" KEYWORD IS USED WITH "DELETE", "REPLACE",*
AND "MODIFY" PASSWORDS.
NEWCPUID ==> NEWCPUID=CCCCC-NNNN
  WHERE CCCCC IS THE CPU SERIAL NUMBER OF *
  YOUR "NEW" OR CURRENT CPU *
  NNNN IS THE CPU MODEL NUMBER OF *
  YOUR "NEW" OR CURRENT CPU *
THIS KEYWORD IS USED WITH "ADD" AND "REPLACE" PASSWORDS
LIST   ==> LIST
```
Figure 20  Sample JCL for running batch product authorization  (part 2 of 3)

```plaintext
//*                        THIS KEYWORD WILL LIST ALL OF THE ENTRIES  *
//*                        IN THE PRODUCT AUTHORIZATION TABLE.        *
//*                                                                   *
//*  KEYWORD SYNTAX FOR PSWD, NEWCPUID, OLDCPUID:                     *
//*  THE SYNTAX FOR THE PSWD, NEWCPUID, AND OLDCPUID KEYWORDS IS      *
//*  FREE FORM. THESE KEYWORDS MAY START IN ANY COLUMN AND IN ANY     *
//*  ORDER AS LONG AS THE STATEMENT DOES NOT EXCEED COLUMN 72.        *
//*  ALL KEYWORDS MUST BE SPECIFIED ON A SINGLE LINE WITHOUT          *
//*  COMMENTS. THE SYSIN CONTROL STATEMENT CANNOT BE CONTINUED.       *
//*  MULTIPLE SYSIN CONTROL STATEMENTS CAN BE PROCESSED IN A          *
//*  SINGLE JOB STEP.                                                *
//*  END                                                                *
//*  KEYWORD SYNTAX FOR LIST:                                         *
//*  THE LIST KEYWORD CANNOT BE SPECIFIED WITH ANY OTHER KEYWORD.     *
//*  IF SPECIFIED IN CONJUNCTION WITH OTHER KEYWORDS, IT WILL BE      *
//*  IGNORED AND WILL NOT BE PROCESSED. THE LIST KEYWORD SHOULD       *
//*  NOT EXCEED COLUMN 72.                                            *
//*                                                                   *
//*  MULTIPLE PRODUCTS / SINGLE JOBSTEPS:                             *
//*  REPLACSE PARM=PRODCODE WITH SPACES: IE: PARM=' '                 *
//*  ADD PRODUCT CODE TO PASSWORD LINE IN COLS 1-3 (COLS4 IS BLANK)   *
//*  WHERE 'PPP' IS THREE LETTER PRODUCT CODE.                        *
//*  PPP PSWD=123,456,789,ABC NEWCPUID=98765-4321                    *
//*  PPP LIST                                                          *
//*-------------------------------------------------------------------*
//*  EXAMPLES:                                                        *
//*  PROCESS AN "ADD" PASSWORD:                                       *
//*  PSWD=123,456,789,ABC NEWCPUID=98765-4321                         *
//*                                                                   *
//*  PROCESS A "DELETE" PASSWORD:                                     *
//*  PSWD=123,456,789,ABC OLDCPUID=98765-4321                         *
//*                                                                   *
//*  PROCESS A "MODIFY" PASSWORD:                                     *
//*  PSWD=123,456,789,ABC OLDCPUID=98765-4321                         *
//*                                                                   *
//*  PROCESS A "REPLACE" PASSWORD:                                    *
//*  PSWD=123,456,789,ABC OLDCPUID=98765-4321 NEWCPUID=98777-4321     *
//*                                                                   *
//*  PROCESS A "RESET" PASSWORD:                                      *
//*  PSWD=123,456,789,ABC                                             *
//*                                                                   *
//*  PROCESS A "TEMPORARY" PASSWORD:                                  *
//*  PSWD=123,456,789,ABC                                             *
//*                                                                   *
//*  REPORT PROCESSOR INFORMATION AND AUTHORIZATION:                  *
//*  LIST                                                             *
//*******************************************************************************
//APPLYPW  EXEC PGM=BLFSEC3B,PARM='PPP'     <= INSERT PRODUCT CODE
//STEPLIB  DD DSN=HLQ.BBLINK, DISP=SHR
//SYSLIB   DD DSN=<PASSWORD LIBRARY>, <= INSERT PASSWORD LIBRARY
```
Running the batch Product Authorization utility

Chapter 6 Applying product passwords 135

Table 23 lists information that is required for the JCL script.

Table 23 Sample JCL script information

<table>
<thead>
<tr>
<th>JCL statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOB</td>
<td>varies, depending on your system</td>
</tr>
<tr>
<td>EXEC</td>
<td>identifies the program (BLFSEC3B) and displays a BMC product code in the PARM field</td>
</tr>
<tr>
<td></td>
<td>Replace PPP with the three-character product code.</td>
</tr>
<tr>
<td>STEPLIB DD</td>
<td>identifies the load library in which BLFSEC3B resides</td>
</tr>
<tr>
<td></td>
<td>This statement is optional if BLFSEC3B resides in LNKLST or is specified in JOBLIB.</td>
</tr>
<tr>
<td>SYSLIB DD</td>
<td>identifies the password library</td>
</tr>
<tr>
<td></td>
<td>Product authorization tables are stored and updated in this data set.</td>
</tr>
<tr>
<td>SYSPRINT DD</td>
<td>enables the product to issue messages and output from the LIST control statement</td>
</tr>
<tr>
<td>SYandin DD</td>
<td>identifies the location of the control statements that define which actions the program should take</td>
</tr>
<tr>
<td></td>
<td>For a description of these control statements, see “Using control statements and keywords” on page 137.</td>
</tr>
</tbody>
</table>

NOTE

The passwords that are created with the PGM=BLFSEC3B program are compatible with the passwords that are created with the SECSEC3B program.

You can apply passwords to multiple products in one batch operation by using the batch product authorization utility. Figure 21 is a sample JCL script for applying passwords to multiple products.

Figure 21 Sample JCL for applying passwords to multiple products

```bash
//APPLYPW EXEC PGM=BLFSEC3B,PARM='PPP' <= PRODUCT CODE
//STEPLIB DD DSN=HLQ.BBLINK, <= BLFSEC3B LOADLIB
//SYSLIB DD DSN=HLQ.BMCPSTD, <= PASSWORD LIBRARY
```
To apply passwords to multiple products in one batch operation, perform the following steps:

1. Replace **PPP** in the BLFSEC3B line with three spaces, as follows:

   ```
   //BLFSEC3B EXEC PGM=BLFSEC3B,PARM=' ' *
   /*
   ```

2. Replace **PPP** with the product code in each PSWD line:

   ```
   PPP PSWD=123,456,789,ABC NEWCPUID=98765-4321
   ```

   Ensure that the product code is in columns 1 through 3, and that column 4 is blank.

3. In each PSWD line, replace **XXX,XXX,XXX,XXX** with the new password, and replace **CCCCC-NNNN** with the new CPU ID.

   **Figure 22** is an example of these changes.

---

### Figure 21  Sample JCL for applying passwords to multiple products

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>//</td>
<td>DISP=SHR</td>
</tr>
<tr>
<td>//SYSPRINT DD SYSOUT=* ,DCB=RECFM=FBA</td>
<td></td>
</tr>
<tr>
<td>//SYSUDUMP DD SYSOUT=*</td>
<td></td>
</tr>
<tr>
<td>PPP PSWD=XXX,XXX,XXX,XXX NEWCPUID=CCCCC-NNNN</td>
<td></td>
</tr>
<tr>
<td>PPP PSWD=XXX,XXX,XXX,XXX NEWCPUID=CCCCC-NNNN</td>
<td></td>
</tr>
<tr>
<td>PPP PSWD=XXX,XXX,XXX,XXX NEWCPUID=CCCCC-NNNN</td>
<td></td>
</tr>
<tr>
<td>/*</td>
<td></td>
</tr>
</tbody>
</table>

---

### Figure 22  Sample JCL with changes

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>//APPLYPW EXEC PGM=BLFSEC3B,PARM=' ' &lt;= PRODUCT CODE</td>
<td></td>
</tr>
<tr>
<td>//STEPLIB DD DSN=BMC.V2060.BBLINK, &lt;= BLFSEC3B LOADLIB</td>
<td></td>
</tr>
<tr>
<td>//</td>
<td>DISP=SHR</td>
</tr>
<tr>
<td>//SYSLIB DD DSN=BMC.V2060.BMCPSWD, &lt;= PASSWORD LIBRARY</td>
<td></td>
</tr>
<tr>
<td>//</td>
<td>DISP=SHR</td>
</tr>
<tr>
<td>//SYSPRINT DD SYSOUT=*,DCB=RECFM=FBA</td>
<td></td>
</tr>
<tr>
<td>//SYSUDUMP DD SYSOUT=*</td>
<td></td>
</tr>
<tr>
<td>//SYSIN  DD *</td>
<td></td>
</tr>
<tr>
<td>SPD PSWD=123,456,789,ABC NEWCPUID=98765-4321</td>
<td></td>
</tr>
<tr>
<td>AFD PSWD=456,789,ABC,123 NEWCPUID=87659-4213</td>
<td></td>
</tr>
<tr>
<td>DFD PSWD=123,789,ABC,456 NEWCPUID=97658-4312</td>
<td></td>
</tr>
<tr>
<td>/*</td>
<td></td>
</tr>
</tbody>
</table>
Using control statements and keywords

Some tasks require different input parameters, depending on the type of password that you are installing. The sample JCL shown in Figure 20 on page 133 shows various tasks that you can perform by using the batch version of product authorization. You must modify the JCL to include only the tasks that you want to perform.

The following syntax rules apply to the control statements:

- Control statements can begin in any column.
- Uppercase letters are required.
- You must insert at least one blank space between individual keywords and data fields. Multiple blank spaces are acceptable.
- To insert comments, type an asterisk (*) in column 1 of each line that contains the comment. Comments following keywords are not allowed.
- You cannot specify the LIST keyword on the same line as PSWD, NEWCPUID, or OLDCPUID.

Table 24 describes the control statement keywords.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Data</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSWD</td>
<td>12-character password that is formatted as four fields of three</td>
<td>Valid characters are alphanumeric (excluding letters 1 and O). Valid special</td>
</tr>
<tr>
<td></td>
<td>characters each, separated by a comma or a blank</td>
<td>characters are =, +, and @. You can substitute the asterisk (*) for the</td>
</tr>
<tr>
<td></td>
<td>See the sample JCL in Figure 20 on page 133.</td>
<td>“at” sign (@) when @ is not available on the keyboard.</td>
</tr>
<tr>
<td></td>
<td>Twelve continuous characters are also acceptable.</td>
<td></td>
</tr>
<tr>
<td>NEWCPUID</td>
<td>five-digit serial number,</td>
<td>The serial number and the model number must be hexadecimal characters and</td>
</tr>
<tr>
<td></td>
<td>followed by a hyphen and a four-digit model number</td>
<td>must be separated by a single hyphen.</td>
</tr>
<tr>
<td>OLDCPUID</td>
<td>five-digit serial number,</td>
<td>The serial number and the model number must be hexadecimal characters and</td>
</tr>
<tr>
<td></td>
<td>followed by a hyphen and a four-digit model number</td>
<td>must be separated by a single hyphen.</td>
</tr>
<tr>
<td>LIST</td>
<td>not applicable</td>
<td>This keyword prints a report that shows the contents of the product</td>
</tr>
<tr>
<td></td>
<td></td>
<td>authorization tables and information about the processor on which the job</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ran.</td>
</tr>
</tbody>
</table>
Checking return codes

After you run a batch job to perform product authorization, check the job’s return code to ensure that the job completed successfully. Table 25 lists the return codes that the batch Production Authorization utility generates.

Table 25  Return codes from the batch Product Authorization utility

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All requests completed successfully. See the SYSPRINT output for messages about each operation.</td>
</tr>
<tr>
<td>4</td>
<td>A LIST was requested, but no tables were in the load library.</td>
</tr>
<tr>
<td>8</td>
<td>An error prevented completion of some or all of your requests. See the SYSPRINT output for messages about the error and any completed operations.</td>
</tr>
</tbody>
</table>
Applying maintenance

This chapter contains the following topics:

Overview .......................................................... 139
Applying SMP/E maintenance .................................. 140
Generating jobs to perform SMP/E maintenance ............ 140
Running jobs to apply SMP/E maintenance ................. 143
Obtaining maintenance from eFix .............................. 147

Overview

This chapter describes how to obtain and apply maintenance to the XBM products.

The Installation System uses SMP/E to perform maintenance on installed BMC products. After you have completed the maintenance dialog, (see “Generating jobs to perform SMP/E maintenance” on page 140) the Installation System generates jobs in your JCL library. When submitted, these jobs perform maintenance on installed BMC products.

All maintenance is applied to XBM through SMP/E, regardless of the installation method (Express or Custom) that you used.
Applying SMP/E maintenance

SMP/E maintenance is available for all products installed with the Installation System. However, if you used the Express installation method you must enabled your products for SMP/E maintenance by running the $B90SMPE job as discussed in “Setting up the SMP/E environment for Express installations” on page 82.

After you generate SMP/E jobs in your installation JCL library, running the jobs applies maintenance to your products.

Generating jobs to perform SMP/E maintenance

This procedure produces SMP/E batch jobs in your installation JCL library.

Before you begin

If you installed the product by using the Express installation, you must run the $B90SMPE job before using this procedure. For instructions, see “Setting up the SMP/E environment for Express installations” on page 82.

PUT maintenance is available on distribution tapes and from the ESD site. The method of PUT maintenance distribution that you choose must be compatible with the distribution method you selected when you created your customized installation library. If you are choosing a different method for receiving PUT maintenance, perform the following steps:

1. Run the installation setup procedure to create a customized installation library as described in “Creating a customized installation library” on page 63:
   - Select the electronic distribution method if you are accessing PUT maintenance from the ESD site.
   - Select the tape distribution method if you are accessing PUT maintenance from a distribution tape.

2. Run the Installation System as described in “Starting the Installation System” on page 69.
Generating jobs to perform SMP/E maintenance

### TIP
If you select the installation profile that you used to install and create the SMP/E environment that you are maintaining, the installation system will be populated with the information for that environment.

To preserve the original installation profile, you may want to make a copy of the original profile and use the copy to perform SMP/E maintenance.

You can use the JCL library from the original installation or create a new JCL library if you want to preserve the original JCL.

Proceed through the Main Menu choices in the order listed to activate each subsequent menu choice.

### NOTE
To access the Additional Options Menu, you must first select Product Install. However, when the system displays a list of available products, do not select a product.

3. Press **F3** to return to the Main Menu.

   The Additional Options choice is now selectable.

**To generate SMP/E maintenance jobs**

1. From the Installation System’s Main Menu, choose Additional Options and press Enter.

   The Additional Options Menu is displayed.

2. Select Product Maintenance and press Enter.

   The Installation System requests job card information.

3. Provide the requested job card information and press Enter.

4. Select to receive PUT maintenance from a distribution tape, from BMC Software eFix Distribution Services, or from the ESD site.

### NOTE
Electronic PUT maintenance is available as a download from the ESD site.
To receive PUT maintenance from a distribution tape, you must provide the maintenance tape VOLSER.

To receive PUT maintenance through eFix distribution, you must provide a dataset name for the maintenance that you downloaded from the BMC Customer Support site.

To receive PUT maintenance from the ESD site, the Installation System generates JCL that downloads the latest maintenance.

5 When prompted, supply all required information.

6 To apply maintenance to installed products, generate the JCL jobs:

A In the JCL Generation Option panel, specify one of the following options:

- Generate installation jobs in the data set that you entered in “Specifying user options” on page 74.

  The Installation System generates JCL that applies maintenance to your installed products, overwriting any maintenance batch jobs that already exist in the specified data set. The status of the JCL generation is updated on the panel as it occurs.

- Skip JCL generation, and display the next panel. In this case, no installation jobs are created.

B To generate the JCL, press Enter.

  The Installation System creates the job streams that are used for applying product maintenance.

C When all required jobs are generated, press Enter to display a list of generated jobs.

  The Installation System generates and displays the JCL that applies maintenance to your products. The maintenance jobs are located in the JCL library that you designated in your user options and are identified with the prefix $M.

7 Review the generated jobs.

---

**NOTE**

You can edit the jobs if necessary.
To run the maintenance jobs, proceed to “Running jobs to apply SMP/E maintenance.”

---

**NOTE**

You do not have to submit the generated jobs from within this procedure. You can submit them from your JCL library at any convenient time.

---

**Running jobs to apply SMP/E maintenance**

After you generate maintenance jobs in your HLQ JCL library (as instructed in “Generating jobs to perform SMP/E maintenance” on page 140), running the jobs applies maintenance to your products. Run these tasks in the specified order:

1. Receive the SYSMOD hold data (page 144).
   
   This procedure is required if technical bulletins indicate that exception SYSMOD hold data exists.

2. Receive the maintenance data (page 145).

3. List the SYSMODS that have a status of HOLD (page 145).

4. Print the PTF documentation (page 145).

5. Apply the maintenance (page 145).

6. Accept the maintenance data (page 146).

**Before you begin**

Ensure that you completed the necessary procedure to prepare your products and environments for SMP/E maintenance:

- If you used a Custom installation, the procedure is in “Setting up the SMP/E environment for Custom installations” on page 85.

- If you used an Express installation, the procedure is in “Setting up the SMP/E environment for Express installations” on page 82.

Also, ensure that you generated SMP/E maintenance JCL as discussed in “Generating jobs to perform SMP/E maintenance” on page 140.
Obtain the most recent technical bulletins or flashes for your products from the BMC Customer Support website. The technical bulletins or flashes might indicate that you need to receive exception SYSMOD hold data (as described in “To receive SYSMOD hold data” on page 144) before applying maintenance. Technical bulletins or flashes might also contain other information that was made available after your maintenance tape was produced.

Table 26 lists the typical jobs created for SMP/E maintenance.

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M42DWNL</td>
<td>download PUT maintenance files</td>
</tr>
<tr>
<td>$M45RECV</td>
<td>receive maintenance</td>
</tr>
<tr>
<td>$M50HOLD</td>
<td>receive hold statements</td>
</tr>
<tr>
<td>$M55LIST</td>
<td>list hold data</td>
</tr>
<tr>
<td>$M60DOCL</td>
<td>print PTF doc from tape</td>
</tr>
<tr>
<td>$M65CLNU</td>
<td>clean pp maintenance input files</td>
</tr>
<tr>
<td>$M75APCK</td>
<td>apply check job</td>
</tr>
<tr>
<td>$M76APLY</td>
<td>apply job</td>
</tr>
<tr>
<td>$M80ACCK</td>
<td>accept check job</td>
</tr>
<tr>
<td>$M81ACPT</td>
<td>accept job</td>
</tr>
</tbody>
</table>

To receive SYSMOD hold data

If technical bulletins or flashes indicate that exception SYSMOD hold data exists, complete this procedure.


2. Use the following modification control statements (MCSs) to enter exception SYSMOD hold data in the FB/80 data set:

   ```
   +++HOLD(_______)
   FMID(_______)
   DATE(____)
   ERROR REASON(_______)
   COMMENT(__________________).
   ```

3. Submit the $M50HLD job to receive HOLD statements that are stored in your data set.
To receive maintenance data

Submit the $M45RECV job to receive SMP/E maintenance data service or PUT maintenance data.

---

**NOTE**

Because the maintenance tape includes maintenance for all BMC products, the output may include ++VER messages that indicate that maintenance for other products was not received. Therefore, the submitted job receives diagnostic messages with a step return code of 4. These messages do not require any action.

---

To list SYSMODS with a HOLD status

1. Submit the $M55LST job to list any SYSMODs that have a HOLD status.

---

**NOTE**

SYSMODs that are held because of errors are automatically released when an APAR or PTF resolves the error. SYSMODS held for documentation or action are released by specifying BYPASS(HOLDSYS) in the following jobs:

- $M75APCK
- $M76APLY
- $M80ACCK
- $M81ACPT

2. Review the hardcopy listings to determine whether you need to take any action.

To print PTF documentation

1. Submit the $M60DOC job to print PTF documentation from tape.

2. Keep the product documentation and insert it into the appropriate book.

To apply maintenance

1. Perform APPLY checking before applying maintenance:

   **A** Review comments near the beginning of the $M75APCK job.

   **B** Submit the $M75APCK job to perform APPLY checking.

   **C** Review the $M75APCK output to verify that the expected maintenance will be applied by the $M76APLY job.

2. Review the comments near the beginning of the $M76APLY job.
3 Change the BYPASS keyword to take appropriate action for system HOLDs, as in the following example:

BYPASS(HOLDSYS(DOC,ACTION))

This statement releases SYSMODs that are held for documentation and action.

4 Save your changes.

5 Submit the $M76APLY job to run the APPLY.

**NOTE**

$M76APLY applies a selected list of PTFs and their prerequisites.

---

**To accept maintenance data**

1 Perform ACCEPT checking before accepting maintenance:

   A Review the comments near the beginning of the $M80ACCK job.

   B Submit the $M80ACCK job to perform ACCEPT checking.

   C Review the $M80ACCK output to verify that the expected maintenance will be accepted by the $M81ACPT job.

2 Review the comments near the beginning of the $M81ACPT job.

3 Change the BYPASS keyword to take appropriate action for system HOLDs, as in the following example:

   BYPASS(HOLDSYS(DOC,ACTION))

   This statement releases SYSMODs that are held for documentation and action.

4 Save your changes.

5 Submit $M81ACPT to run the ACCEPT.
If you are using the runtime enablement option or your own runtime data sets, you must copy the updated data sets from your SMP/E target libraries to your runtime data sets.

If you are using the runtime enablement option, you can edit the $R05RTEC job that created the runtime enablement data sets to help you copy the data sets from you SMP/E target libraries to your runtime data sets.

Where to go from here

To check for new maintenance (released after your installation media was prepared), see “Obtaining maintenance from eFix.”

Obtaining maintenance from eFix

The PUT-level maintenance is current as of the date of your installation media. However, new fixes might have occurred since then. BMC recommends checking the Customer Support website for recent technical bulletins or flashes that are related to your products. If new fixes are available, you can download them from eFix PTF Distribution Services (part of the Support website).

TIP

Use eFix to download individual PTFs and any associated PTFs. If you are going to apply PUT-level maintenance, use the PUT media, not eFix.

Before you begin

If you installed this product by using the Express installation method, and you are downloading a PTF from eFix, ensure that you have run the $B90SMPE job to set up an SMP/E environment file for your product.
To download and apply new maintenance from eFix

1 Go to eFix PTF Distribution Services at http://www.bmc.com/support/efix.cgi.

   If you are not logged on to the Customer Support website, you will be prompted to enter your user ID and password.

2 Specify your search parameters in the query fields and run the query.

   For more details and tutorials demonstrating the use of eFix, click Help at the top of the eFix page.

3 Download the PTFs to your hard drive:

   A Select the PTFs in the list and click Download selected PTFs on this Page.

   B In the File Download dialog box, click Save.

   C In the Save As dialog box, save the zipped file on your system.

   D Extract the zipped file on your system.

      The zipped file contains a PTF file and an HOL file (if applicable). The PTF file contains the PTFs, and the HOL file contains the hold data.

4 Transfer the extracted files to your mainframe:

   A Transfer the files that contain the PTF and hold data information to mainframe data sets with the settings LRECL=80 and either RECFM=F or RECFM=FB. This transfer must be a binary transfer, without specifying ASCII/EBCDIC translation or CR/LF.

   B You can use the Installation System to generate JCL to process the PTF or manually edit the SMP/E RECEIVE job.

      In the SMP/E RECEIVE job, use the following guidelines to edit the DD cards for the data sets for the PTF and HOLD files:

         ■ Edit the SMPPTFIN DD card to point to the data set that contains the PTF.
         ■ If applicable, edit the SMIPHOLD DD card to point to the data set that contains the hold data.
The following example shows the steps in the RECEIVE job that process these data sets:

```
//SMPSTEP EXEC smpProc <= Name of the SMP procedure
//SMPPTFIN DD DISP=SHR,DSN=your.upload.ptf.dataSet
//SMPHOLD DD DISP=SHR,DSN=your.upload.holdData.dataSet
//SMPCNTL DD *
  SET BDY(GLOBAL).
  RECEIVE LIST.
  SET BDY(targetZone). <= Name of the target zone
  APPLY S(ptfNum1, ptfNum2....) CHECK.
/*
```

C Complete RECEIVE and APPLY processing.

For more information, see “Running JCL for a Custom installation” on page 83.

5 Repeat steps 2 through 4 for each product or component.
Part 3 Configuring the product

This part describes how to configure XBM, including granting user authorizations and configuring XBM subsystems and components.

Before you begin the tasks in this part, you should have installed and customized XBM through the Installation System, as described in the previous chapters.

This part contains the following chapter:

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Configuring XBM ................................................................. 153
Configuring XBM

This chapter contains the following topics:

Overview . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  153
Granting user authorizations . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  154
   Configuring eTrust CA-ACF2 security . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  155
   Configuring eTrust CA-Top Secret security . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  156
   Configuring RACF security . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  157
   Using XBM user exits . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  160
Configuring XBM subsystems . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  162
   Completing XBM installation . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  162
   Defining and starting the XBM started task . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  163
   Defining PROCS for use with multiple XBM subsystems . . . . . . . . . . . . . . . . . . .  167
   Configuring XBM$OPTS for data sharing environments . . . . . . . . . . . . . . . . . . . .  168
   Using the XBM initialization command file . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  169
Configuring XBM components . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  170
   Setting up the SSI component . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  170
   Setting up the PSS component . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  172

Overview

After you finish installing the product, you must configure XBM and SUF to operate in your environment. Table 27 on page 154 lists the tasks that you must perform to configure the XBM and SUF. Complete the tasks in the order that they are presented, using the References column to direct you to the task instructions.

**NOTE**

Because SUF is a subcomponent of XBM, the process for installing and customizing the products is the same. The features that are enabled are determined by password authorization.
Granting user authorizations

The XBM security interface allows maximum flexibility in controlling access to XBM functions. Through the security interface, you can control ISPF access to XBM for a user or a group of users. For example, you can control the ability to change information in the XBM repository and the size of the XBM cache. However, the security interface does not prohibit users from using the ISPF interface to monitor XBM.

You can control access to XBM functions through IBM RACF® (version 1.9 or later) or through other security packages that are compatible with the System Authorization Facility (SAF), such as Computer Associate’s eTrust CA-ACF2 or eTrust CA-Top Secret.

XBM security does not check commands from any MVS system console, including the IBM System Display and Search Facility (SDSF). XBM security checks only commands that are entered through the XBM ISPF interface.

In addition to RACF and other SAF-compatible security packages, the XBM security interface provides two exit points for user-written security routines. For more information, see “Using XBM user exits” on page 160.

The security interface is optional for RACF users and eTrust CA-Top Secret users. If you do not implement security access to XBM, its functions are unsecured and available to any user with access to the XBM ISPF interface.

**NOTE**

If you are using eTrust CA-ACF2, the security interface is not optional. By default, eTrust CA-ACF2 secures all functions. If you want an unsecured environment, you must implement XBM security and give access to all XBM users, or create an XBM user exit to bypass security checking.

---

**Table 27  Tasks for configuring XBM**

<table>
<thead>
<tr>
<th>Task</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granting user authorizations for the products that you are installing.</td>
<td>page 154</td>
</tr>
<tr>
<td>Configuring the XBM subsystems.</td>
<td>page 162</td>
</tr>
<tr>
<td>Configuring other XBM components, including the SSI component and PSS component.</td>
<td>page 170</td>
</tr>
</tbody>
</table>
Configuring eTrust CA-ACF2 security

You can use eTrust CA-ACF2 to secure XBM by defining resource rules for access to XBM functions. This procedure explains how to use resource rules.

To configure eTrust CA-ACF2 security

1. Ensure that SAF is enabled on your MVS system.

   XBM issues a RACROUTE macro to SAF to determine whether a request can be approved.

2. Update the INFODIR record as follows:

   CHANGE INFODIR TYPES(R-RFAC)

3. Refresh the INFODIR record.

4. Define resource rules to provide access authority to users of specific XBM actions and resources, by using the following format:

   $KEY(BMCXBM.ssidaction.object**********)TYPE(FAC)

   The variables represent the following values:

   - ssid represents the XBM subsystem ID.
   - action represents the XBM action.
   - object represents the XBM object or resource name.

   See “RACF resource profiles” on page 157 and Table 28 on page 158 for more information about defining a resource profile.

5. Rebuild the FAC resource rule by performing an initial program load (IPL) of MVS, or by issuing the following MVS modify command:

   F ACF2,REBUILD(FAC)

   For more information about eTrust CA-ACF2, see the vendor-provided user documentation for that product.
Configuring eTrust CA-Top Secret security

You can use eTrust CA-Top Secret to secure XBM by defining resource profiles for access to XBM functions.

To configure eTrust CA-Top Secret security

1 Ensure that SAF is enabled on your MVS system.

XBM issues a RACROUTE macro to SAF to determine if a request can be approved.

2 Add the XBM resource profile BMCXBM and the XBM subsystem (indicated by the ssid):

   TSS ADD(departmentACID) IBMFAC(BMCXBM)
   TSS ADD(departmentACID) IBMFAC(ssid)

3 Permit access to the XBM resource profile BMCXBM and the XBM subsystem:

   TSS PER(userID or profile) IBMFAC(BMCXBM.ssid.action.object)
      ACCESS(CONTROL or higher)
   TSS PER(userID or profile) IBMFAC(ssid) ACCESS(UPDATE)

Resource profiles for XBM require the following form:

BMCXBM.ssid.action.object

The variables represent the following values:

- ssid represents the XBM subsystem ID.
- action represents the XBM action.
- object represents the XBM object or resource name.

For more information about the XBM resource profile, see “RACF resource profiles” on page 157. For more information about eTrust CA-Top Secret, see the vendor-provided user documentation for that product.
Configuring RACF security

If you are using the RACF system security package in your system environment, you must have certain authorizations.

RACF user ID

Installations frequently allow the security system to assign a default user ID to the XBM started tasks. Consequently, tasks can be added without requiring an update to the equivalent of the RACF ICHRIN03 table. This table contains the name of the started-task procedure and the user ID that should be assigned to it.

If you want to use this method to establish security for the XBM started tasks in your environment, grant started tasks the necessary user ID authorizations. If you do not want XBM to use this default user ID, you must modify ICHRIN03 to assign a different user ID to XBM.

NOTE

If RACF is configured on your MVS system to allow an unknown user, you do not need to supply a user ID for the XBM started task. The XBM started task can run as a RACF unknown user.

For more information about RACF, see the IBM RACF documentation. A list of RACF documentation is provided in the Resource Access Control Facility General Information manual.

RACF resource profiles

To secure XBM functions by using RACF security, you should use one or more RACF resource profiles that are defined with a class of Facility. A facility-class resource profile lets you protect your nonstandard resources, such as program actions. These resource profiles let you control access to one or more resources with similar names and identical security requirements and protect a group of related resources.

NOTE

Each user or group that is given access to an XBM RACF resource profile must have an access level of Control or higher.

For more information about RACF, see the IBM RACF documentation. A list of RACF documentation is provided in the Resource Access Control Facility General Information manual.
Define a RACF resource profile as follows:

\[
\text{BMCXBM.ssid.action.object}
\]

The variables represent the following values:

- BMCXBM specifies that the profile is for XBM.
- \( ssid \) represents the name of the XBM subsystem.
- \( action \) represents the XBM function to be secured.
- \( object \) represents the XBM object or resource name to be secured.

Wildcard patterns are supported for \( ssid \), \( action \), and \( object \), according to RACF rules.

Table 28 defines the values for \( action \) and \( object \).

### Table 28 Security action and object values (part 1 of 2)

<table>
<thead>
<tr>
<th>Action</th>
<th>Object</th>
<th>Action description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN</td>
<td>CONFIG</td>
<td>activate a configuration</td>
</tr>
<tr>
<td></td>
<td>MS</td>
<td>activate or deactivate a management set or group</td>
</tr>
<tr>
<td>COPY</td>
<td>EMCSYMM</td>
<td>split a Business Continuance Volume (BCV) device</td>
</tr>
<tr>
<td></td>
<td>PPRC</td>
<td>split a Peer-to-Peer Remote Copy (PPRC) device</td>
</tr>
<tr>
<td>MAINT</td>
<td>CONFIG</td>
<td>add, update, delete, or rename a configuration</td>
</tr>
<tr>
<td></td>
<td>MS</td>
<td>add, update, delete, or rename a management set or group</td>
</tr>
<tr>
<td></td>
<td>OPTION</td>
<td>change XBM, IMS, PSS, SSI, and VSAM options</td>
</tr>
<tr>
<td>PROTECT</td>
<td>EMCSYMM</td>
<td>control the hold or release a BCV device</td>
</tr>
<tr>
<td>RESET</td>
<td>DATASET</td>
<td>reset data set statistics</td>
</tr>
<tr>
<td>RESTORE</td>
<td>EMCSYMM</td>
<td>restore or incrementally restore a standard volume from a BCV</td>
</tr>
<tr>
<td>SNAP</td>
<td>DATASET</td>
<td>control Instant Snapshot support for utility jobs</td>
</tr>
<tr>
<td>SSIALLOW</td>
<td>LMIRROR</td>
<td>control the SSI option to make local mirrors available for EMC Symmetrix</td>
</tr>
<tr>
<td></td>
<td>RMIRROR</td>
<td>control the SSI option to make remote mirrors available for EMC SRDF snapshots</td>
</tr>
<tr>
<td></td>
<td>SYNC@REG</td>
<td>control the SSI option to synchronize EMC BCVs at snapshot registration</td>
</tr>
</tbody>
</table>
Examples of RACF resource profiles

This section provides examples of defining resource profiles with different access levels.

- **controlling access to XBM maintenance actions**

  The following example shows how you can control access to all XBM maintenance actions for configurations (add, update, rename, and delete) on an XBM subsystem named XBMP:

  BMCXB XBM.XBMP.MAINT.CONFIG

  To control access to all XBM maintenance actions for configurations, management sets, groups, and options, use the following profile:

  BMCXB XBM.XBMP.MAINT.*

- **controlling access to all XBM subsystems and actions**

  To control access to all XBM subsystems and all XBM actions (ADMIN, MAINT, and SYSTEM) for all XBM resources, use the following profile:

  BMCXB XBM.*.*.*

  When XBM is started as a job or a started task, it activates a configuration. If you are using the security interface, XBM must be in the RACF started-task table and must have an associated RACF user ID.
controlling access to intelligent storage manipulation

To control access to intelligent storage manipulation (split and establish storage device mirrors) on an XBM subsystem, use the following profiles:

BMCXBM.XBMP.COPY.* (to control mirror split)
BMCXBM.XBMP.SYNC.* (to control mirror establish)

These actions must be available to the user ID of any snapshot jobs that are expected to use SSI-enabled hardware features, such as hardware snapshots or Instant Snapshots. Otherwise, limit access to users who are expected to manipulate intelligent storage features.

No RACF authorization by default

If you are running MVS with no RACF authorization by default, you must authorize the following resource profiles to the XBM started task. At a minimum, the XBM started task requires authorization to these resource profiles to successfully initialize:

BMCXBM.ssid.MAINT.CONFIG
BMCXBM.ssid.ADMIN.CONFIG

The variable ssid represents the name of the XBM subsystem.

Any user or group that has access to the resource profile must have an access level of Control or higher, and these profiles must be defined with a class of Facility. This class of profile will enable you to protect your nonstandard resources, such as program actions.

Using XBM user exits

XBM provides the ability for your installation to write either or both of the following security exits: XBMXAEX1 and XBMXAEX2. You can use these exits to provide security for installations without an SAF-compatible security package, or you can use them to supplement an SAF-compatible security package.

If the exit routines are in your XBM load library, XBM calls the routines. You can pass parameters to these exits by using the standard ALC conventions.
**XBMXAEX1 exit**

XBM calls the XBMXAEX1 exit after XBM gets the user ID. The exit passes a pointer to a copy of the user ID. The copied user ID is eight characters long. If required, the user ID is padded with blanks.

You can use this exit to change the user ID any way that you want, because you are changing only what XBM sees as a user ID. XBM does not check any return codes.

**XBMXAEX2 exit**

XBM calls the XBMXAEX2 exit when a user attempts to perform any of the protected action and object pairs listed in Table 28 on page 158.

XBM passes the following parameters to this exit:

- a pointer to the user ID, which the XBMXAEX1 exit might have modified
  
  The user ID is eight characters. If required, the user ID is padded with blanks.

- a pointer to the fully qualified *action.object*
  
  This parameter is variable in length and is delimited by a null (X'00').

For example, if the user is trying to activate a configuration on XBMP, the second parameter points to the following string of characters:

BMCXBMP.XBMP.ADMIN.CONFIG

A null (X'00') immediately follows the character string.

The exit returns a return code. You can use this exit to pass a return code to XBM that can result in bypassing any further security checking.

Table 29 describes the required return codes.

<table>
<thead>
<tr>
<th>Return code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>authorized and no security checking is required</td>
</tr>
<tr>
<td>4</td>
<td>ignore and perform security checking</td>
</tr>
<tr>
<td>8</td>
<td>no authority</td>
</tr>
</tbody>
</table>
Configuring XBM subsystems

This section describes how to set up the XBM subsystems and PROCs for XBM.

Completing XBM installation

To complete your installation of XBM, perform the following steps:

1. Copy the XBM PROC to a PROCLIB.

   Each maintenance level of XBM requires one started-task procedure per XBM subsystem. The PROC is generated by the Installation System into a member in the JCL data set.

   See “Defining and starting the XBM started task” on page 163 for detailed information about setting up the PROC.

   **NOTE**
   If you do not specify the value of the XBM ssid using the SYS parameter in the PROC, the XBM ssid will be the first four characters of the member name. For example, if the member name is XBMO15, the XBM ssid would be XBMO.

   For example, if you name your XBM subsystems XBMA, XBMB, and XBMC, you can specify the pattern XBM* as the XBM ssid value in the XBM$OPTS member to access all of these subsystems.

2. If you have a previous version of XBM active, cycle the XBM started task and any ISPF sessions to activate the new code.

3. Copy the XBM EXEC to a CLIST library.

   The Installation System customizes the member XBMISPF in the JCL library. Options for XBMISPF are defined in XBM$OPTS, which is also located in the JCL library. XBM$OPTS is the default options member for XBMISPF. If you do not specify an options member when you run XBMISPF, the EXEC uses the XBM$OPTS member.

   **NOTE**
   You should place XBMISPF and XBM$OPTS in a system library (SYSPROC or SYSEXEC) accessible to TSO users.
4 If you want to create the common BMCDISPN panel, modify ISR@PRIM or an equivalent panel, as follows:

A In the )BODY area of your user CLIST, add the following entry:

```
%Q + BMC XBM
```

B In the )PROC area of the XBM SYSPROC library, add the following entry:

```
Q,'CMD(XBMISPF)'
```

5 If you are using multiple XBM subsystems, create a separate XBM$OPTx member for each XBM subsystem. In each XBM$OPTx member, specify the name of the associated XBM subsystem in the XBMSSID parameter.

You could use pattern-matching characters in the XBMSSID parameter of the XBM$OPTS member and use a single XBM$OPTS member for all subsystems. To use pattern-matching characters, you must use a standard naming convention for your XBM subsystems so that the pattern can match multiple subsystem names.

For more information, see “Configuring XBM$OPTS for data sharing environments” on page 168.

---

**Defining and starting the XBM started task**

XBM started tasks are initialized by submitting the started-task procedure. More than one XBM subsystem can be started by using a single or multiple procedure members. To create an XBM procedure in your system library, complete the following steps:

1 Copy the XBM PROC from the install HLQ JCL to your system PROCLIB (where HLQ is the high-level qualifier you specified during installation).

2 Edit the PROC parameters as desired. You do not need to change the parameters before you start XBM for the first time.

3 Submit the JCL to start the XBM subsystem.
Figure 23 shows an example of the JCL for the procedure.

Figure 23  Sample of JCL for XBM started task

```plaintext
//XBM         PROC CONFIG='*',MS=,GRP=,XBMGRP=,SYS=,XSSI=
//*===================================================================
//*           (C)COPYRIGHT 1993 - 2009 BMC SOFTWARE
//*===================================================================
//XBM         EXEC PGM=XBMXMAIN,REGION=0M,TIME=1440,
//            PARM=('CONFIG=&CONFIG MS=&MS GROUP=&GRP ',
//            ' XBMGROUP=&XBMGRP SYS=&SYS SSI=&XSSI')
//********************************************************************
//STEPLIB     DD DISP=SHR,DSN=hlq.XBMLINK (xbm/Solution loadlib)
//            DD DISP=SHR,DSN=hlq.BBLINK (BMC Security modules)
//BMCPSWD     DD DISP=SHR,DSN=securityLibraryName (if used for auth)
//SYSPRINT    DD SYSOUT=*,DCB=RECFM=VA
//XBMXINIT    DD DUMMY  *** XBM.INITIALIZATION.COMMAND.FILE  ***
//PROIGN      DD DUMMY
//XBMXTASK    DD DISP=SHR,DSN=yourlib.SVAA(OR IXFP).SIBLINK
//            DD DISP=SHR,DSN=yourlib.SVAA(OR IXFP).SIBLOAD
//            DD DISP=SHR,DSN=yourlib.SVAA(OR IXFP).STKLOAD
//XBMREP01    DD DISP=SHR,DSN=hlq.VSAM.XBMREPO1
//XBMREP02    DD DISP=SHR,DSN=hlq.VSAM.XBMREPO2
```

**NOTE**

You must specify the location of the modules for security password checking and for authorization.

- You must include the location of the security modules in the XBM STEPLIB or the linklist. The security modules are typically located in the XBM.BBLINK library.

- You can specify the location of the authorization modules by either including them in an XBM STEPLIB library or in the LINKLIST, or by using the BMCPSWD DD statement and including them in the specified library.

**Parameters**

The XBM procedure accepts the parameters that are described in Table 30.

**Table 30  XBM procedure parameters (part 1 of 3)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIG</td>
<td>The first time that you start XBM you do not have a configuration file to specify. Consequently, XBM activates the DEFAULT_CONFIG configuration. During subsequent restarts, if you do not specify a CONFIG parameter, XBM activates the last active configuration.</td>
</tr>
<tr>
<td>MS and GROUP</td>
<td>The first time that you start XBM you do not have a management set (MS) or GROUP to specify. MS and GROUP do not have default values so neither of these structures is activated. During subsequent restarts, XBM activates these structures only if you specify them or add the ACTIVATE commands to your XBMXINIT data set.</td>
</tr>
</tbody>
</table>
Defining and starting the XBM started task

Chapter 8 Configuring XBM

XBMGROUP This parameter specifies the name of the cross-system coupling facility (XCF) group that you want this XBM subsystem to join when the PSS component is started, if applicable. This name must match the first level of the structure name for the XBM structures defined in your CFRM policy. The first time that you start XBM, the default for this parameter is XBMGROUP.

If you specify an XCF group name by using this parameter, you must perform the following tasks before the XBM subsystem can join the group:

1. Set the Join sysplex group when PSS started option to Yes on the PSS Options subpanel. For more information about the PSS component, see the EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide.

2. Start the PSS component.

Note: The XBMGROUP parameter overrides any XCF group name that you enter in the Sysplex group name field on the PSS Options subpanel. If you enter an XCF group name on the MVS command line to start the XBM started task, that group name overrides the XBMGROUP parameter and the group name on the PSS Options subpanel.

SYS The XBM subsystem name (identified as XBMID by DB2 utilities, or XBMSSID by IMS utilities) is the first four characters of the started-task procedure, or it is the name specified with the SYS parameter (a maximum of four characters). The SYS parameter takes higher precedence.

XBM requires that this subsystem name:

- start with a letter
- be two to four characters in length
- contain only the letters A–Z, the numbers 0–9, $, or #

If an invalid value is specified in the SYS parameter, XBM starts the subsystem by using the first four characters of the name of the started task or job as the XBM subsystem name. For example, if your site has naming conventions that require you to name the started task DB2AXBM (where DB2A is a valid DB2 subsystem name), the SYS parameter lets you name your XBM subsystem so it does not conflict with the DB2 subsystem name, another XBM subsystem name, or an MVS command.

Note: If you want to use XBM in a data sharing environment, you can use a single PROC for multiple subsystems if you use the $SYSCлонЕ symbolic from MVS system symbols. For more information, see “Defining PROCS for use with multiple XBM subsystems” on page 167.

Warning! The SYS parameter on the started task JCL (or on the XBM START command) names the XBM subsystem only—do not use any MVS subsystem name, DB2 subsystem name, or MVS subsystem command for the SYS parameter.

### Table 30 XBM procedure parameters (part 2 of 3)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| XBMGROUP  | This parameter specifies the name of the cross-system coupling facility (XCF) group that you want this XBM subsystem to join when the PSS component is started, if applicable. This name must match the first level of the structure name for the XBM structures defined in your CFRM policy. The first time that you start XBM, the default for this parameter is XBMGROUP. If you specify an XCF group name by using this parameter, you must perform the following tasks before the XBM subsystem can join the group:  
  1. Set the Join sysplex group when PSS started option to Yes on the PSS Options subpanel. For more information about the PSS component, see the EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide.  
  2. Start the PSS component.  
  Note: The XBMGROUP parameter overrides any XCF group name that you enter in the Sysplex group name field on the PSS Options subpanel. If you enter an XCF group name on the MVS command line to start the XBM started task, that group name overrides the XBMGROUP parameter and the group name on the PSS Options subpanel. |
| SYS       | The XBM subsystem name (identified as XBMID by DB2 utilities, or XBMSSID by IMS utilities) is the first four characters of the started-task procedure, or it is the name specified with the SYS parameter (a maximum of four characters). The SYS parameter takes higher precedence.  
  XBM requires that this subsystem name:  
  - start with a letter  
  - be two to four characters in length  
  - contain only the letters A–Z, the numbers 0–9, $, or #  
  If an invalid value is specified in the SYS parameter, XBM starts the subsystem by using the first four characters of the name of the started task or job as the XBM subsystem name. For example, if your site has naming conventions that require you to name the started task DB2AXBM (where DB2A is a valid DB2 subsystem name), the SYS parameter lets you name your XBM subsystem so it does not conflict with the DB2 subsystem name, another XBM subsystem name, or an MVS command.  
  Note: If you want to use XBM in a data sharing environment, you can use a single PROC for multiple subsystems if you use the $SYSCлонЕ symbolic from MVS system symbols. For more information, see “Defining PROCS for use with multiple XBM subsystems” on page 167.  
  Warning! The SYS parameter on the started task JCL (or on the XBM START command) names the XBM subsystem only—do not use any MVS subsystem name, DB2 subsystem name, or MVS subsystem command for the SYS parameter. |
Defining and starting the XBM started task

Table 31 describes the DD statements that you can specify in the start procedure.

### DD statements

Table 31 describes the DD statements that you can specify in the start procedure.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XBMREP&lt;sub&gt;nn&lt;/sub&gt;</td>
<td>This statement is required. It references the XBM repository data sets; &lt;sub&gt;nn&lt;/sub&gt; represents a number from 01 through 09. If you allocate multiple repository data sets, the number suffixes must be sequential and begin with 01. In Figure 23 on page 164, two repository data sets are allocated.</td>
</tr>
<tr>
<td>XBMXTASK</td>
<td>This statement is required when using IBM RVA or StorageTek SVA devices for Instant Snapshots or SSI-assisted (hardware) snapshots. This statement references the location of the library containing the SIBBATCH program. If you reference the SIBBATCH library location using the MVS linklist, delete or comment out this DD statement.</td>
</tr>
<tr>
<td>BMCPSWD</td>
<td>This optional statement specifies the location of the XBM authorization modules. At initialization, XBM attempts to find authorization modules in the BMCPSWD DD statement, or a if BMCPSWD library is not used, within the XBM STEPLIB or LINKLIST. If XBM cannot find the authorization modules, XBM component activation will fail. <strong>Note:</strong> If you specify both the BMCPSWD statement in the PROC and include authorization modules within your STEPLIB or LINKLIST, XBM will only use the authorization modules specified the BMCPSWD statement to authorize the product.</td>
</tr>
</tbody>
</table>
Defining PROCS for use with multiple XBM subsystems

If you want to set up multiple XBM subsystems, perform the following steps:

1. Use the Installation System to unload the XBM libraries to a common XBM load library.

2. On each system where you want to run XBM, create an XBM PROC that points to the common XBM load library.

NOTE
XBM repositories can be shared among XBM subsystems. However, to create unique repositories for each XBM subsystem, run the $C10VSAM job and provide a different data set name for the repository on each XBM subsystem.

Table 31  DD statements for XBM started task (part 2 of 2)

<table>
<thead>
<tr>
<th>DD statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROIGN</td>
<td>This statement is required when using XBM and FlashCopy version 2 to process snapshots in the same environment as the BMC MAINVIEW SRM product. This statement prevents MAINVIEW SRM from changing the snapshot allocations. If you use another product to manage volume allocation or volume pooling, see that product’s documentation for information about how to exclude XBM from that management. For more information, see EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide.</td>
</tr>
<tr>
<td>XBMXINIT</td>
<td>This optional statement points to an XBM initialization command file. This command file allows you to specify commands for XBM to perform automatically during initialization.</td>
</tr>
</tbody>
</table>

NOTE
BMC recommends that you specify REGION=0M. This allows XBM to dynamically obtain enough storage to allocate its internal structures. If XBM does not have the storage necessary to create internal structures, initialization fails.

If you use IEFUSI exits to limit region size, specify a minimum REGION=65M to allow XBM enough storage to allocate its internal structures.
As an alternative to creating multiple PROCs, you can also use one of the following methods to enable the use of a single PROC to start multiple XBM subsystems:

- Override the SYS= to a unique XBM SSID when you issue the START XBM command. For example, issue
  
  — START XBM,SYS=XBM1 to start the XBM subsystem on SYS1
  — START XBM,SYS=XBM2 to start the XBM subsystem on SYS2
  
  and so on.

- Use the &SYSCLONE symbolic from the MVS system symbols as part of the SYS= parameter.

  Doing so allows you to create unique XBM SSIDs across the sysplex without having separate PROCs. You can create two-, three-, or four-character IDs by combining &SYSCLONE with other literal characters. Table 32 provides examples of using &SYSCLONE with other characters to produce unique identifiers.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Results</th>
<th>Examples</th>
</tr>
</thead>
</table>
| SYS=&SYSCLONE | two-character, unique subsystem identifier | Subsystem SYSO: XBMSSID=SO  
Subsystem SYSP: XBMSSID=SP |
| SYS=A&SYSCLONE | three-character, unique subsystem identifier | Subsystem SYSO: XBMSSID=ASO  
Subsystem SYSP: XBMSSID=ASP |
| SYS=XB&SYSCLONE | four-character, unique system identifier | Subsystem SYSO: XBMSSID=XBSO  
Subsystem SYSP: XBMSSID=XBSP |
| SYS=AH&SYSCLONE | four-character, unique system identifier | Subsystem SYSO: XBMSSID=AHSO  
Subsystem SYSP: XBMSSID=AHSP |

To determine the value of &SYSCLONE at your site, contact your system programmer.

**Configuring XBM$OPTS for data sharing environments**

If you are using XBM in a data sharing environment, BMC recommends that you specify a pattern mask in the XBMSSID parameter of the XBM$OPTS member. Doing so allows you to use the ISPF interface to access all XBM subsystems that match the pattern using only a single CLIST and XBM$OPTS member. Otherwise, you would need a different XBM$OPTS member for each XBM subsystem.
For example, if you name your XBM subsystems XBMA, XBMB, and XBMC, you can specify the pattern XBM* as the value of XBMSSID in the XBM$OPTS member to access all of these subsystems. For an example of the XBM$OPTs member, see Figure 24.

Figure 24   Sample of XBM$OPTS member

```
/* REXX */
/* XBM(TM) VERSION 5.6.XX */
XBMSSID = 'XBM*'     /* XBM SUBSYSTEM ID */
XBMLLIB = 'HLQ:XXLINK'
XBMLIB = 'HLQ:XXPLIB'
XBMDLIB = 'HLQ:XXPLIB'
XBMTLIB = 'HLQ:XXPLIB'
ADDRESS ISPEXEC "VPUT (XBMSSID) SHARED"
ADDRESS ISPEXEC "VPUT (XBMLLIB) SHARED"
ADDRESS ISPEXEC "VPUT (XBMLIB) SHARED"
ADDRESS ISPEXEC "VPUT (XBMDLIB) SHARED"
ADDRESS ISPEXEC "VPUT (XBMTLIB) SHARED"
```

Where to go from here

Depending on the XBM components you plan to use, you might have to perform additional tasks to configure the components. See the chapter about configuring and managing the XBM subsystem in the EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide.

Using the XBM initialization command file

The XBM initialization command file allows you to specify commands for XBM to perform automatically following initialization. For example, you can instruct XBM to activate several management sets after initialization.

The XBMXINIT DD statement that is included in the XBM PROC points to the command file. The command file is a data set that you create which lists the commands that you want to execute. An example of an XBM initialization command file is shown in Figure 25.

Figure 25   XBM initialization command file

```
* *****XBM INITIALIZATION COMMAND FILE*****
*
* COMMANDS TO ACTIVATE MANAGEMENT SETS
ACT MS PRODUCTION_1
ACT MS PRODUCTION_2
ACT MS PRODUCTION_3
*
* COMMANDS TO ACTIVATE GROUPS
ACT GROUP WIDGET_1
ACT GROUP WIDGET_2
* ******************************************************
```
Configuring XBM components

The command file in Figure 25 supports the comment operator command, "* " (asterisk followed by a space). You can include the comment command in the file to provide any descriptive text that is required. Comments are echoed to SYSPRINT and the MVS console. For a list of commands that you can use in the command file, see the EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide.

**NOTE**

BMC does not recommend activating a configuration using the initialization command file. If you do not specify a configuration in the PROC, XBM automatically activates the last configuration that was used before it starts to process the initialization command file. If you then activate a configuration in the command file, XBM must deactivate the configuration it started with the PROC before activating the new configuration.

Configuring XBM components

This section provides a brief overview of the optional **components** that you might need to configure before using XBM:

- If you are planning on performing hardware or Instant Snapshots, you must configure the SSI component. This component manages communication between XBM and the hardware devices.

- If you are going to use XBM in a DB2 data sharing environment for I/O caching or if you are going to use XBM for snapshot processing in a DB2 or IMS data sharing environment, you must configure the PSS component.

For more information about these tasks, see the EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide.

Setting up the SSI component

The SSI component, when used with supported software and hardware, can perform hardware-assisted snapshot processing and Instant Snapshots. This section explains how to install and configure the software and hardware products that the SSI component requires.

**Before you begin**

Contact your intelligent storage vendor to ensure that the software for your devices has appropriate PTFs and microcode installed to support XBM hardware-assisted snapshot functions.
When you start the SSI component, XBM starts a discovery process that locates and determines the status of supported storage devices that you have in your environment. Through the SSI monitor, you can view and manage these devices. The amount of time it takes XBM to perform the discovery process depends on the number and complexity of hardware devices in your environment.

**To set up the SSI component**

1. Install one of the storage devices and the appropriate supporting software that are listed in Table 33.

**Table 33  Hardware and software requirements for SSI**

<table>
<thead>
<tr>
<th>Storage device</th>
<th>Required software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic device capable of PPRC</td>
<td>version of MVS that supports PPRC operations</td>
</tr>
<tr>
<td>EMC Symmetrix a</td>
<td>■ EMC Symmetrix Control Facility(^b) (SCF) subsystem</td>
</tr>
<tr>
<td></td>
<td>■ EMC TimeFinder(^c)</td>
</tr>
<tr>
<td>Hitachi ShadowImage</td>
<td>■ Version of MVS that supports PPRC operations</td>
</tr>
<tr>
<td></td>
<td>■ Remote Copy (HRC)</td>
</tr>
<tr>
<td></td>
<td>■ IBM DFSMS/MVS Remote Copy Support</td>
</tr>
<tr>
<td></td>
<td>■ IBM FlashCopy version 2</td>
</tr>
<tr>
<td>IBM Enterprise Storage Subsystem (Shark)</td>
<td>■ IBM FlashCopy version 2</td>
</tr>
<tr>
<td>IBM RVA(^d)</td>
<td>■ IBM Extended Facilities Product</td>
</tr>
<tr>
<td>StorageTek SVA(^d)</td>
<td>■ IBM Extended Facilities Product (IXFP)</td>
</tr>
<tr>
<td></td>
<td>■ StorageTek SVA Administrator</td>
</tr>
</tbody>
</table>

\(^{a}\) To use the volume-level snapshot method, you must install the 5x63 level of EMC microcode. If you plan to use the data set-level or Instant Snapshot method, you must install the 5x66 level of EMC microcode.

\(^{b}\) To use the SCF subsystem, you must reference the location of the subsystem in the XBM STEPLIB or in the MVS link list.

\(^{c}\) If you have EMC TimeFinder version 5.3.1 or later, you might need two EMC products. If you are performing mirroring, you will need EMC TimeFinder/Mirror. If you are performing data-set-level or Instant Snapshots, you will need EMC TimeFinder/Snap. EMC separated the mirroring and SNAP capability in EMC TimeFinder version 5.3.1. For more information, see the EMC documentation.

\(^{d}\) To support Instant Snapshots or data set-level snapshots using IBM RVA or STK SVA devices, XBM requires the SIBBATCH program. The SIBBATCH program is an IBM IXFP utility program. The library for the SIBBATCH program must be copied to an APF-authorized library on your system. Reference the location of the SIBBATCH library by using your MVS LNKLST or the XBMXTASK DD statement in the JCL generated for the XBM PROC, shown in Figure 23 on page 164. If you reference the location of the SIBBATCH library in your MVS LNKLST, remove or comment out the XBMXTASK DD statement in the XBM PROC JCL.

2. Configure the XBM product, including the SSI component.

For more information about configuring the SSI component, see *EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide*.
Setting up the PSS component

The PSS component enables I/O caching and snapshot utilities processing in a DB2 sysplex (data sharing) environment and snapshot processing in an IMS data sharing environment. To use the PSS component, perform the steps described in this procedure.

1. Add the XBM cache, list, and lock structures to your coupling facility resource manager (CFRM) policy. For detailed information about these CFRM structures, see the *EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide*.

   **NOTE**
   
   A single set of XBM structures in the CFRM policy is valid for multiple DB2 data sharing groups.

   If only the snapshot features of XBM are authorized, XBM does not use the LOCK1 structure. However, BMC recommends defining it to ensure that it is available for use later.

2. Install and initialize an XBM subsystem on each CPU running DB2 or IMS in the sysplex.

   **NOTE**
   
   All XBM subsystems in a data sharing group must be the same version.

3. Specify the appropriate values on the PSS Options panel. Instructions for accessing the PSS Options panel and setting appropriate values can be found in the *EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide*.

4. Stop and restart the PSS component on each XBM subsystem to enable the options.
Appendixes

This part contains the following appendixes:

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Appendix B
Typical installation jobs .............................................................. 193
Product authorization messages

This appendix contains the following topics:

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- Message severity codes ......................................................... 175
- Product Authorization messages .............................................. 176
- Runtime messages .............................................................. 188

Message format

The Product Authorization utility issues messages that consist of a message identifier and message text. These messages use the following format:

- Variable text is italicized and enclosed in angle brackets (<example>). The utility determines the appropriate text when issuing the message.

- Words that are enclosed in brackets and separated by vertical bars ([ON | OFF]) indicate alternating fixed values, one of which will be displayed on your screen.

Message severity codes

Messages from the Product Authorization utility use the following severity codes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (action)</td>
<td>Immediate action is required.</td>
</tr>
<tr>
<td>E (error)</td>
<td>The function that you requested was not completed.</td>
</tr>
<tr>
<td>I (information)</td>
<td>The purpose of the message is solely to provide information. No action is required.</td>
</tr>
</tbody>
</table>
Product Authorization messages

The Product Authorization utility can issue the following error messages.

**BMC89000A**  **PASSWORD LIBRARY IS A REQUIRED FIELD.**

*Explanation:* You must specify the password library.

*User Response:* Enter the data set name for the password library, and retry the action.

**BMC89001A**  **PASSWORD IS A REQUIRED FIELD.**

*Explanation:* The action that you requested requires that you specify a password.

*User Response:* Enter the password, and retry the action. If you do not have a password, contact your BMC sales representative.

**BMC89002E**  **PASSWORD MAY NOT CONTAIN BLANK CHARACTERS.**

*Explanation:* A blank is not a valid password character. Valid characters are A to Z (excluding I and O), 0 to 9, @, +, and =.

*NOTE*

Some keyboards do not have the “at” sign (@). The asterisk (*) is a synonym for @. You can use these two characters (@ and *) interchangeably when typing passwords.

*User Response:* Correct the password, and retry the action.
BMC89003A  SERIAL NUMBER IS A REQUIRED FIELD.

Explanation: A valid CPU serial number has not been specified. Valid CPU serial numbers consist of five hexadecimal digits. No blanks or special characters are allowed.

User Response: Enter a valid CPU serial number, and retry the action.

BMC89004E  SERIAL NUMBER FIELD CONTAINS INVALID CHARACTERS.

Explanation: The specified CPU serial number contains invalid characters. Valid CPU serial numbers consist of five hexadecimal digits. No blanks or special characters are allowed.

User Response: Enter a valid CPU serial number, and retry the action.

BMC89005E  SERIAL NUMBER MAY NOT CONTAIN BLANK CHARACTERS.

Explanation: The specified CPU serial number contains a blank character and is invalid. Valid CPU serial numbers consist of five hexadecimal digits. No blanks or special characters are allowed.

User Response: Enter a valid CPU serial number, and retry the action.

BMC89006A  MODEL NUMBER IS A REQUIRED FIELD.

Explanation: A valid CPU model number has not been specified. Valid CPU model numbers consist of four hexadecimal digits. No blanks or special characters are allowed.

User Response: Enter a valid CPU model number, and retry the action.

BMC89007E  MODEL NUMBER FIELD CONTAINS INVALID CHARACTERS.

Explanation: The specified CPU model number contains invalid characters. Valid CPU model numbers consist of four hexadecimal digits. No blanks or special characters are allowed.

User Response: Enter a valid CPU model number, and retry the action.

BMC89008E  MODEL NUMBER MAY NOT CONTAIN BLANK CHARACTERS.

Explanation: The specified CPU model number contains a blank character. Valid CPU model numbers consist of four hexadecimal digits. No blanks or special characters are allowed.

User Response: Correct the model number, and retry the action.

BMC89009E  DATA SET NAME IS INVALID.

Explanation: The specified data set name is invalid. The data set does not exist, or it is not cataloged.

User Response: Correct the data set name, and retry the action.
<table>
<thead>
<tr>
<th>Message ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC89010A</td>
<td><strong>OPTION IS A REQUIRED FIELD. VALID VALUES ARE 1, 2, 3, 4, OR 5.</strong></td>
</tr>
<tr>
<td></td>
<td>Explanation: No menu option has been specified. All functions are suppressed.</td>
</tr>
<tr>
<td></td>
<td>User Response: Enter a valid option number in the selection field, and retry the action.</td>
</tr>
<tr>
<td>BMC89011E</td>
<td><strong>INVALID OPTION. PLEASE ENTER 1, 2, 3, 4, OR 5.</strong></td>
</tr>
<tr>
<td></td>
<td>Explanation: The specified option is invalid. All functions are suppressed.</td>
</tr>
<tr>
<td></td>
<td>User Response: Enter a valid option number in the selection field, and retry the action.</td>
</tr>
<tr>
<td>BMC89012E</td>
<td><strong>OPTION IS REQUIRED. VALID VALUES ARE 1, 2, OR 3.</strong></td>
</tr>
<tr>
<td></td>
<td>Explanation: No menu option has been specified. All functions are suppressed.</td>
</tr>
<tr>
<td></td>
<td>User Response: Enter a valid option number in the selection field, and retry the action.</td>
</tr>
<tr>
<td>BMC89013E</td>
<td><strong>&lt;command&gt; IS NOT A VALID COMMAND.</strong></td>
</tr>
<tr>
<td></td>
<td>Explanation: The specified command is invalid.</td>
</tr>
<tr>
<td></td>
<td>User Response: Correct the command, or remove the command from the Command line.</td>
</tr>
<tr>
<td>BMC89019E</td>
<td><strong>YOU MAY VIEW PRODUCT AUTHORIZATION FOR THIS PRODUCT FROM ONLY ONE LOGICAL SCREEN AT A TIME.</strong></td>
</tr>
<tr>
<td></td>
<td>Explanation: Because the Product Authorization utility is open on another panel, you cannot open it.</td>
</tr>
<tr>
<td></td>
<td>User Response: Use the panel that is currently displaying Product Authorization, or cancel that panel and resubmit the job from this panel.</td>
</tr>
<tr>
<td>BMC89021E</td>
<td><strong>ERROR DURING DYNAMIC ALLOCATION. PASSWORD LIBRARY WAS NOT ALLOCATED, ERROR CODE=&lt;code&gt;, INFO. CODE=&lt;code&gt;, DDNAME=SYSLIB.</strong></td>
</tr>
<tr>
<td></td>
<td>Explanation: The Product Authorization interface and the Product Authorization utility were unable to allocate the password library dynamically. For descriptions of the error codes and information codes that the DYNALLOC macro returns, see the IBM book Authorized Assembler Programming Guide and the appendixes of the ISPF Help tutorial panels.</td>
</tr>
<tr>
<td></td>
<td>The action fails, or the batch (utility) job terminates.</td>
</tr>
<tr>
<td></td>
<td>User Response: Verify that you specified the correct data set name for the password library and that the data set exists and is cataloged on DASD. Retry the action. If failure persists, contact BMC Customer Support.</td>
</tr>
</tbody>
</table>
BMC89022E ERROR IN INPUT DSN. PLEASE CONTACT BMC PRODUCT SUPPORT.

Explanation: The data set name for the Product Authorization table was not found. All functions are suppressed.

User Response: If the data set name is wrong, correct it and resubmit the job. If the data set name is correct, contact BMC Customer Support.

BMC89029I PRODUCT AUTHORIZATION TABLE WAS SUCCESSFULLY UPDATED. PRESS ENTER TO CONTINUE.

Explanation: The table is updated, and all functions are processed.

User Response: Press Enter to continue.

BMC89050E THE BMC PRODUCT CODE IS MISSING OR IS INVALID. CHECK PARM= ON JCL EXEC STATEMENT.

Explanation: The JCL did not specify a product code (or an invalid product code) in the PARM parameter of the JCL. The password is not processed.

User Response: Add or correct the product code in the PARM parameter of the JCL EXEC statement. For assistance with syntax, see the applying passwords chapter.

BMC89051E UNRECOGNIZABLE OR INCOMPLETE PARAMETER ON THE CURRENT INPUT CONTROL STATEMENT.

Explanation: A parameter on the input control statement is incorrect. The password is not processed.

User Response: Correct the parameter, and retry the action. For assistance with syntax, see the applying passwords chapter.

BMC89052E MODEL NUMBER CANNOT BE LONGER THAN FOUR CHARACTERS.

Explanation: A CPU model number of more than four characters was specified in the batch. CPU model numbers cannot exceed four characters. The password is not processed.

User Response: Correct the model number, and retry the action. For assistance with syntax, see the applying passwords chapter.

BMC89053E SERIAL NUMBER MUST BE 5 HEXADECIMAL CHARACTERS WITH DELIMITING HYPHEN.

Explanation: The CPU serial number must be followed by a delimiting hyphen (-). The password is not processed.

User Response: Insert a hyphen between the serial number and the model number, and retry the action. For assistance with syntax, see the applying passwords chapter.
BMC89054E  THE FIRST CHARACTER OF THE BMC PRODUCT CODE CANNOT BE A NUMBER. PLEASE CORRECT AND RERUN THE JOB.

Explanation: The first character of the product code is invalid. The password is not processed.

User Response: Correct the first character of the product code in the PARM field on the JCL EXEC statement. For assistance with syntax, see the applying passwords chapter.

BMC89055E  THE PASSWORD MUST BE FORMATTED AS “PSWD=PPP,PPP,PPP,PPP” OR “PSWD=PPPPPPPPPPPP” OR “PPP PPP PPP PPP.”

Explanation: The password in the batch is incorrect. Use any of the following formats for the password:

- twelve consecutive characters without spaces
- four sets of three characters, with each set separated by a comma or a blank space.

The password is not processed.

User Response: Correct the password, and resubmit the job. For assistance with syntax, see the applying passwords chapter.

BMC89057E  OPEN FAILURE FOR DDNAME=SYSIN.

Explanation: The Product Authorization utility batch program was unable to open the data set that the SYSIN DD statement specified. The batch program terminates.

User Response: Correct the data set name in the SYSIN DD statement, and resubmit the job. For assistance with syntax, see the applying passwords chapter.

BMC89058E  MODEL NUMBER CONTAINS INVALID CHARACTERS.

Explanation: At least one character in the CPU model number that you specified in the batch JCL is invalid. Only hexadecimal characters (0 to 9 and A to F) are allowed in the model number. The password is not processed.

User Response: Correct the model number, and resubmit the job. For assistance with syntax, see the applying passwords chapter.

BMC89059E  SERIAL NUMBER CONTAINS INVALID CHARACTERS.

Explanation: At least one character in the CPU serial number that you specified in the batch JCL is invalid. Only hexadecimal characters (0 to 9 and A to F) are allowed in the serial number. The password is not processed.

User Response: Correct the serial number, and resubmit the job. For assistance with syntax, see the applying passwords chapter.
**BMC89060E** THIS PASSWORD REQUIRES “NEWCPUID” KEYWORD FOR THE CPU ID TO BE
ADDED.

*Explanation:* The Add password that is being processed requires specification of the NEWCPUID keyword. The password is not processed.

*User Response:* Specify the NEWCPUID keyword on your input control statement. For assistance with syntax, see the applying passwords chapter.

**BMC89061E** THIS PASSWORD REQUIRES “OLDCPUID” KEYWORD FOR THE CPU ID TO BE
DELETED.

*Explanation:* The DELETE password that is being processed requires specification of the OLDCPUID keyword. The password is not processed.

*User Response:* Specify the OLDCPUID keyword on your input control statement. For assistance with syntax, see the applying passwords chapter.

**BMC89062E** PASSWORD TO UPDATE AN EXISTING CPU ID ENTRY REQUIRES “OLDCPUID” KEYWORD.

*Explanation:* The UPDATE password that is being processed requires specification of the OLDCPUID keyword. The password is not processed.

*User Response:* Specify the OLDCPUID keyword on your input control statement. For assistance with syntax, see the applying passwords chapter.

**BMC89063E** THIS PASSWORD REQUIRES “NEWCPUID” AND “OLDCPUID” KEYWORDS.

*Explanation:* The REPLACE password that is being processed requires specification of the NEWCPUID and OLDCPUID keywords. The password is not processed.

*User Response:* Specify the NEWCPUID and OLDCPUID keywords on your input control statement. For assistance with syntax, see the applying passwords chapter.

**BMC89064W** ERRORS CAUSED TERMINATION. SOME OR ALL REQUESTS DID NOT COMPLETE SUCCESSFULLY.

*Explanation:* The input data contains one or more errors. Processing terminates at the point of the error.

*User Response:* Examine the input control statements for errors. For assistance with syntax, contact BMC Customer Support for assistance.

**BMC89065I** ALL REQUESTS COMPLETED SUCCESSFULLY.

*Explanation:* All requested functions have been processed. The product load library is updated.

*User Response:* No action is required.
**BMC89069E**  PERMANENT PRODUCT AUTHORIZATION TABLE’S GRACE PERIOD IS INVALID. PLEASE CONTACT BMC PRODUCT SUPPORT.

*Explanation:* An error occurred that invalidated the table’s grace period. The table must be rebuilt. All functions are suppressed.

*User Response:* Contact BMC Customer Support for assistance.

**BMC89070E**  ISPF V3 REQUIRED. USE BATCH UPDATE PGM INSTEAD.

*Explanation:* ISPF version 3 (or later) is required to run the online customer interface. The online customer interface terminates.

*User Response:* Use the batch update program.

**BMC89100E**  INTERNAL ERROR, RC = <returnCode>. PLEASE CONTACT BMC PRODUCT SUPPORT.

*Explanation:* A processing error occurred. The function is not performed.

*User Response:* Note the return code, and contact BMC Customer Support for assistance.

**BMC89101E**  PASSWORD CONTAINS INVALID CHARACTERS.

*Explanation:* The password contains one or more invalid special characters. Valid special characters are @, =, and +. The password is not processed.

*User Response:* Correct the password, and resubmit the job.

**BMC89102E**  PASSWORD CONTAINS ILLEGAL CHARACTERS (I AND/OR O).

*Explanation:* The password contains the letter I, O, or both. These letters are not permitted in passwords. The password is not processed.

*User Response:* Correct the password, and resubmit the job.

**BMC89104E**  PASSWORD DOES NOT MATCH SERIAL NUMBER AND MODEL NUMBER.

*Explanation:* The message can have either of the following causes:

- The specified password is not correct for the specified CPU serial number and model number

- The product code in the PARM statement is not correct (applicable only if you used the batch interface).

*User Response:* To obtain your CPU serial and model numbers, log on to the processor and perform one of the following actions:
From the Product Authorization Primary Menu (Figure 13 on page 120), select the **Display current processor information** option and submit the Product Authorization batch program with the LIST option. For assistance with syntax, see the applying passwords chapter.

From the system console, issue the MVS operator command **D M=CPU**.

*User Response:* Verify that the specified CPU serial number and model number are correct. If the numbers are incorrect, retry the action, specifying the proper numbers. If the numbers are correct, contact BMC Customer Support for assistance.

If you used the batch program, verify that the three-character product code specified in the PARM statement is correct. If the product code is correct, but the job still fails, contact BMC Customer Support for assistance.

---

**BMC89105E**  
**PASSWORD IS INCORRECT. PLEASE VERIFY AND RE-ENTER THE PASSWORD.**

*Explanation:* The specified password is not correct. The password is rejected.

*User Response:* Correct the password and retry the action. If the error persists, contact BMC Customer Support for assistance.

**BMC89106E**  
**COULD NOT FIND THE EXISTING CPU ID ENTRY THAT WAS TO BE DELETED.**

*Explanation:* The Product Authorization utility attempted to delete an entry in the Product Authorization table, but could not find the entries. This error usually indicates that the wrong product library was specified. No changes are made to the Product Authorization table.

*User Response:* Enter the correct product load library and retry the action. You can view entries in the Product Authorization table by selecting the **Display product authorization** option (Figure 18 on page 129) or by submitting the Product Authorization batch program with the LIST option.

**BMC89107E**  
**ATTEMPTING TO ADD A CPU ID THAT IS ALREADY IN THE TABLE.**

*Explanation:* This CPU is already authorized for this product. The password is not processed.

*User Response:* Determine whether the CPU ID is correct. You might need to display current processor information.

**BMC89108W**  
**PRODUCT IS NOT AUTHORIZED TO EXECUTE. PLEASE ENTER BMC-SUPPLIED PASSWORDS.**

*Explanation:* The password library lists no authorized CPUs. The product cannot run.

*User Response:* Use a password to add an entry for the correct processor to the product load library.
BMC89110I **PRODUCT AUTHORIZATION TABLE WAS SUCCESSFULLY BUILT/UPDATED. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON ANY PROCESSOR UNTIL <mm/dd/yyyy>. PRESS ENTER TO CONTINUE.**

*Explanation:* The Product Authorization table has been modified to allow execution of this product temporarily (until the indicated date).

*User Response:* No action is required. If you have a permanent license for this product, contact your BMC sales representative to obtain a permanent password.

BMC89111E **RC=<n> WHILE ATTEMPTING TO DECODE THE EXPIRATION DATE.**

*Explanation:* The Product Authorization utility was unable to decode the expiration date because of an internal error. The action fails, or the batch job terminates.

*User Response:* Note the return code, and contact BMC Customer Support for assistance.

BMC89112W **THERE ARE NO ENTRIES FOR LICENSED PROCESSORS.**

*Explanation:* The password library lists no authorized CPUs. The product cannot run.

*User Response:* Use a password to add an entry for the correct processor to the password library.

BMC89113E **DATA SET DOES NOT EXIST OR IS NOT CATALOGED.**

*Explanation:* The specified password library cannot be found. The action fails, or the batch job terminates.

*User Response:* Correct the data set name for the password library or catalog the data set, and retry the action.

BMC89114E **OBTAIN ERROR. DATA SET MAY BE ARCHIVED.**

*Explanation:* The specified password library cannot be found and might be archived. The action fails, or the batch job terminates.

*User Response:* Enter the correct data set name for the password library or restore the data set, and retry the action.
BMC89115E DATA SET IS NOT A VALID LOAD LIBRARY.

Explanation: The specified password library is not a partitioned data set. The Product Authorization interface and Product Authorization utility expect the product load library to be a partitioned data set. The action fails, or the batch (utility) job terminates.

User Response: Verify that you specified the data set name for the correct password library. If the data set is not partitioned, check to ensure that the product was correctly installed. Retry the action. If the error persists, contact BMC Customer Support for assistance.

BMC89116E THIS TEMPORARY AUTHORIZATION PASSWORD CONTAINS AN EXPIRATION DATE THAT HAS ALREADY EXPIRED.

Explanation: To be valid, the expiration date for the temporary password must be equal to or greater than the current date. The password is not processed.

User Response: Contact your BMC sales representative.

BMC89117E THE PRODUCT AUTHORIZATION TABLE IS FULL. NO NEW CPU IDS CAN BE ADDED.

Explanation: The maximum number of CPUs have been stored in this Product Authorization table. The password is not processed.

User Response: If some CPUs in the table are no longer being used, you can delete them to make room for this one. To obtain a DELETE password, contact your BMC sales representative. If no CPUs can be deleted, call BMC Customer Support for assistance.

BMC89118E TEMPORARY AUTHORIZATION PASSWORD DOES NOT CORRESPOND TO THE CURRENT BMC PRODUCT.

Explanation: The temporary authorization in your Product Authorization library is for a product other than the one that you are attempting to run. The product does not run.

User Response: Contact BMC Customer Support for assistance.

BMC89119E I/O ERROR WHILE ATTEMPTING TO READ PRODUCT AUTHORIZATION TABLE (DDNAME=SYSLIB).

Explanation: The utility is unable to read the product authorization table. All functions are suppressed.

User Response: Retry the action. If the error persists, you might have to rebuild the table. Contact BMC Customer Support for assistance.
**BMC89120E**  
**COULD NOT FIND THE EXISTING CPU ID ENTRY THAT WAS TO BE REPLACED.**

*Explanation:* An attempt was made to apply a REPLACE password, but the CPU to be replaced in the product authorization table cannot be found. The password is not processed.

*User Response:* The old CPU ID or the password was specified incorrectly. Correct the specification, and retry the action. If the error persists, contact BMC Customer Support for assistance.

**BMC89121E**  
**PERMANENT PRODUCT AUTHORIZATION TABLE WAS NOT FOUND, BUT THE PASSWORD SPECIFIES A “DELETE” OR “REPLACE” ACTION.**

*Explanation:* An attempt was made to apply a DELETE password or a REPLACE password, but the system cannot locate a product authorization table for this product. The password is not processed.

*User Response:* Contact BMC Customer Support for assistance.

**BMC89122E**  
**ATTEMPTING TO ADD A NEW CPU ID TO A NEW TABLE, BUT SERIAL NUMBER AND MODEL NUMBER WERE NOT SPECIFIED.**

*Explanation:* The utility requires the CPU serial number and model number to process the password.

*User Response:* Add the CPU ID and the model number, and resubmit the job.

**BMC89123E**  
**PERMANENT PRODUCT AUTHORIZATION TABLE IS INVALID. PLEASE CONTACT BMC PRODUCT SUPPORT.**

*Explanation:* An error invalidated the product authorization table. You must rebuild the table. All functions are suppressed.

*User Response:* Contact BMC Customer Support for assistance.

**BMC89124E**  
**TEMPORARY PRODUCT AUTHORIZATION TABLE IS INVALID. PLEASE CONTACT BMC PRODUCT SUPPORT.**

*Explanation:* An error invalidated the product authorization table. You must rebuild the table. All functions are suppressed.

*User Response:* Contact BMC Customer Support for assistance.

**BMC89125E**  
**THIS PASSWORD IS NO LONGER VALID. IT CANNOT BE USED TO ACTIVATE OR CHANGE YOUR PRODUCT LICENSE. PLEASE CONTACT YOUR BMC SALES REPRESENTATIVE.**

*Explanation:* The password has expired. The password is not processed.

*User Response:* Contact your BMC sales representative or BMC Customer Support for assistance.
**BMC89126E**  
**I/O ERROR WHILE ATTEMPTING TO WRITE PRODUCT AUTHORIZATION TABLE (DDNAME=SYSLIB).**

*Explanation:* A write error occurred. All functions are suppressed.  
*User Response:* Verify that the data set name is correct and that the data set is partitioned. If you are unable to resolve the problem, contact BMC Customer Support for assistance.

**BMC89127I**  
**PROCESSOR WAS SUCCESSFULLY ADDED TO THE PRODUCT AUTHORIZATION TABLE. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON SERIAL NUMBER <nnnnn>, MODEL NUMBER <mmmm>. PRESS ENTER TO CONTINUE.**

*Explanation:* The ADD password has been processed. The product authorization table was modified to allow this product to run on the CPU that has the specified serial number and model numbers.  
*User Response:* No action is required.

**BMC89128I**  
**PROCESSOR (SERIAL NUMBER <nnnnn>, MODEL NUMBER <mmmm>) WAS SUCCESSFULLY DELETED FROM THE PRODUCT AUTHORIZATION TABLE. PRESS ENTER TO CONTINUE.**

*Explanation:* The DELETE password has been processed. You can no longer run this product on the CPU that has the specified the serial and model numbers.  
*User Response:* No action is required.

**BMC89129I**  
**PROCESSOR WAS SUCCESSFULLY REPLACED IN THE PRODUCT AUTHORIZATION TABLE. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON SERIAL NUMBER <nnnnn>, MODEL NUMBER <mmmm>. PRESS ENTER TO CONTINUE.**

*Explanation:* The REPLACE password has been processed. The CPU with the serial and model numbers indicated is now authorized to use this product.  
*User Response:* No action is required.

**BMC89130I**  
**PROCESSOR (SERIAL NUMBER <nnnnn>, MODEL NUMBER <mmmm>) WAS SUCCESSFULLY MODIFIED IN THE PRODUCT AUTHORIZATION TABLE. PRESS ENTER TO CONTINUE.**

*Explanation:* The MODIFY password has been processed. The product authorization table has been modified for the CPU with the specified serial and model numbers.  
*User Response:* No action is required.
The following error messages might be issued by certain mainframe products during initialization.

**NOTE**
Unlike the Product Authorization messages, the runtime messages do not contain the severity code indicator in the last character.

**BBAPWD01**

```<productID> BMC DATABASE IS BROKEN, CALL BMC SOFTWARE FOR TECHNICAL SUPPORT RC = <nnnn>
```

*Explanation: A problem occurred with the BMC password database for the product. The file is corrupted. You might need to rebuild it. The product will not run.*

*User Response: Contact BMC Customer Support.*

**BBAPWD02**

```<productID> UNABLE TO FIND PASSWORD FOR THIS PRODUCT, INSTALL PASSWORD FOR PRODUCT.
```

*Explanation: No password is installed for the specified product. You must install a password before the product will run. This message can have either of the following causes:*

- The library where the password was installed is not available to the product.
- The password member has been deleted.

The product will not run.

*User Response: Install the product password or call BMC Customer Support.*

**BBAPWD03**

```<productID> PASSWORD LOGIC ERROR, CALL BMC SOFTWARE FOR TECHNICAL SUPPORT RC = <nnnn>
```

*Explanation: An internal error occurred in password processing. The product will not run.*

*User Response: Contact BMC Customer Support.*

**BBAPWD04**

```<productID> I/O PROBLEM READING BMC DATABASE, CALL BMC SOFTWARE FOR TECHNICAL SUPPORT RC = <nnnn>
```

*Explanation: The specified product received an I/O error while reading the password database. The product will not run.*

*User Response: Contact BMC Customer Support.*
BBAPWD06  <productID> BMC PASSWORD NOT FOUND IN DDNAME <ddname> NOR WAS IT FOUND IN STEPLIB...LINKLIST

Explanation: The specified product attempted to locate a password to which the specified ddname points in the data set. The product was unable to open the ddname. The product was also unable to find a password in any library that is concatenated to TASKLIB, STEPLIB, JOBLIB, or in the LINKLIST. The product will not run.

User Response: Install the password in a library that is available to the product.

BBAPWD07  <productID> YOUR LICENSE TO EXECUTE THIS PRODUCT WILL EXPIRE IN <nn> DAYS.

Explanation: The specified product has a permanent license that will expire in the specified number of days. The product will continue to run.

User Response: Contact your BMC sales representative.

BBAPWD08  <productID> YOUR GRACE PERIOD TO EXECUTE THIS PRODUCT WILL EXPIRE IN <nn> DAYS.

Explanation: The specified product has begun its grace period. The grace period will expire in the specified number of days. The product will continue to run.

User Response: Contact BMC to reset your grace period.

BBAPWD09  <productID> THE PRODUCT TRIAL FOR THIS PRODUCT WILL EXPIRE IN <nn> DAYS.

Explanation: The trial period for the specified product will expire in the specified number of days. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD10 <productID> YOUR PRODUCT TRIAL PERIOD HAS EXPIRED, CALL BMC SOFTWARE FOR ASSISTANCE.

Explanation: The trial period for the specified product has expired. The product will not run.

User Response: Contact your sales representative.

BBAPWD11 <productID> IS RUNNING ON AN UNLICENSED PROCESSOR, ACCESS IS DENIED

Explanation: The specified product is running on a processor for which it is not licensed. The product will not run.

User Response: Contact your sales representative.
BBAPWD12  <productID> IS RUNNING ON A PROCESSOR WITH TOO MANY CPUS, ACCESS IS DENIED.

Explanation: The specified product is running on a processor that has more CPUs than your license allows. The product will not run.

User Response: Contact your sales representative.

BBAPWD13  <productID> YOUR LICENSE HAS EXPIRED, ACCESS IS DENIED

Explanation: The license for the specified product has expired. The product will not run.

User Response: Contact your sales representative.

BBAPWD14  <productID> IS RUNNING ON AN UNLICENSED PROCESSOR, ACCESS IS GRANTED

Explanation: The specified product is running on a processor for which the product is not licensed. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD15  <productID> IS RUNNING ON A PROCESSOR WITH TOO MANY CPUS, ACCESS IS GRANTED.

Explanation: The specified product is running on a processor that has more CPUs than your license allows. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD16  <productID> YOUR LICENSE HAS EXPIRED, ACCESS IS GRANTED

Explanation: The license for the specified product has expired. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD17  <productID> IS RUNNING ON AN UNLICENSED PROCESSOR, GRACE PERIOD ENDED, ACCESS IS DENIED

Explanation: The specified product is running on a processor for which the product is not licensed. The product will not run.

User Response: Contact your sales representative.

BBAPWD18  <productID> IS RUNNING ON A PROCESSOR WITH TOO MANY CPUS, GRACE PERIOD IS ENDED, ACCESS IS DENIED.

Explanation: The specified product is running on a processor that has more CPUs than your license allows. The product will not run.

User Response: Contact your sales representative.
BBAPWD19 <productID> YOUR LICENSE HAS EXPIRED, GRACE PERIOD IS ENDED, ACCESS IS DENIED

Explanation: The license for the specified product has expired. The product will not run.

User Response: Contact your sales representative.

BBAPWD20 <productID> IS RUNNING ON AN UNLICENSED PROCESSOR, UNABLE TO GRANT GRACE PERIOD, ACCESS IS DENIED

Explanation: The specified product is running on a processor for which the product is not licensed. An attempt was made to grant a grace period, but security prevented that update from taking place. The product will not run.

User Response: Contact your sales representative, or authorize the product to update the load library where the password table resides.

BBAPWD21 <productID> IS RUNNING ON A PROCESSOR WITH TOO MANY CPUS, UNABLE TO GRANT GRACE PERIOD, ACCESS IS DENIED.

Explanation: The specified product is running on a processor that has more CPUs than your license allows. An attempt was made to grant a grace period, but security prevented that update from taking place. The product will not run.

User Response: Contact your sales representative, or authorize the product to update the load library where the password table resides.

BBAPWD22 <productID> YOUR LICENSE HAS EXPIRED, UNABLE TO GRANT GRACE PERIOD, ACCESS IS DENIED

Explanation: The license for the specified product has expired. An attempt was made to grant a grace period, but security prevented that update from taking place. The product will not run.

User Response: Contact your sales representative, or authorize the product to update the load library where the password table resides.

BBAPWD23 <productID> IS RUNNING ON AN UNLICENSED PROCESSOR, GRACE PERIOD WILL EXPIRE IN <nn> DAYS

Explanation: The specified product is running on a processor for which it is not licensed. The grace period that was granted to you will expire in the specified number of days. The product will continue to run.

User Response: Contact your sales representative.
BBAPWD24  <productID> IS RUNNING ON A PROCESSOR WITH TOO MANY CPUS, GRACE PERIOD WILL EXPIRE IN <nn> DAYS,

Explanation: The specified product is running on a processor that has more CPUs than your license allows. The grace period that was granted to you will expire in the specified number of days. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD25  <productID> YOUR LICENSE HAS EXPIRED, GRACE PERIOD WILL EXPIRE IN <nn> DAYS

Explanation: The license for the specified product has expired. The grace period that was granted to you will expire in the specified number of days. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD26  <productID> IS RUNNING ON AN UNLICENSED PROCESSOR, TRIAL PERIOD WILL EXPIRE IN <nn> DAYS

Explanation: The specified product is running on a processor for which it is not licensed. The temporary authorization that was granted to you will expire in the specified number of days. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD27  <productID> IS RUNNING ON A PROCESSOR WITH TOO MANY CPUS, TRIAL PERIOD WILL EXPIRE IN <nn> DAYS,

Explanation: The specified product is running on a processor that has more CPUs than your license allows. The temporary authorization that was granted to you will expire in the specified number of days. The product will continue to run.

User Response: Contact your sales representative.

BBAPWD28  <productID> YOUR LICENSE HAS EXPIRED, TRIAL PERIOD WILL EXPIRE IN <nn> DAYS

Explanation: The license for the specified product has expired. The temporary authorization that was granted to you will expire in the specified number of days. The product will continue to run.

User Response: Contact your sales representative.
Typical installation jobs

The Installation System creates different jobs, depending on the installation media, installation method, and your environment. This section lists the installation jobs that the Installation System typically creates for the most common combinations of media and installation methods:

<table>
<thead>
<tr>
<th>Distribution method</th>
<th>Installation method</th>
<th>Environment</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESD</td>
<td>Custom</td>
<td>JES2</td>
<td>Table 35 on page 193</td>
</tr>
<tr>
<td></td>
<td>Express</td>
<td>JES2</td>
<td>Table 36 on page 194</td>
</tr>
<tr>
<td></td>
<td>Custom</td>
<td>JES3</td>
<td>Table 37 on page 194</td>
</tr>
<tr>
<td></td>
<td>Express</td>
<td>JES3</td>
<td>Table 38 on page 195</td>
</tr>
<tr>
<td>tape</td>
<td>Custom</td>
<td>JES2</td>
<td>Table 39 on page 195</td>
</tr>
<tr>
<td></td>
<td>Express</td>
<td>JES2</td>
<td>Table 40 on page 196</td>
</tr>
<tr>
<td></td>
<td>Custom</td>
<td>JES3</td>
<td>Table 41 on page 196</td>
</tr>
<tr>
<td></td>
<td>Express</td>
<td>JES3</td>
<td>Table 42 on page 197</td>
</tr>
</tbody>
</table>

**NOTE**

You might get slightly different jobs, depending on which combination of products you are installing.

**Table 35  Jobs for an ESD–Custom installation on JES2 (part 1 of 2)**

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B04DWNL</td>
<td>download product files</td>
</tr>
<tr>
<td>$B05CGBL</td>
<td>define global zone</td>
</tr>
<tr>
<td>$B10CCSI</td>
<td>define CSI zones</td>
</tr>
<tr>
<td>$B15CSMP</td>
<td>define SMP/E auxiliary data sets</td>
</tr>
<tr>
<td>$B18ALOC</td>
<td>allocate data sets</td>
</tr>
</tbody>
</table>
### Table 35  Jobs for an ESD–Custom installation on JES2  (part 2 of 2)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B20RELT</td>
<td>relate new zones</td>
</tr>
<tr>
<td>$B30RECP</td>
<td>receive products</td>
</tr>
<tr>
<td>$B45RECS</td>
<td>receive maintenance</td>
</tr>
<tr>
<td>$B50HOLD</td>
<td>receive hold statements</td>
</tr>
<tr>
<td>$B55LIST</td>
<td>list hold data</td>
</tr>
<tr>
<td>$B60DOCL</td>
<td>print PTF documentation from maintenance files</td>
</tr>
<tr>
<td>$B65MNTD</td>
<td>clean up maintenance input files</td>
</tr>
<tr>
<td>$B70DDEF</td>
<td>create DDDEFs</td>
</tr>
<tr>
<td>$B75APCK</td>
<td>apply check job</td>
</tr>
<tr>
<td>$B76APLY</td>
<td>apply job</td>
</tr>
<tr>
<td>$B80ACCK</td>
<td>accept check job</td>
</tr>
<tr>
<td>$B81ACPT</td>
<td>accept job</td>
</tr>
<tr>
<td>BACKOUT jobs</td>
<td>remove products for restart</td>
</tr>
<tr>
<td></td>
<td>The BACKOUT jobs include the #D98 and #D99 jobs.</td>
</tr>
</tbody>
</table>

### Table 36  Jobs for an ESD–Express installation on JES2

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B04DWNL</td>
<td>download product files</td>
</tr>
<tr>
<td>$B05UNLD</td>
<td>unload product files</td>
</tr>
<tr>
<td>$B90SMPE</td>
<td>unload SMP/E auxiliary files</td>
</tr>
<tr>
<td>$B99CLNU</td>
<td>clean up SMP/E auxiliary input</td>
</tr>
<tr>
<td>$B99DUCL</td>
<td>clean up UCLIN input files</td>
</tr>
<tr>
<td>BACKOUT jobs</td>
<td>remove products for restart</td>
</tr>
<tr>
<td></td>
<td>The BACKOUT jobs include the #D98 and #D99 jobs.</td>
</tr>
<tr>
<td>LIBUPR</td>
<td>convert certain libraries from lowercase to uppercase</td>
</tr>
</tbody>
</table>

### Table 37  Jobs for an ESD–Custom installation on JES3  (part 1 of 2)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B03DWNL</td>
<td>JES3-download of product files</td>
</tr>
<tr>
<td>$B04DCMP</td>
<td>JES3-decompress product files</td>
</tr>
<tr>
<td>$B05CGBL</td>
<td>define global zone</td>
</tr>
<tr>
<td>$B10CCSI</td>
<td>define CSI zones</td>
</tr>
<tr>
<td>$B15CSMP</td>
<td>define SMP/E auxiliary data sets</td>
</tr>
<tr>
<td>$B18ALOC</td>
<td>allocate data sets</td>
</tr>
<tr>
<td>$B20RELT</td>
<td>relate new zones</td>
</tr>
</tbody>
</table>
### Table 37  Jobs for an ESD–Custom installation on JES3 (part 2 of 2)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B30RECP</td>
<td>receive products</td>
</tr>
<tr>
<td>$B45RECS</td>
<td>receive maintenance</td>
</tr>
<tr>
<td>$B50HOLD</td>
<td>receive hold statements</td>
</tr>
<tr>
<td>$B55LIST</td>
<td>list hold data</td>
</tr>
<tr>
<td>$B60DOCL</td>
<td>print PTF documentation from maintenance files</td>
</tr>
<tr>
<td>$B65MNTD</td>
<td>clean up maintenance input files</td>
</tr>
<tr>
<td>$B70DDEF</td>
<td>create DDDEFs</td>
</tr>
<tr>
<td>$B75APCK</td>
<td>apply check job</td>
</tr>
<tr>
<td>$B76APLY</td>
<td>apply job</td>
</tr>
<tr>
<td>$B80ACCK</td>
<td>accept check job</td>
</tr>
<tr>
<td>$B81ACPT</td>
<td>accept job</td>
</tr>
<tr>
<td><strong>BACKOUT jobs</strong></td>
<td>remove products for restart</td>
</tr>
</tbody>
</table>

The BACKOUT jobs include the #D98 and #D99 jobs.

### Table 38  Jobs for an ESD–Express installation on JES3

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B03DWNL</td>
<td>JES3-download of product files</td>
</tr>
<tr>
<td>$B04DCMP</td>
<td>JES3-decompress product files</td>
</tr>
<tr>
<td>$B05UNLD</td>
<td>unload product files</td>
</tr>
<tr>
<td>$B90SMPE</td>
<td>unload SMP/E auxiliary files</td>
</tr>
<tr>
<td>$B91SMPE</td>
<td>allocate and load SMP/E environment</td>
</tr>
<tr>
<td>DELETE</td>
<td>delete Installation System data set</td>
</tr>
<tr>
<td>$B99CLNU</td>
<td>clean up SMP/E auxiliary input</td>
</tr>
<tr>
<td>$B99DUCL</td>
<td>clean up UCLIN input files</td>
</tr>
<tr>
<td><strong>BACKOUT jobs</strong></td>
<td>remove products for restart</td>
</tr>
</tbody>
</table>

The BACKOUT jobs include the #D98 and #D99 jobs.

### Table 39  Jobs for a tape distribution–Custom installation on JES2 (part 1 of 2)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B04DCMP</td>
<td>decompress product files</td>
</tr>
<tr>
<td>$B05CGBL</td>
<td>define global zone</td>
</tr>
<tr>
<td>$B10CCSI</td>
<td>define CSI zones</td>
</tr>
<tr>
<td>$B15CSMP</td>
<td>define SMP/E auxiliary data sets</td>
</tr>
<tr>
<td>$B18ALOC</td>
<td>allocate data sets</td>
</tr>
</tbody>
</table>
### Table 39  Jobs for a tape distribution–Custom installation on JES2 (part 2 of 2)

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B20RELT</td>
<td>relate new zones</td>
</tr>
<tr>
<td>$B30RECP</td>
<td>receive products</td>
</tr>
<tr>
<td>$B45RECS</td>
<td>receive maintenance</td>
</tr>
<tr>
<td>$B50HOLD</td>
<td>receive hold statements</td>
</tr>
<tr>
<td>$B55LIST</td>
<td>list hold data</td>
</tr>
<tr>
<td>$B60DOCL</td>
<td>print PTF documentation from the maintenance files</td>
</tr>
<tr>
<td>$B70DDEF</td>
<td>create DDDEFs</td>
</tr>
<tr>
<td>$B75APCK</td>
<td>apply check job</td>
</tr>
<tr>
<td>$B76APLY</td>
<td>apply job</td>
</tr>
<tr>
<td>$B80ACCK</td>
<td>accept check job</td>
</tr>
<tr>
<td>$B81ACPT</td>
<td>accept job</td>
</tr>
<tr>
<td><strong>BACKOUT</strong> jobs</td>
<td>remove products for restart</td>
</tr>
<tr>
<td></td>
<td>The BACKOUT jobs include the #D98 and #D99 jobs.</td>
</tr>
</tbody>
</table>

### Table 40  Jobs for a tape distribution–Express installation on JES2

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B04DCMP</td>
<td>decompress the images from tape sets and create the data sets for $B05UNLD</td>
</tr>
<tr>
<td>$B04DWNL</td>
<td>download product files and create the data sets for $B05UNLD</td>
</tr>
<tr>
<td>$B05UNLD</td>
<td>unload product files</td>
</tr>
<tr>
<td>$B90SME</td>
<td>unload SMP/E auxiliary files</td>
</tr>
<tr>
<td>$B99CLNU</td>
<td>clean up SMP/E auxiliary input</td>
</tr>
<tr>
<td>$B99DUCL</td>
<td>clean up UCLIN input files</td>
</tr>
<tr>
<td><strong>BACKOUT</strong> jobs</td>
<td>remove products for restart</td>
</tr>
<tr>
<td></td>
<td>The BACKOUT jobs include the #D98 and #D99 jobs.</td>
</tr>
<tr>
<td>LIBUPR</td>
<td>convert certain libraries from lowercase to uppercase</td>
</tr>
</tbody>
</table>

### Table 41  Jobs for a tape distribution–Custom Installation on JES3 (part 1 of 2)

<table>
<thead>
<tr>
<th>Job / Member Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B04DCMP</td>
<td>decompress product files</td>
</tr>
<tr>
<td>$B05CGBL</td>
<td>define global zone</td>
</tr>
<tr>
<td>$B10CCSI</td>
<td>define CSI zones</td>
</tr>
<tr>
<td>$B15CSMP</td>
<td>define SMP/E auxiliary data sets</td>
</tr>
<tr>
<td>$B18ALOC</td>
<td>allocate data sets</td>
</tr>
<tr>
<td>$B20RELT</td>
<td>relate new zones</td>
</tr>
</tbody>
</table>
### Table 41  Jobs for a tape distribution–Custom Installation on JES3 (part 2 of 2)

<table>
<thead>
<tr>
<th>Job / Member Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B30RECP</td>
<td>receive products</td>
</tr>
<tr>
<td>$B45RECS</td>
<td>receive maintenance</td>
</tr>
<tr>
<td>$B50HOLD</td>
<td>receive hold statements</td>
</tr>
<tr>
<td>$B55LIST</td>
<td>list hold data</td>
</tr>
<tr>
<td>$B60DOCL</td>
<td>print PTF documentation from maintenance files</td>
</tr>
<tr>
<td>$B70DDEF</td>
<td>create DDDEFs</td>
</tr>
<tr>
<td>$B75APCK</td>
<td>apply check job</td>
</tr>
<tr>
<td>$B76APLY</td>
<td>apply job</td>
</tr>
<tr>
<td>$B80ACCK</td>
<td>accept check job</td>
</tr>
<tr>
<td>$B81ACPT</td>
<td>accept job</td>
</tr>
<tr>
<td><strong>BACKOUT</strong> jobs</td>
<td>remove products for restart</td>
</tr>
<tr>
<td><strong>The BACKOUT jobs include the #D98 and #D99 jobs.</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Table 42  Jobs for a tape distribution–Express installation on JES3

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B00DOC</td>
<td>unload documentation files</td>
</tr>
<tr>
<td>$B04DCMP</td>
<td>decompress product files</td>
</tr>
<tr>
<td>$B05UNLD</td>
<td>unload product files</td>
</tr>
<tr>
<td>$B90SMPE</td>
<td>unload SMP/E auxiliary files</td>
</tr>
<tr>
<td>$B91SMPE</td>
<td>allocate and load SMP/E environment</td>
</tr>
<tr>
<td><strong>DELETE</strong></td>
<td>delete Installation System data set</td>
</tr>
<tr>
<td>$B99CLNU</td>
<td>clean up SMP/E auxiliary input</td>
</tr>
<tr>
<td>$B99DUCL</td>
<td>clean up UCLIN input files</td>
</tr>
<tr>
<td><strong>BACKOUT</strong> jobs</td>
<td>remove products for restart</td>
</tr>
<tr>
<td><strong>The BACKOUT jobs include the #D98 and #D99 jobs.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LIBUPR</strong></td>
<td>convert certain libraries from lowercase to uppercase</td>
</tr>
</tbody>
</table>
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#D98DROP drop job 95
#D98DTGT drop job 95
#D99DDLB drop job 95
#D99DVSM drop job 95
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$B05UNLD installation job 81, 194, 197
$B10CCSI installation job 87, 88, 193, 196
$B15CSMP installation job 88, 193, 196
$B18ALOC installation job 91, 193, 196
$B20RELT installation job 88, 194, 196
$B25RELT installation job 87
$B27FSET installation job 91
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$B35LIST installation job 89
$B40REJT installation job 90
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$B50HOLD installation job 90, 194, 197
$B55LIST installation job 90, 194, 197
$B60DCL installation job 91, 194, 197
$B65MNTD installation job 91, 194, 195
$B70DEF installation job 91, 194, 197
$B75APCK installation job 91, 194, 197
$B76APLY installation job 91, 194, 197
$B80ACCK installation job 91, 194, 197
$B81ACPT installation job 91, 194, 197
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$C26XIMP customization job 103
$C30DOPT customization job 103
$C31CPFS customization job 103
$C31HIST customization job 103
$C32SOPT customization job 103
$C34INIT customization job 103
$C35BNDI customization job 103
$C38ALTR customization job 103
$C38INDEX customization job 103
$C39ALTR customization job 103
$C40INST customization job 104
$C45CNLT customization job 104
$C45COMD customization job 104
$C45COPY customization job 104
$C46EDIT customization job 104
$C56LDRU customization job 104
$C60GRNT customization job 104
$C65MIG customization job 104
$C66MIG customization job 104
$C66TBLD customization job 104
$C67COPY customization job 104
$C68APLP customization job 104
$C68DOM customization job 104
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$M40HLD maintenance job 144
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$M55LIST maintenance job 145
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$M75APCK maintenance job 145
$M76APLY maintenance job 145
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  preparing an existing environment 86
  setting up SMP/E maintenance 85
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  XBM 97
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