INCONTROL for z/OS
9.0.00
Installation Guide: Maintaining

July 2015

Contacting BMC Software

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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. 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

License key and password information

If you have questions about your license key or password, contact BMC as follows:

- (USA or Canada) Contact the Order Services Password Team at 800 841 2031, or send an e-mail message to ContractsPasswordAdministration@bmc.com.

- (Europe, the Middle East, and Africa) Fax your questions to EMEA Contracts Administration at +31 20 354 8702, or send an e-mail message to password@bmc.com.

- (Asia-Pacific) Contact your BMC sales representative or your local BMC office.

Third party Software

For the provisions described in the BMC License Agreement and Order related to third party products or technologies included in the BMC Product, see https://docs.bmc.com/docs/display/workloadautomation/Control-M+Workload+Automation+Documentation and click **Third-party software (TPS).**

Contents

About this guide

This installation guide describes the procedures and steps required for maintaining INCONTROL products. The following maintenance procedures are described:

- periodic maintenance

- ad hoc maintenance

- change deployment

Conventions used in this guide

Notational conventions that may be used in this guide are explained below.

Standard Keyboard Keys

Keys that appear on the standard keyboard are identified in boldface, for example, **Enter**, **Shift**, **Ctrl+S** (a key combination), or **Ctrl S** (a key sequence).

The commands, instructions, procedures, and syntax illustrated in this guide presume that the keyboards at your site are mapped in accordance with the EBCDIC character set. Certain special characters are referred to in this documentation, and you must ensure that your keyboard enables you to generate accurate EBCDIC hex codes. This is particularly true on keyboards that have been adapted to show local or national symbols. You should verify that

$ is mapped to x'5B'
# is mapped to x'7B'
@ is mapped to x'7C'

If you have any questions about whether your keyboard is properly mapped, contact your system administrator.

Preconfigured PFKeys

Many commands are preconfigured to specific keys or key combinations. This is particularly true with regard to numbered PF keys, or pairs of numbered PFKeys. For example, the END command is preconfigured to, and indicated as, PF03/PF15. To execute the END command, press either the **PF03** key or the **PF15** key.

Instructions to enter commands may include

- only the name of the command, such as, enter the END command

- only the PF keys, such as, press PF03/PF15

- or both, such as, press PF03/PF15, or enter the END command

Command lines and option fields

Most screens contain a command line, which is primarily used to identify a single field where commands, or options, or both, are to be entered. These fields are usually designated COMMAND, but they are occasionally identified as COMMAND/OPT or COMMAND/OPTION.

Option field headings appear in many screens. These headings sometimes appear in the screen examples as OPTION, or OPT, or O.

Names of Commands, Fields, Files, Functions, Jobs, Libraries, Members, Missions, Options, Parameters, Reports, Subparameters, and Users

The names of commands, fields, functions, jobs, libraries, members, missions, options, parameters, reports, subparameters, users, and most files, are shown in standard UPPERCASE font.

User Entries

In situations where you are instructed to enter characters using the keyboard, the specific characters to be entered are shown in this UPPERCASE BOLD text, for example, type EXITNAME.

User entries

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Syntax statements

In syntax, the following additional conventions apply:

- A vertical bar (|) separating items indicates that you must choose one item. In the following example, you would choose *a*, *b,* or *c*:

  a | b | c

- An ellipsis (. . .) indicates that you can repeat the preceding item or items as many times as necessary.

- Square brackets ([ ]) around an item indicate that the item is optional. If square brackets ([ ]) are around a group of items, this indicates that the item is optional, and you may choose to implement any single item in the group. Square brackets can open ([ ) and close ( ]) on the same line of text, or may begin on one line of text and end, with the choices being stacked, one or more lines later.

- Braces ({ }) around a group of items indicates that the item is mandatory, and you must choose to implement a single item in the group. Braces can open ({) and close (}) on the same line of text, or may begin on one line of text and end, with the choices being stacked, one or more lines later.

Screen characters

All syntax, operating system terms, and literal examples are presented in this typeface. This includes JCL calls, code examples, control statements, and system messages. Examples of this are:

- calls, such as

  ```
  CALL 'CBLTDLI'
  ```

- code examples, such as

  ```
  FOR TABLE owner.name USE option, . . . ;
  ```

- control statements, such as

  ```
  //PRDSYSIN DD * USERLOAD PRD(2) PRINT
  ```

- system messages, both stand-alone, such as `You are not logged on to database database_name`, and those embedded in text, such as the message `You are not logged on to database database_name`, are displayed on the screen.

Variables

Variables are identified with *italic* text. Examples of this are:

- In syntax or message text, such as
  `Specify database` *database_name*

- In regular text, such as
  replace database *database_name1* with database *database_name2* for the current session

- In a version number, such as
  EXTENDED BUFFER MANAGER for IMS 4.1.*xx*

Special elements

This guide includes special elements called *notes* and *warnings*:

Notes provide additional information about the current subject.

Warnings alert you to situations that can cause problems, such as loss of data, if you do not follow instructions carefully.

Part 1 Periodic maintenance

Overview of maintenance

This manual assumes that the reader has a general knowledge of SMP/E. However, a working knowledge of SMP/E is not necessary since the maintenance processes are performed through the ICE environment.

The following maintenance processes are available:

- periodic maintenance
- ad hoc maintenance
- change deployment

The periodic maintenance is a planned process by which the customer upgrades his system with one or more maintenance packages provided by BMC. A new maintenance package is released periodically and contains PTFs that were developed since the last package. The package is thoroughly verified at the system level. This type of proactive preventive maintenance is recommended since the customer upgrades his system with current PTFs before his system experiences problems.

The ad hoc maintenance is a process by which the customer selectively applies PTFs to his system. The PTFs are provided by BMC through eFix, which the customer can access at http://www.bmc.com/support/efix.cgi.

The change deployment is a process by which the customer can transfer changes (for example, fixes and maintenances) in a SMP/E managed base IOA environment to a cloned non-SMP/E managed IOA environment.

All jobs that are run as part of the maintenance are submitted and tracked by ICE. When the job completes, the results are analyzed and a short job log is displayed. This log contains information regarding step and job completion, as well as errors and other important information.

If the job does not complete successfully, the log should be reviewed for further information. Occasionally, if the log does not contain sufficient information, it may be necessary to review the sysout of the job on the JES spool. The job name and jobid are printed on the first line of the job log.

When a step has completed successfully, or when the step is identified as not relevant to this upgrade, the minor step in ICE is marked COMPLETE automatically.

Each step must be executed in sequence, and it cannot be executed before the previous step is marked COMPLETE.

To assist with the maintenance process, a list of common messages and a troubleshooting topics are provided in

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Preparing for maintenance

Preparing for the maintenance installation

The best practice is to decide carefully from the beginning what is the appropriate maintenance level for your system.

Before the maintenance process begins, customers must verify that there is enough space in the basepref.MAINTLIB and ilprefa.MAINTLIB libraries in order to accommodate 50 additional blocks and 4 additional directory blocks.

In preparation for the maintenance, the files used by the maintenance process must loaded to the mainframe as follows:

- Maintenance package files (on page 10)
- EHD files (on page 10)
- PTF files (on page 11)

For additional details and instructions see the appropriate maintenance release notes.

Maintenance package files

Maintenance package files - Each maintenance level consists of a single binary file in IBM tersed format. All package files required for the upgrade must be loaded to the mainframe with the following dataset attributes: RECFM=FB, LRECL=1024.

For each maintenance level to be installed, transfer the maintenance package file to the mainframe as a binary file.

➢ To transfer the maintenance package file to the mainframe as a binary file:

- Download the package file from the EPD site at https://webapps.bmc.com/signon/content/logon.jsp.
- Copy the file from the product CD.

The files must be renamed to the names indicated in step 1.2 (Verify Maintenance Files) of the upgrade process.

EHD files

Enhanced Hold Data (EHD) is an SMP/E mechanism for identifying PTFs that are flagged in error, and their resolving PTFs (if available). This file is in IBM tersed format and must be loaded to the mainframe with the following dataset attributes: RECFM=FB, LRECL=1024. The file must be renamed to the name indicated in step 1.2 (Verify Maintenance Files) of the upgrade process.

PTF files

Uncompressed PTF files that are not included in the maintenance levels being installed, but are to be installed together with the maintenance. The PTF files must be downloaded from eFix and uploaded to the mainframe using binary transfer and without CR/LF translation. These files require the following dataset attributes: RECFM=FB, LRECL=80. The files must be renamed to the names indicated with the A option in step 1.2 (Verify Maintenance Files).

Running maintenance from ICE

➤ To run maintenance from ICE:

1. Invoke the INCONTROL Installation and Customization Engine (ICE). For details refer to the Installation and Customization Engine section section in the *INCONTROL for z/OS Installation Guide: Installing*.

2. From the list on the INCONTROL Installation Options screen, select Maintain your Environment.

3. On the IOA Maintenance and ICE refresh screen, select Maintenance.

Using common features in maintenance

In this section, common procedures are described.

See B   Common messages reference (on page 44) for common messages and their explanations.

Common to both Major and Minor Step panels

➤ To select a step or an option:

Enter S in the Sel column in the row next to the step or option.

➤ To mark a step as completed:

Enter C in the Sel column in the row next to the step.

Under normal circumstances, the step will be marked COMPLETE automatically.

Common to most Minor Step panels

➤ To submit a job:

1. Enter S in the S column in the row next to the job description.

   The Job Status message box opens, indicating that the job is running. Pressing Enter refreshes the status and, when the job has completed, opens the job log.

   If the job ran already, a confirmation window is displayed to allow you to confirm whether you want to rerun the job (default is N=no).

2. Press PF3 (END) to close the log.

   An OK status next to the job description indicates that the job completed successfully.

A FAIL status next to the job description indicates that the job failed. Examine the log for the cause of the failure. To understand the information contained in the log, see F   Maintenance job logs (on page 53).

➢ To browse a job log:

Enter B in the S column in the row next to the job description of a job that ran already.

Upgrade process

In the table of contents below, the primary headings correspond to major steps of the maintenance procedure in the ICE environment. The secondary headings (that start with the word "Step") correspond to minor steps in the maintenance procedure.

1. Maintenance - Preparations

Step 1.1 – Start new Maintenance Cycle

This step starts a new maintenance cycle for upgrading the system to the specified maintenance level.

The current maintenance level (v.r.mm) of the system is displayed. You can specify any available valid level of maintenance. This process supports upgrading multiple maintenance levels in one cycle.

1. Select Minor Step 1, Start new maintenance cycle.

If the previous maintenance cycle has not yet been completed (it was APPLYed (Step 2.2), but not ACCEPTed (Step 3.1)) a message is displayed. You must first complete the previous cycle before you can start a new maintenance cycle.

2. In the MM (Maintenance) Level field, type the target maintenance level.

3. Press PF3 (END) to save these changes and return to the Minor Steps Selection panel. To exit without saving, enter CANCEL in the command line.

    Saving a new level of maintenance initiates the new maintenance cycle. All log and status information from the previous cycle is deleted.

Step 1.2 – Verify Maintenance Files

Each maintenance level is represented by a single binary file, which must be available on DASD. This step assumes that all the required maintenance files have already been made available on DASD, as described in Preparing for the maintenance installation (on page 10).

1. Select Minor Step 2, Verify Maintenance Files.

    In the Verify Maintenance Files panel, a list of maintenance package files is displayed, one file for each maintenance, up to the specified target level. There is also an additional line for the EHD file, as explained below.

    Package files with the names indicated on the list are automatically identified and assigned a Compressed status if it is compressed or a Ready status if it is uncompressed. If a file is not found with exactly the same name as displayed, even if it is actually available on DASD, a Missing status is displayed for the file. The package file must be renamed to the displayed name (outside the ICE environment).

    An Invalid status is displayed for a file that has incorrect DCB attributes, or for an uncompressed file that is incomplete. Type ? next to the file name to view possible reasons why the file has an Invalid status and how to proceed.

    To complete this step, all files must be brought to a Ready status.

2. If necessary, rename the package files.

3. Refresh the Verify Maintenance Files panel by pressing Enter.

4. Submit a job to uncompress Compressed maintenance package files, by using the U line command next to the file names. (Entering the UU command, next to any file with a Compressed status, uncompresses all files with the Compressed status.)

5. Ensure all maintenance package files are in a Ready status.

6. BMC Software strongly recommends using EHD (Enhanced Hold Data file), which is an SMP/E mechanism that assists in identifying PTFs that are in error, and identifying corrective PTFs, if available. To retrieve the current EHD file, do the following:

    a. Go to:

        ```
        ftp://ftp.bmc.com/bmc/holddata
        ```

    b. Download the yrs3.bin file.

    The yrs3.bin file is refreshed frequently. To ensure that you are using the latest version, download the file immediately before you upload it to the mainframe.

    c. Upload the file to the mainframe using binary transfer and the following dataset attributes:

        o Dataset Name: mlprefa.EHDmmTRS (where mm = the target level)

        o RECFM: FB

> ○ LRECL: 1024

    d. Make the EHD dataset Ready, as described above.

    (To proceed without EHD support (not recommended), see Proceeding without EHD support (on page 43).

7. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.3 – Backup your INCONTROL system

You must back-up your INCONTROL system before continuing with the maintenance upgrade.

The backup generated by this step only contains the INCONTROL system files. User data libraries are not included.

1. Select Minor Step 3, Backup your INCONTROL system.

2. Submit the appropriate job using one of the following options:

- Run a DFDSS job that creates a logical backup of the INCONTROL system files to a dataset on DASD. The name of the backup dataset is written to the job log in ICE. After the job has completed, the DFDSS input deck used for the backup, can be found in ilprefa.INSTWORK(IOACDBKP).

- Run a job that creates a list of all the datasets that need to be backed up. After running this job, the list of datasets requiring backups is located in: ilprefa.INSTWORK(IOACDBKL). The actual backup of these datasets must be performed using local site procedures.

3. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.4 – ACCEPT APPLYed PTFs

This step will ACCEPT any PTFs that have been APPLYed in your environment above the current maintenance level, and have not yet been ACCEPTed.

1. Select Minor Step 4, ACCEPT APPLYed PTFs.

2. Submit the job.

3. When the job has completed, examine the status. If the job did not complete OK, use B to browse the log for more details.

4. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.5 – Verify INCONTROL dataset free space

This step checks your environment to ensure that it contains sufficient free space to install the maintenance upgrade.

Before submitting the job, compress all partitioned data sets in your environment.

After running the job, insufficient free space is indicated by a FAIL status. Using your local site procedure (outside the ICE environment), add space according to the information displayed.

1. Select Minor Step 5, Verify INCONTROL dataset free space.

2. Submit the job.

3. Examine the status.

   - An OK status indicates that there is sufficient free space for all the datasets. Proceed to the next step.

   - A FAIL status indicates some datasets require more free space or some other problem. If insufficient space is the reason for the failure, the job log contains the following message: There are n datasets that require attention. Enter L in the S column to display a table listing the datasets with the required free space and directory blocks that must be added. To display more details about a particular dataset, enter S next to the name of the dataset.

4. Add additional space as indicated in the table.

If the basepref.INSTALL or LOAD libraries requires enlarging, you must exit ICE completely to enlarge them. After the libraries are enlarged, return to ICE and continue with the next step.

5. Repeat the procedure from step 2, submitting the job for analyzing the free space, until the job ends with an OK status.

6. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.6 – RECEIVE and Analyze Target Environment

This step will RECEIVE the PTFs, then run an APPLY CHECK to analyze the target environment and prepare subsequent steps of the upgrade. If you chose to bypass EHD processing in Step 1.2, the information about PTFs in error (PE PTF) will not be current and, as a result, known error conditions might not be identified in the log.

- If any ad hoc PTFs are installed in the target environment after step 1.6 has been run, rerun step 1.6.

- Do not run step 1.6 after step 2.2 (APPLY the Maintenance) has been run.

1. Select Minor Step 6, RECEIVE and Analyze Target Environment.

2. Submit the job.

3. A log is displayed. For general information about understanding the log, see F   Maintenance job logs (on page 53)

4. Examine the log for error and warning messages. Resolve any errors and rerun the job.

5. Examine the PE PTF report, if one is included in the log.

   Do the following, as necessary:

   - For PE PTFs without resolving PTF(s) perform the procedure described in PTFs in error without resolving PTF(s) (on page 51)

   - For PE PTFs with resolving PTF(s) perform the procedure described in PTFs in error with resolving PTF(s) (on page 51)

If the job completes with status PE-PTF, and you intend to install the resolving PTFs together with this upgrade (recommended), use the A line command to see the name and attributes of the dataset where the additional PTFs must be placed.

When the dataset is present, it is moved to the bottom of the panel with a Ready status (or with an *Empty* status if the dataset is empty - in which case the PTFs must copied into the dataset), and the name of the next dataset to be used is displayed at the top.

If you chose to continue without the resolving PTFs, manually mark this step COMPLETE.

6. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.7 – View APAR Descriptions

Use this step to review the APARs that will be installed during the upgrade.

1. Select Minor Step 7, View APAR Descriptions.

A list APARs, each with a brief description, is displayed.

2. Enter S in the OP column to see the full description of an APAR. The details for each APAR are displayed in individual panels. Pressing PF3 (END) closes the panel of an APAR, allowing you to view the panel of the next selected APAR, or to return to the list.

The S option is not active after the PTFs for the upgrade have been ACCEPTed.

3. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.8 – Pre-Upgrade Exception Handling

During this step you must review the exception situations relevant to this upgrade.

These are divided into two groups:

- items that must be handled before step 2.2 – APPLY the Maintenance

- items that require reviewing and planning, but must be handled after step 2.2 – APPLY the Maintenance

1. Select Minor Step 8, Pre-Upgrade Exception Handling.

The following groups of items are displayed:

- Pre-Installation Holds

    Review the list of Pre-APPLY exceptions relevant to your environment. These actions must be taken before running the SMP/E APPLY step in the Implementation major step.

- HOLD ERRORs

    This item lists the unresolved PTF in ERROR conditions that were identified and brought to your attention during the 'RECEIVE and Analyze Target Environment' step of this upgrade.

    The PTF(s) listed are HELD for the ERROR Reason indicated, and the HOLD condition is NOT resolved in this upgrade. Refer to the description in E Handling PE PTFs (on page 51) or to the log of the 'RECEIVE and Analyze Target Environment' step for instructions on how to proceed.

    Note: If you mark this step Complete, and proceed with the APPLY step these conditions will remain unresolved.

- Post Installation Holds

  Review the list of Post APPLY exceptions relevant to your environment. You are being alerted to these now so that you will be aware of them and can plan for them. These activities must be done after the SMP/E APPLY during the Post APPLY Exception Handling step in the Post Implementation major step.

- User Exits

  The 'Analyze Target Environment' step identified that new version(s) of exit samples, which are already implemented in your system, will be introduced by this upgrade.

  This will not affect your system, but you should consider reinstalling these exit(s) in order to take advantage of the updates. At this point you are only alerted to this situation. The actions required to handle this will be described later in the documentation of step 2.3.

  This item lists these user-exits.

- Regressed Usermods

  The elements listed were previously installed or modified in this environment by a SMP/E USERMOD, and are being replaced in this upgrade, and so the modification made by the USERMOD is being regressed.

  Before the upgrade implementation, backup the locally modified version.

  Following the upgrade review your modified version of the affected elements together with the new version introduced by this upgrade, and consider re-adapting and re-installing some of these USERMODS.

  Note that there is a step in the 'Post APPLY Exception Handling' step of the Post Implementation section of the upgrade that reminds you regarding this activity.

- Post APPLY Activities

  Review and plan for the Post-upgrade activities listed in this item.

2. Each item, in both categories, must be selected and reviewed in order to continue with the maintenance process.

3. Once you have reviewed these, type 'CONFIRM' to acknowledge your awareness of all required preinstallation and postinstallation activities and to assume responsibility for the SMP/E APPLY BYPASS options required to continue.

When there are items in HOLD ERRORs, if you confirm and proceed with the APPLY step, the listed errors will remain unresolved.

2. Maintenance - Implementation

Step 2.1 – System Requirements

1. Select Minor Step 1, System Requirements.

   Handle the following system requirements, before proceeding with the upgrade:

- Remove all INCONTROL load libraries (LOAD and SIML) from LLA, VLF, PDSMAN, QUICKFETCH, PMO, or any other fetch optimization product.

- Shutting down all INCONTROL products in the target environment is highly recommended.

Step 2.2 – APPLY the Maintenance

This step APPLYs the maintenance.

The SMP/E BYPASS options required for this upgrade, and implicitly confirmed in the Pre Upgrade Exception Handling step, are used for the APPLY process.

1. Select Minor Step 2, APPLY the Maintenance.

2. Submit the job.

3. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details, correct the problem(s), and rerun the job until it completes successfully.

4. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 2.3 – Handle User Exit Updates

This step lists the new versions of user-exit samples, introduced by the upgrade. These exits were identified as already being implemented in your system. The updates have not yet affected your system.

Select Minor Step 3, Handle User Exit Updates, to display the list.

If no installed user exits were replaced by the upgrade, the following message is displayed:

Step will be marked COMPLETE. No Installed User Exits were replaced in this upgrade.

For each member in this list, consider whether you want to use the new version of the exit and if so, do the following:

1. Back up the source of the installed exit member and its usermod job. They are both located in the ilprefa.CUSTEXIT library. The usermod job, has the same name as the sample exit name, except that the first two characters are replaced by "UM." For example, the usermod job for installing CTDX008B is UMDX008B.

2. Enter the ICE Exit Installation Tool (Main Menu=>Customization=>Environment selection=>Product Customization (set to IOA)=>User EXITs Installation=>EXITs Customization).

3. Enter the name of the exit member, press ENTER, and specify N on the pop-up question (Do you want to use the existing copy?).

4. Edit the exit member source to reflect the local modifications (according to the backup) and press PF03.

5. Specify N on the pop-up question (Do you want to use the existing Job?).

6. Edit the job to reflect any local modifications.

7. Submit the job and verify successful completion.

Return to Major Step 2, Maintenance - Implementation.

Step 2.4 – Propagate Members to Environment Libs.

INCONTROL BASE libraries are shipped with members containing symbolic variables that must be resolved according to local values that are determined during installation. During the installation of INCONTROL products, members related to the products are copied from IOA libraries to the appropriate product libraries and the variables are resolved. (This process of copying elements from a BASE library to a working product library, and resolving the symbolic variables is termed propagation.)

If product members that require propagation are replaced in the BASE libraries by the maintenance, they need to be propagated to the working product libraries, for the changes to take effect. Propagation is not performed automatically - to avoid overwriting the product members (in the working libraries) that may have local modifications.

In the event that you made local modifications to the members in your working library, back up the members and, after the propagation step has been completed, reapply the modifications to the new versions of the members (based on the backups).

1. Select Minor Step 4, Propagate Members to Environment Libs.

    If there are no members requiring propagation in the upgrade, the step is marked COMPLETE. Continue with .

2. Enter L in the S column in the row with the Propagate selected elements description, to display a list of elements that were introduced by this maintenance and require propagation.

    A panel opens with a table listing the elements and propagation data. Statuses are displayed for the elements according to the following propagation considerations:

    -   Elements that can be propagated without further analysis. There is no chance of overwriting local modifications, since they did not exist previously in the working library. These elements have a 'New' status and are pre-selected with an S (this selection cannot be removed).

    -   Elements that must be propagated. There is a chance of overwriting local modifications, since they previously existed in the working library. These elements have a 'MustReplace' status and are pre-selected with an S (this selection cannot be removed). Make sure to back up the appropriate members as described above.

    -   Elements that require further analysis before they are propagated. There may be a chance of overwriting local modifications, since they did exist previously in the working library. These elements have a 'Replacement' status.

    For assistance in deciding which elements to propagate or to obtain more information about any of the elements in the list, use the following line commands for each element:

    B - to view the new version of the element

    V - to read the PTF description

The V option is not active after the PTFs for the upgrade have been ACCEPTed.

    For the elements that are being propagated, check if there are local modifications that were made previously and must be reapplied. Back up the appropriate elements to preserve the modifications for reference.

3. Select the elements from the list that you want to propagate, by entering S in the O column next to the elements. Press PF3 (END) to close the panel.

4. Submit the job.

If you enter L after the job has completed, elements that have been propagated have a Propagated! status.

5. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

6. After propagation, apply the local modifications as they existed previously using local site procedures. Use the backups that you created in step 2 as references.

7. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 2.5 – Copy Elements into Site Libraries

During the original installation, certain libraries may have been copied to libraries outside the IOA libraries and afterwards modified locally. In this step, the locally modified libraries are identified, so they can be first backed up. (Otherwise the new members in these libraries will overwrite the modified members.) When the job is run, the selected elements are copied to the site libraries. After the job has completed successfully, the local modifications must be reapplied to these members.

PROCJCL elements may be brought in an upgrade. Previously, members of the PROCJCL library may have been copied by the installation jobs to a library specified by the PROCLIB installation parameter.

If any PROCJCL members for the installed products are replaced by the upgrade, they may be listed using the L option, and selected to be recopied using the S options. If any of the selected members had local modifications in the site library, back them up first, before submitting the job, and re-work the changes after this step is completed.

1. Select Minor Step 5, Copy Elements into Site Libraries.

If either the PROCLIB parameter is set to the default value (DONTCOPY, do not copy to a site library), or if no PROCJCL elements are replaced in this upgrade, for the products installed, an appropriate message is issued, and the step marked COMPLETE. Continue with .

2. Enter L in the S column in the row with the Copy selected elements description, to list the elements to be copied.

A panel opens with a table listing the elements and copy data.

For assistance in deciding which elements to copy, use the following line commands:

    B - to view the new version of the element

    V - to read the PTF description

The V option is not active after the PTFs for the upgrade have been ACCEPTed.

3. Enter S in the O column next to the elements that you decide to copy and press PF3 (END) to close the panel.

If any of these elements have local modifications, back them up now, and reapply the modifications to the new copies after the job has completed.

4. Submit the job.

5. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

6. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 2.6 – Post APPLY Exception Handling

During this step you must review and handle the post APPLY exception situations relevant to this upgrade and environment.

1. Select Minor Step 6, Post APPLY Exception Handling.

    A panel opens with following list:

    *   Post APPLY Holds

        Review the HOLD exceptions listed (if any) and take the actions described within.

    *   Regressed USERMODs

        The listed elements were replaced by this upgrade. These elements were identified as having been locally modified using SMP/E USERMOD. To avoid losing the local modifications do the following:

2. The locally modified version of these elements were backed up during the Pre-Upgrade Exception Handling step (Step 1.8).

3. Now, compare the modified versions of each element with its new version (introduced by this upgrade).

4. Review each element in the list and adapt it if necessary.

5. Re-install each adapted element using an SMP/E USERMOD.

    a. Post APPLY Activities

    b. Review the list of Post APPLY activities relevant to your environment, and take the actions described.

6. Select each of the above items to review the post APPLY exception situations relevant to this upgrade and environment.

7. Take the necessary post APPLY actions.

8. To continue, type CONFIRM to affirm that you have taken all the required actions.

9. Press PF3 (END) to return to the Minor Steps Selection panel.

3. Maintenance - Post Implementation

Step 3.1 – ACCEPT Maintenance

This step will ACCEPT all the PTFs APPLYed by this upgrade.

1. Select Minor Step 1, ACCEPT Maintenance.

2. Submit the job.

3. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

4. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 3.2 – Housekeeping

The maintenance files that were used for the maintenance are no longer required and are deleted in this step.

1. Select Minor Step 2, Housekeeping.

2. Press Enter to delete the maintenance packages.

3. Press PF3 (END) to close the panel.

Part 2 Ad hoc maintenance

Preparing for ad hoc maintenance

Preparing for the ad hoc installation

The best practice is to decide carefully before beginning the ad hoc installation, which PTFs you need for your system.

Before the ad hoc installation process begins, customers must verify that there is enough space in the basepref.MAINTLIB and ilprefa.MAINTLIB libraries in order to accommodate 50 additional blocks and 4 additional directory blocks.

In preparation for the ad hoc installation, the PTF files used by the ad hoc installation process (together with any prerequisites above the current maintenance level) must be determined from eFix and transferred to the mainframe as one or more binary files. These files contain the PTFs to be installed as ad hoc PTFs.

For each page of PTFs downloaded from eFix, if any of the PTFs are identified as being in error, a file containing SMP/E HOLDDATA statements is also downloaded. HOLDDATA is an SMP/E mechanism that assists in identifying PTFs that are in error, and identifying corrective PTFs, if available. These HOLDDATA files must also be transferred to the mainframe as one or more binary files. The HOLDDATA must reside in files separate from the PTFs.

These PTF and HOLDDATA files must be renamed to the names indicated in the Manage PTF(s) file(s) step of the ad hoc PTF process. They require the following dataset attributes: LRECL=80, RECFM=FB, DSORG=PS. An unlimited number of PTFs, in up to 10 files, can be installed in a single ad hoc cycle. For each PTF file, a parallel HOLDDATA file containing one or more applicable HOLDDATA statements to be RECEIVEd can also be made available.

Running ad hoc maintenance from ICE

Invoke the INCONTROL Installation and Customization Engine (ICE). For details refer to the Installation and Customization Engine section in the INCONTROL for z/OS Installation Guide: Installing.

1. From the list on the INCONTROL Installation Options screen, select Maintain your Environment.

2. On the IOA Maintenance and ICE refresh screen, select APPLY PTFs.

3. Select Major Step 1, Apply Ad hoc PTFs.

Using common features

In this section, common procedures are described.

See B Common messages reference (on page 44) for common messages and their explanations.

Common to both Major and Minor Step Selection panels

➤ To select a step or an option

Enter S in the Sel column in the row next to the step or option.

➤ To mark a step as completed

Enter C in the Sel column in the row next to the step.

Under normal circumstances, the step will be marked COMPLETE automatically.

Common to most panels for Minor Steps

➤ To submit a job

1. Enter S in the S column in the row next to the job description.

   The Job Status message box opens, indicating that the job is running. Pressing Enter refreshes the status and, when the job has completed, opens the job log.

   If the job ran already, a confirmation window is displayed to allow you to confirm whether you want to rerun the job (default is N=no).

2. Press PF3 (END) to close the log.

   An OK status next to the job description indicates that the job completed successfully.

   A FAIL status next to the job description indicates that the job failed. Examine the log for the cause of the failure. To understand the information contained in the log,   see F   Maintenance job logs (on page 53).

➤ To browse a job log

   Enter B in the S column in the row next to the job description of a job that ran already.

Ad hoc APPLY PTF process

In the table of contents below, the primary headings (that start with the word "Step") correspond to the minor steps in the ad hoc APPLY PTF procedure in the ICE environment.

Step 1.1 – Start new ADHOC Activity

This step starts a new ad hoc PTF cycle for applying PTFs to the system.

1. Select Minor Step 1, Start new ADHOC Activity.

   The current maintenance level and an assigned ad hoc cycle ID number are displayed.

If the previous APPLY ad hoc PTF cycle has not yet been completed (Step 1.7 - APPLY the PTFs was started, but Step 1.12 - ACCEPT APPLYed PTFs was not reached) a message is displayed. It is recommended that you first complete the previous cycle (at least up to the ACCEPT step) before you start a new cycle.

2. Press PF3 (END) to continue the process by returning to the Minor Steps Selection panel. To exit without continuing, enter CANCEL in the command line.

Pressing PF3 initiates the new ad hoc PTF cycle. All log and status information from the previous cycle is deleted and it is no longer possible to return to the previous cycle.

Step 1.2 – Manage PTF(s) file(s)

The PTFs (and HOLDDATA, if applicable) are contained in sequential data sets, which must be available on DASD. This step assumes that the required data sets are on DASD, as described in Preparing for the ad hoc installation (on page 24). This step checks that the data sets are available with the correct attributes and names.

1. Select Minor Step 2, Manage PTF(s) file(s).

2. Ensure that the data sets that contain the PTF(s) (and HOLDDATA, if applicable) have the attributes and data set name as specified in the panel instructions.

3. Press Enter.

   If the PTF data set is available with the correct name, the data set name is displayed in the list at the bottom of the panel with a Ready status. If a parallel HOLDDATA data set was also made available, its status is displayed in the HOLDDATA column, otherwise a status of N/A is displayed.

   At the top of the panel, new data set names are displayed in the PTF and HOLDDATA DSN fields, available (if required) for the next data sets.

   There can be one or more sequential PTF data sets (limit 10). Each data set may contain one or more PTFs. For each PTF dataset, a parallel HOLDDATA data set may also exist.

4. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.3 – RECEIVE and Analyze Target Environment

This step will RECEIVE the PTFs (and HOLDDATA, if applicable), then run an APPLY CHECK to analyze the target environment and prepare subsequent steps of the ad hoc cycle.

Do not run step 1.3 after step 1.7 (APPLY the PTFs) has been run.

1. Select Minor Step 3, RECEIVE and Analyze Target Environment.

2. Submit the job.

   A log is displayed. For general information about understanding the log, see F   Maintenance job logs (on page 53).

3. Examine the log for error and warning messages. Resolve any errors and rerun the job.

4. Examine the PE PTF report, if one is included in the log.

   Do the following, as necessary:

   - For PE PTFs without resolving PTF(s) perform the procedure described in PTFs in error without resolving PTF(s) (on page 51).

   - For PE PTFs with resolving PTF(s) perform the procedure described in PTFs in error with resolving PTF(s) (on page 51).

5. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.4 – View content selected for installation

Use this step to review the APARs that will be installed during the ad hoc cycle.

1. Select Minor Step 4, View content selected for installation.

   A list of APARs with a brief description is displayed.

2. Enter S in the OP column to see the full description of an APAR. The details for each APAR are displayed in individual panels. Pressing PF3 (END) closes the panel of an APAR, allowing you to view the panel of the next selected APAR, or to return to the list.

The S option is not active after the PTFs for the upgrade have been ACCEPTed.

3. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.5 – Pre-Upgrade Exception Handling

During this step you must review the exception situations relevant to this ad hoc cycle.

These are divided into two groups:

- items that must be handled before step 1.7 – APPLY the PTFs

- items that require reviewing and planning, but must be handled after step 1.7 – APPLY the PTFs

1. Select Minor Step 5, Pre-Upgrade Exception Handling.

The following groups of items are displayed:

- Pre Installation Holds

  Review the list of Pre-APPLY exceptions relevant to your environment. These actions must be taken before running the APPLY the PTFs step.

- HOLD ERRORs

  This item lists the unresolved PTF in ERROR conditions that were identified and brought to your attention during the RECEIVE and Analyze Target Environment step of this ad hoc cycle.

  The PTF(s) listed are HELD for the ERROR Reason indicated, and the HOLD condition is NOT resolved in this ad hoc cycle. Refer to the description in E   Handling PE PTFs (on page 51) or to Step 1.3 – RECEIVE and Analyze Target Environment (on page 27) for instructions on how to proceed.

  If you decide to mark this step Complete, and proceed with the APPLY step these conditions will remain unresolved.

- Post Installation Holds

  Review the list of Post APPLY exceptions relevant to your environment. You are being alerted to these now so that you will be aware of them and can plan for them. These activities must be done after the APPLY the PTF during the Post APPLY Exception Handling step 1.11.

- User Exits

  The RECEIVE and Analyze Target Environment step identified that new version(s) of exit samples, which are already implemented in your system, will be introduced by this ad hoc cycle.

  This will not affect your system, but you should consider reinstalling these exit(s) in order to take advantage of the updates. At this point you are only alerted to this situation. The actions required to handle this will be described later in the documentation of step 1.8.

  This item lists these user-exits.

- Regressed Usermods

  The elements listed were previously installed or modified in this environment by a SMP/E USERMOD, and are being replaced in this ad hoc cycle, and so the modification made by the USERMOD is being regressed.

  Before the APPLY implementation, backup the locally modified version.

Following the APPLY review your modified version of the affected elements together with the new version introduced by the PTF(s) in this ad hoc cycle, and consider re-adapting and re-installing some of these USERMODS.

Note that there is a step in the 'Post APPLY Exception Handling' step that reminds you regarding this activity.

2. Each item, in both categories, must be selected and reviewed in order to continue with the ad hoc PTF installation process.

3. Once you have reviewed these, type CONFIRM to acknowledge your awareness of all required preinstallation and postinstallation activities and to assume responsibility for the SMP/E APPLY BYPASS options required to continue.

When there are items in HOLD ERRORs, if you decide to confirm and proceed with the APPLY step, the listed errors will remain unresolved.

Step 1.6 – System Requirements

1. Select Minor Step 6, System Requirements.

Handle the following system requirements, before proceeding with the APPLY step:

- Remove all INCONTROL load libraries (LOAD and SIML) from LLA, VLF, PDSMAN, QUICKFETCH, PMO, or any other fetch optimization product.

- Shutting down all INCONTROL products in the target environment is highly recommended.

Step 1.7 – APPLY the PTFs

This step APPLYs the PTFs.

The SMP/E BYPASS options required for this APPLY, and implicitly confirmed in the Pre Upgrade Exception Handling step, are used for the APPLY process.

1. Select Minor Step 7, APPLY the PTFs.

2. Submit the job.

3. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details, correct the problem(s), and rerun the job until it completes successfully.

4. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.8 – Handle User Exit(s) Updates

This step lists the new versions of user-exit samples, introduced by the ad hoc cycle. These exits were identified as already being implemented in your system. The updates have not yet affected your system.

Select Minor Step 8, Handle User Exit(s) Updates, to display the list.

If no installed user exits were replaced by this ad hoc cycle, the following message is displayed:

Step will be marked COMPLETE. No Installed User Exits were replaced in this upgrade.

For each member in this list, consider whether you want to use the new version of the exit and if so, do the following:

1. Back up the source of the installed exit member and its usermod job. They are both located in the ilprefa.CUSTEXIT library. The usermod job, has the same name as the sample exit name, except that the first two characters are replaced by "UM."   for example, the   usermod job for installing CTDX008B is UMDX008B.

2. Enter the ICE Exit Installation Tool (Main Menu=>Customization=>Environment selection=>Product Customization (set to IOA)=>User EXITs Installation=>EXITs Customization).

3. Enter the name of the exit member, press ENTER, and specify N on the pop-up question (Do you want to use the existing copy?).

4. Edit the exit member source to reflect the local modifications (according to the backup) and press PF03.

5. Specify N on the pop-up question (Do you want to use the existing Job?).

6. Edit the job to reflect any local modifications.

7. Submit the job and verify successful completion.

8. After all the listed items have been handled, continue with step 1.9

Step 1.9 – Propagate Members to Environment Libs.

INCONTROL BASE libraries are shipped with members containing symbolic variables that must be resolved according to local values that are determined during installation. During the installation of INCONTROL products, members related to the products are copied from IOA libraries to the appropriate product libraries and the variables are resolved. (This process of copying elements from a BASE library to a working product library, and resolving the symbolic variables is termed propagation.)

If product members that require propagation are replaced in the BASE libraries by this ad hoc cycle, they need to be propagated to the working product libraries, for the changes to take effect. Propagation is not performed automatically - to avoid overwriting the product members (in the working libraries) that may have local modifications.

In the event that you made local modifications to the members in your working library, back up the members and, after the propagation step has been completed, reapply the modifications to the new versions of the members (based on the backups).

1. Select Minor Step 9, Propagate Members to Environment Libs.

    If there are no members requiring propagation in the ad hoc cycle, the step is marked COMPLETE and a message to this effect is displayed. Continue with.

2. Enter L in the S column in the row with the Propagate selected elements description, to display a list of elements that were introduced by this ad hoc cycle and require propagation.

    A panel opens with a table listing the elements and propagation data. Statuses are displayed for the elements according to the following propagation considerations:

- Elements that can be propagated without further analysis. There is no chance of overwriting local modifications, since they did not exist previously in the working library. These elements have a 'New' status and are pre-selected with an S (this selection cannot be removed).

- Elements that must be propagated. There is a chance of overwriting local modifications, since they previously existed in the working library. These elements have a 'MustReplace' status and are pre-selected with an S (this selection cannot be removed). Make sure to back up the appropriate members as described above.

- Elements that require further analysis before they are propagated. There may be a chance of overwriting local modifications, since they did exist previously in the working library. These elements have a 'Replacement' status.

For assistance in deciding which elements to propagate or more to obtain more information about any element on the list, use the following line commands for each element:

B - to view the new version of the element

V - to read the PTF description

Note: The V option is not active after the PTFs for the upgrade have been ACCEPTed.

For the elements that are being propagated, check if there are local modifications that were made previously and must be reapplied. Back up the appropriate elements to preserve the modifications for reference.

3. Select the elements from the list that you decide to propagate, by entering S in the O column next to the elements. Press PF3 (END) to close the panel.

4. Submit the job.

   If you enter L after the job has completed, elements that have been propagated have a Propagated! status.

5. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

6. After propagation, apply the local modifications as they existed previously using local site procedures. Use the backups that you created in step 2 as references.

7. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.10 – Copy Elements into Site Libraries

During the original installation, certain libraries may have been copied to libraries outside the IOA libraries and afterwards modified locally. In this step, the locally modified libraries are identified, so they can be first backed up. (Otherwise the new members in these libraries will overwrite the modified members.) When the job is run, the selected elements are copied to the site libraries. After the job has completed successfully, the local modifications must be reapplied to these members.

PROCJCL elements may be brought in an ad hoc cycle. Previously, members of the PROCJCL library may have been copied by the installation jobs to a library specified by the PROCLIB installation parameter.

If any PROCJCL members for the installed products are replaced by the ad hoc cycle, they may be listed using the L option, and selected to be recopied using the S options. If any of the selected members had local modifications in the site library, back them up first, before submitting the job, and re-work the changes after this step is completed.

1. Select Minor Step 10, Copy Elements into Site Libraries.

   If either the PROCLIB parameter is set to the default value (DONTCOPY, do not copy to a site library), or if no PROCJCL elements are replaced in this ad hoc cycle, for the products installed, an appropriate message is issued, and the step marked COMPLETE. Continue with Step 1.11 – Post APPLY Exception Handling (on page 32).

2. Enter L in the S column in the row with the Copy selected elements description, to list the elements to be copied.

   A panel opens with a table listing the elements and copy data. For assistance in deciding with elements to copy, use the following commands:

   > B - to view the new version of the element

   > V - to read the PTF description

The V option is not active after the PTFs for the upgrade have been ACCEPTed.

3. Enter S in the O column next to the elements that you decide to copy and press PF3 (END) to close the panel.

If any of these elements have local modifications, back them up now, and reapply the modifications to the new copies after the job has completed.

4. Submit the job.

5. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

6. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.11 – Post APPLY Exception Handling

Select the post APPLY exception situations relevant to this ad hoc cycle and environment.

1. Select Minor Step 11, Post APPLY Exception Handling.

   A panel opens with following list:

   - Post APPLY Holds

     Review the HOLD exceptions listed (if any) and take the actions described within.

   - Regressed USERMODs

     The listed elements, if any, were replaced by this ad hoc cycle. These elements were identified as having been locally modified using SMP/E USERMOD. To avoid losing the local modifications do the following:

     a. The locally modified version of these elements were backed up during the Pre-Upgrade Exception Handling step (Step 1.5).

     b. Now, compare the modified versions of each element with its new version (introduced by this ad hoc cycle).

     c. Review each element in the list and adapt it if necessary.

     d. Re-install each adapted element using an SMP/E USERMOD.

2. Select each of the above items to review the post APPLY exception situations relevant to this ad hoc cycle and environment.

3. Take the necessary post APPLY actions.

4. To continue, type CONFIRM to affirm that you have taken all the required actions.

5. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.12 – ACCEPT APPLYed PTFs

This optional step will ACCEPT the PTFs APPLYed by this cycle.

1. Select Minor Step 12, ACCEPT APPLYed PTFs.

2. Submit the job.

3. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

4. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 1.13 – Housekeeping

The PTF and HOLDDATA files, that were used for this ad hoc PTF cycle are no longer required and are deleted in this optional step.

1. Select Minor Step 13, Housekeeping.

2. Press Enter to delete the PTF and HOLDDATA files.

3. Press PF3 (END) to close the panel.

Part 3 Change deployment

Performing change deployment

This chapter describes how the software level (fixes and maintenances) of a cloned environment can be synchronized with the software level of an SMP/E managed base environment using the ICE Change Deployment facility.

A cloned environment can be either SMP/E managed or non-SMP/E managed.

When a cloned environment is non-SMP/E managed, ICE creates a Deployment Package on the base environment. The package contains all the changes (fixes and maintenances) that have been applied to the base environment since its installation. ICE automatically deploys the contents of the package to the cloned environment. For more information, see Change Deployment to a non-SMP/E managed clone environment (on page 34).

When a cloned environment is SMP/E managed, ICE compares the SMP/E CSI Target Zones of the base and cloned environments. The comparison report contains all the differences between the SMP/E CSI Target Zones of the base and cloned environments. Using the report a user can apply the missing fixes to the cloned environment to bring its software level up to the level of the base environment. For more information, see Change Deployment to a non-SMP/E managed clone environment (on page 34).

Change Deployment to a non-SMP/E managed clone environment

This section describes how changes (for example, fixes and maintenances) in a SMP/E managed base IOA environment can be easily and reliably transferred to a cloned non-SMP/E managed IOA environment.

The changes can include

- ad hoc PTFs applied to the base IOA environment

- one or more maintenances applied to the base IOA environment

- user exits, security, screen, and language changes and any other SMP/E changes in the base IOA environment

The tool enables you to move all changed elements from the base IOA environment to bring the cloned IOA environment to the same level as the base IOA environment.

The change deployment procedure, which transfers the new elements from the base environment to the cloned environment, consists of the following stages:

1. An ICE-managed process at the base (source) IOA environment builds a change deployment package that consists of the SMP/E managed data sets. A DFDSS job is used to build the package.

2. If necessary, the user manually copies the change deployment package from base (source) environment to the cloned (target) environment.

3. An ICE-managed process at the cloned (target) IOA environment extracts and deploys the change deployment package. Only changed elements are deployed.

Requirements

Before performing a change deployment procedure, make sure that your system meets the following requirements:

- The maintenance level and the level of the ad hoc PTFs of the cloned environment must be lower than the base environment.

- The space requirements for the maintainable data sets in the cloned environment are identical to their requirements in the base environment. For example, if a maintainable data set was reallocted in the maintenance process, it must be similarly reallocted during the deployment process.

- New products or NLS installed on the base environment are not deployed to the cloned IOA.

- Load modules for user exits are not handled by the change deployment process.

Building the change deployment package

1. Open ICE from the base environment.

2. Select Clone, Deploy IOA Environment.

3. From the IOA Cloning and Changes Deployment panel, select Deploy Changes.

4. Select Deploy fixes and maintenances to cloned non-SMP/E environment.

5. Enter Y in the message panel to proceed with the deployment package building process.

6. Press Enter.

   A window opens displaying the deployment package data set name.

   The data set name has the following format: ilprefa.Dmmddsss ; where: mm = month (from 01 to 12), dd = day of month (from 01 to 31); sss = are the first three digits of the 5-digit number of seconds since 12:00 midnight (from 000 to 863). The prefix "D" indicates "deployment package." For example, IOA.V900D.D0322401.

7. Choose one of following options:

   - Y - Yes, submit the job automatically.

     The deployment process continues automatically. Continue with step 8.

   - N - No, stop the deployment process.

     The deployment process stops.

   - E - Edit the IOAFJCDP job.

     The IOAFJCDP job opens so that you can edit it. After you have made the required changes, submit the IOAFJCDP job to create the deployment package file. Continue with step 8.

8. The IOAFJCDP job invokes the standard IBM DFDSS utility to pack all the changed files in the IOA source environment into the deployment package file. The maximum return code for successfully running IOAFJCDP is 4.

9. If the cloned (target) environment is on a separate system from the base (source) environment, copy the deployment package file to the target system.

Deploying the package at the cloned site

Describes how to deploy the change package from the cloned environment.

1. Open ICE from the clone environment.

2. Select Clone, Deploy IOA Environment. The Major Steps Selection panel opens.

Step 1 – Process considerations

1. Select major step 1, Process considerations. A pop-up message is displayed.

2. Review the considerations listed in the pop-up message and ensure that

- the cloned environment is at a lower maintenance level than the base environment

- there is sufficient space allocated for the maintainable data sets

- new products or NLS installed on the BASE environment are not deployed to the cloned IOA

- load modules for user exits are not handled by the change deployment process

3. Press PF3 to continue.

Step 2 – Extract and apply the maintenance package

1. Select major step 2, Extract and apply the maintenance package.

2. Enter the name of the deployment package data set where it can be accessed from the cloned site. Although, the original name was indicated in the deployment packaging job (see Step 6 in Building the change deployment package (on page 35)), the name might have changed, for example, if the package was copied to the cloned site.

3. Enter Y and press Enter.

At this stage, the process performs the following steps:

a. Extracts the data sets from the change deployment package, using a DFDSS job, to temporary data sets in the cloned environment with prefix *mlprefa*.E*mmddsss* (where: *mm* = month, *dd* = day of month, *sss* =seconds). After the job has completed, the DFDSS input string used for the extract, can be found in *ilprefa*.INSTWORK(IOAFDEXT).

b. Checks if this cloning was from the same base environment.

c. Compares the CSI PTFs of the extracted and cloned environments, to ensure which elements are to be copied to the cloned environment. The sequential files of the base *ilprefa*.CSITZN and the cloned *ilprefa*.CSITZN are compared. These sequential files are created on the base and clone systems especially for CSI levels comparison. As result, the IOAFMML member is created in the INSTWORK library.

d. Checks the cloned environment to ensure that it contains sufficient free space to install the maintenance upgrade.

Note: Only the Installation libraries are affected by the change deployment process. The space requirements for the maintainable data sets in the cloned environment are identical to their requirements in the base environment.

4. Review and plan for the exception situations listed in the confirmation panel.

Collect all the required information about the Pre- and Post- action lists, User exits, User mode. Displays all the collected information in a window, with confirmation to continue the process of deploying the changes.

This information is divided into the following groups:

- items that must be handled before the deployment process to continue the deployment process.

- items that require reviewing and planning, but must be handled on

5. After you have reviewed the information, described in the previous step (4), do one of the following:

   - Type CONFIRM to acknowledge your awareness of all the required preinstallation and postinstallation activities and to continue with deployment process, described in the next step (6).

   - Enter CANCEL. The extracted (temporary) data sets are removed from the cloned site. The cloned environment is automatically restored to its original state. The deployment process ends and can be run again.

6. When you type CONFIRM, the process performs the following steps:

   a. Backs up the cloned environment, before continuing with the deployment process. The name of the backup dataset is displayed. After the backup job has completed, the DFDSS input string used for the backup, can be found in *ilprefa*.INSTWORK(IOACDBKP).

   b. Automatically submits a job that uses IEBCOPY to copy elements from the single extracted (temporary) library to an appropriate cloned data set. The job will be submitted for each library according to the list in the IOAFMML member from the INSTWORK library.

   Do one of the following, depending how the process terminates:

   - If the deployment completes successfully, continue with on

   - If the deployment stops, the JOBNAME and JOBID are displayed to help you correct the problem. After you correct the problem, run the deployment again, opening ICE from the cloned site, starting from

   If there is insufficient space for one or more data sets a message, similar to the following one, is displayed:

```
MNTPSPC2 ==>                                         Row 1 of 4

  -  S Select Dataset to see more details

 Enter: Process                          PF3/END: Return

Note:The Table shows the Space/Dir Blocks that need to be added
0 Dataset                                  Space    DirBlk Alloc
   Name                                    Reqd     Reqd   Units
  IOA.V900.CLN.BASE.INSTALL                 1801      -     BLK
  IOA.V900.CLN.SAMPEXIT                     1615      -     BLK
************************* Bottom of data **************************
```

   For more details about a particular data set, select the data set in the list and a pop-up, similar to the following one, is displayed:

```
MNTPSPC3 ==>
 Dataset Name  : IOAE.K68B.BASE.INSTALL

 Space Allocation
 Allocation Units: BLK
 Space to be Added: 1801
 Total Allocated: 5640      Used: 4165      Extents: 1
 Total Free     : 1475      Required: 1788

 Dir Blocks
 Blocks to be Added: -
 Total Allocated: 180       Used: 146
 Total Free     : 34        Required: 10
```

You can correct the space problem and continue with the deployment without stopping the process.

If you choose to stop the process, press PF3 (END). The process stops and you exit from ICE. To continue the deployment process later, open ICE from the cloned site and start from

The deployment can stop if there are PTFs in the cloned environment that were not applied to the base environment. In this situation a pop-up, similar to the following one, is displayed:

```
MNTCSI ==>                                               Row 1 of 4
************************** Top of Data ***************************
# PTF / APAR That exist at the cloned environment that does not exist at the base
 # environment.
 PC01251
 PC01394
*********************** Bottom of Data ***************************
```

Determine if the deployment package is at the correct maintenance level for the cloned environment. If necessary, run the deployment process again with a deployment package at an equal or greater maintenance level than the cloned environment. Open ICE from the cloned site and start from .

- Enter CANCEL. The extracted and temporary data sets are removed from the cloned site. The deployment process ends.

Step 3 – List post Deploy changes activities

1. Select Major step 3, List post Deploy changes activities.

Step 3.1 – Handle User Exit Updates

This step lists the new versions of user-exit samples, introduced by the upgrade. These exits were identified as already being implemented in your system. The updates have not yet affected your system.

Select Minor Step 1, Handle User Exit Updates, to display the list.

If no installed user exits were replaced by the upgrade, the following message is displayed:

Step will be marked COMPLETE. No Installed User Exits were replaced in this upgrade.

For each member in this list, consider whether you want to use the new version of the exit and if so, do the following:

1. Back up the source of the installed exit member and its usermod job. They are both located in the ilprefa.CUSTEXIT library. The usermod job, has the same name as the sample exit name, except that the first two characters are replaced by "UM." For example, the usermod job for installing CTDX008B is UMDX008B.

2. Manually install the exit member in the cloned environment.

Return to Major Step 3, List post Deploy changes activities.

Step 3.2 – Propagate Members to Environment Libs.

INCONTROL BASE libraries are shipped with members containing symbolic variables that must be resolved according to local values that are determined during installation. During the installation of INCONTROL products, members related to the products are copied from IOA libraries to the appropriate product libraries and the variables are resolved. (This process of copying elements from a BASE library to a working product library, and resolving the symbolic variables is termed propagation.)

If product members that require propagation are replaced in the BASE libraries by the maintenance, they need to be propagated to the working product libraries, for the changes to take effect. Propagation is not performed automatically - to avoid overwriting the product members (in the working libraries) that may have local modifications.

In the event that you made local modifications to the members in your working library, back up the members and, after the propagation step has been completed, reapply the modifications to the new versions of the members (based on the backups).

1. Select Minor Step 2, Propagate Members to Environment Libs.

   If there are no members requiring propagation in the upgrade, the step is marked COMPLETE. Continue with Step 3.3 – Copy Elements into Site Libraries (on page 40).

2. Enter L in the S column in the row with the Propagate selected elements description, to display a list of elements that were introduced by this maintenance and require propagation.

   A panel opens with a table listing the elements and propagation data. Statuses are displayed for the elements according to the following propagation considerations:

   - Elements that can be propagated without further analysis. There is no chance of overwriting local modifications, since they did not exist previously in the working library. These elements have a 'New' status and are pre-selected with an S (this selection cannot be removed).

   - Elements that must be propagated. There is a chance of overwriting local modifications, since they previously existed in the working library. These elements have a 'MustReplace' status and are pre-selected with an S (this selection cannot be removed). Make sure to back up the appropriate members as described above.

   - Elements that require further analysis before they are propagated. There may be a chance of overwriting local modifications, since they did exist previously in the working library. These elements have a 'Replacement' status.

For assistance in deciding which elements to propagate or to obtain more information about any of the elements in the list, use the following line command for each element:

   B - to view the new version of the element

For the elements that are being propagated, check if there are local modifications that were made previously and must be reapplied. Back up the appropriate elements to preserve the modifications for reference.

3. Select the elements from the list that you want to propagate, by entering S in the O column next to the elements. Press PF3 (END) to close the panel.

4. Submit the job.

   If you enter L after the job has completed, elements that have been propagated have a Propagated! status.

5. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

6. After propagation, apply the local modifications as they existed previously using local site procedures. Use the backups that you created in step 2 as references.

7. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 3.3 – Copy Elements into Site Libraries

During the original installation, certain libraries may have been copied to libraries outside the IOA libraries and afterwards modified locally. In this step, the locally modified libraries are identified, so they can be first backed up. (Otherwise the new members in these libraries overwrite the modified members.) When the job is run, the selected elements are copied to the site libraries. After the job has completed successfully, the local modifications must be reapplied to these members.

PROCJCL elements may be brought in an upgrade. Previously, members of the PROCJCL library may have been copied by the installation jobs to a library specified by the PROCLIB installation parameter.

If any PROCJCL members for the installed products are replaced by the upgrade, they may be listed using the L option, and selected to be recopied using the S options. If any of the selected members had local modifications in the site library, back them up first, before submitting the job, and re-work the changes after this step is completed.

1. Select Minor Step 3, Copy Elements into Site Libraries.

   If either the PROCLIB parameter is set to the default value (DONTCOPY, do not copy to a site library), or if no PROCJCL elements are replaced in this upgrade, for the products installed, an appropriate message is issued, and the step marked COMPLETE. Continue with .

2. Enter L in the S column in the row with the Copy selected elements description, to list the elements to be copied.

   A panel opens with a table listing the elements and copy data.

   For assistance in deciding which elements to copy, use the following line command:

   > B - to view the new version of the element

3. Enter S in the O column next to the elements that you need to copy and press PF3 (END) to close the panel.

   If any of these elements have local modifications, back them up now, and reapply the modifications to the new copies after the job has completed.

4. Submit the job.

5. When the job has completed, examine the status. If the job did not complete successfully, use B to browse the log for more details.

6. Press PF3 (END) to return to the Minor Steps Selection panel.

Step 3.4 – Post APPLY Exception Handling

During this step you must review and handle the post APPLY exception situations relevant to this upgrade and environment.

1. Select Minor Step 4, Post APPLY Exception Handling.

    A panel opens with following list:

    • Post APPLY Holds

    Review the HOLD exceptions listed (if any) and take the actions described within.

    • Regressed USERMODs

    The listed elements are being replaced by this upgrade. These elements are identified as having been locally modified. To avoid losing the local modifications do the following:

    a. The locally modified version of these elements were backed up earlier.

    b. Now, compare the modified versions of each element with its new version (introduced by this upgrade).

    c. Review each element in the list and adapt it if necessary.

    d. Re-install each adapted element.

    • Post APPLY Activities

    Review the list of Post APPLY activities relevant to your environment, and take the actions described.

2. Select each of the above items to review the post APPLY exception situations relevant to this upgrade and environment.

3. Take the necessary post APPLY actions.

4. To continue, type CONFIRM to affirm that you have taken all the required actions.

5. Press PF3 (END) to return to the Minor Steps Selection panel.

Change Deployment to a SMP/E managed clone environment

The section describes how the software level (fixes and maintenances) of an SMP/E managed cloned environment can be synchronized with the software level of an SMP/E managed base environment using the Change Deployment facility of ICE.

Change Deployment steps

On the base environment

1. Open ICE from the base environment.

2. Select Clone, Deploy IOA Environment.

3. From the IOA Cloning and Changes Deployment panel, select Deploy Changes.

4. Select Generate report for comparison with cloned SMP/E environment.

ICE builds the SMP/E Target Zone report of the base environment. The name of the report (ilprefa.CSITZN) is displayed.

5. Rename the report and copy it to the cloned environment.

The name of the report on the cloned environment must be different from ilprefa.CSITZN.

On the cloned environment

1. Open ICE from the cloned environment.

2. Select Clone, Deploy IOA Environment.

3. From the IOA Cloning and Changes Deployment panel, select Deploy Changes.

4. Select Compare SYSMODs in this environment with report from Base.

5. Enter the name of the report you chose in step 5 of .

6. Enter Y and press Enter to proceed.

ICE rebuilds the SMP/E Target Zone report of the cloned environment and compares it to the SMP/E Target Zone report from the base environment.

The detailed comparison report contains all the differences between the SMP/E CSI Target Zones of the base and cloned environments. Using the report a user can apply the missing fixes to the cloned environment to bring its software level up to the level of the base environment.

Part 4 Appendixes

A Maintenance process details

Proceeding without EHD support

BMC Software strongly recommends using EHD (Enhanced Hold Data file), which is an SMP/E mechanism that assists in identifying PTFs that are in error, and identifying corrective PTFs, if available. However, if you nevertheless wish to bypass the EHD support, do the following:

In Minor Step 2, Verify Maintenance Files, enter ? in the O column in the field next to EHD.

1. Read all the instructions in the message window.

2. Enter N in the Proceed using EHD? field.

3. Press PF3 (END) to close the window.

B   Common messages reference

Message	Description
GIM20201S	Refer to 7. Message GIM20201S (on page 48).
GIM24003W	Refer to 5. Message GIM24003W (on page 47).
GIM24701W	This message is normal for SMP/E ACCEPT processing.
GIM24801S	This message is acceptable during ACCEPT of applied PTFs.
GIM30202E	Refer to 4. Messages GIM30202E and/or GIM30209E (on page 47).
GIM30209E	Refer to 4. Messages GIM30202E and/or GIM30209E (on page 47).
GIM3190xx	This message is associated with message GIM38201x.
GIM38201x	Refer to 3. Message GIM38201E (on page 46).
GIM39701W	This message is acceptable during RECEIVE processing. It probably contains ++JCLIN and/or ++DELETE statements.
GIM43401W	This message indicates that assembly was done for a source that is not installed in any load module. This is probably an optional source that is not installed at the site.
GIM44326I	This message is associated with message GIM38201x.
GIM61703W	This message can be ignored.
GIM61903W	This message can be ignored.
GIM69138W	This message can be ignored.
IEW0461	When issued during – APPLY processing, refer to 2. Messages IEW0461 or IEW2454W (on page 46). – ACCEPT processing – can be ignored
IEW2480W &IEW2482W	These messages can be issued by Binder during link-edit into the IOA SMPLTS library. These messages can be ignored.

Message	Description
IEW2454W	When issued during – APPLY processing, refer to 1. Messages IEW2470E and IEW2454W (on page 46), and 2. Messages IEW0461 or IEW2454W (on page 46). – ACCEPT processing – can be ignored
IEW2470E	When issued during – APPLY processing, refer to 1. Messages IEW2470E and IEW2454W (on page 46). – ACCEPT processing – can be ignored
IEW2609W	This message can be ignored.
IEW2646W & IEW2651W	This message can be issued by Binder during APPLY and ACCEPT processing. These messages can be ignored.
IEW2650I	This message can be ignored.
ABEND822 RC14	Refer to 8. Message ABEND S822 RC14 (on page 49).

C Troubleshooting

1. Messages IEW2470E and IEW2454W

Messages IEW2470E and IEW2454W are issued during link-edit into an IOA load library during APPLY processing. These messages require you to verify that the LOAD / SIML (LOADlang SIMLlang) libraries are not in LINKLIST or any other fetch optimization product such as PDSMAN, QUICKFETCH, or PMO.

2. Messages IEW0461 or IEW2454W

IOA contains some modules that are written in SAS-C. These modules are link-edited with the AUTOCALL option. The SMP/E implementation of AUTOCALL is performed in two stages. During the first stage, modules are link-edited with the NCAL parameter into the SMPLTS library (SMP/E Link-edit Temporary Storage data set). During this stage, it is expected and acceptable that the linkage editor issues IEW0461 or IEW2454W messages to the SYSPRINT data set.

During the second stage the load modules are re-link-edited from the SMPLTS (INCLUDE SMPLTS(xxxx)) with the CALL parameter to the LOAD library. During the second stage, there should not be any IEW0461 or IEW2454W messages.

3. Message GIM38201E

The GIM38201E message identifies a MODID ERROR situation. It is accompanied by message GIM3190x, which details the reason for the failure, and message GIM44326I. SMP/E expected a PRE / REQ / SUP relationship between the installed PTF and the current SYSMOD level (RMID) of the element, but the relationship was not present. This situation may be encountered in one of the following scenarios:

- The current element RMID level is a PTF

- The current element RMID level is INSEXIT, IOASRAC, and so on

The first scenario is abnormal and requires further investigation.

The second scenario is normal and would normally be handled by the Maintenance or APPLY Ad hoc PTF(s) engine. It means that a PTF attempted to maintain an element that was previously modified locally, and installed using an SMP/E USERMOD.

In the event that SMP/E APPLY (CHECK) was run outside of ICE ("natively") and this scenario was encountered, it can be handled as follows:

1. Record all EXITs identified in the messages.

2. Verify that no other error messages exist. If other error messages exist, resolve them first and then continue with these instructions.

3. Add ",ID" to the BYPASS operand on the APPLY (CHECK) command.

4. Rerun the APPLY (CHECK) step and verify its successful completion. Message GIM44326I is expected and can be ignored.

5. At this point, continue with the maintenance upgrade until successful completion, then return to perform the actions shown below for each EXIT that you recorded in step 1. Select one of the following User EXITalternatives (CTMX001, CTDX022, and so on):

- Customers who want to use the old exit do not need to proceed further with this step.

- Customers who want to use the new EXIT should follow these steps:

  1. Back up from CUSTEXIT library the EXITs and their jobs (indicated by UMxxxxx).

  2. Enter the ICE Exit Installation Tool (Main Menu, CUSTOMIZE, User EXITs Installation, EXIT's Customization).

  3. Enter the name of the EXIT and specify NO on the pop-up question (Do you want to use the existing copy?).

  4. Edit the EXIT source to reflect the local modifications (according to the backup) and press PF03.

  5. Specify NO on the pop-up question (Do you want to use the existing Job?).

  6. Edit the job to reflect any local modifications.

  7. Submit the job and verify successful completion.

  8. Verify correct functionality.

4. Messages GIM30202E and/or GIM30209E

Many such messages may be encountered after a failure of APPLY processing. Since it is difficult to identify the cause of the failure, it is recommended that you review the CAUSER SYSMOD SUMMARY REPORT in the SMPRPT file of the SYSOUT.

5. Message GIM24003W

Some of the optional sample sources provided require other software vendors MACLIB, such as CICS, or security packages. Since some of these samples are provided as ++SRC, SMP/E will try to assemble them during ACCEPT processing.

This processing may fail, and produce a GIM24003W message with an RC of 08 or above, when MACLIBs from other software vendors are missing.

This is acceptable if these samples are not implemented at the site, and the ACCEPT processing will not fail.

6. Controlling the assembly listing

The programs selected for these tasks, the execution parameters and the expected MAX-RC, are defined in the SMP/E CSI in the UTILITY entries, which are referred to by the OPTION entries in the GLOBAL zone. In the IOA SMP/E environment, the following OPTIONS entries are provided:

- OPTIOA – for the target zone.

- OPTIOAD – for the DLIB zone.

The following UTILITY entries are provided:

- IOAASM – Assemblies in the target libraries.

- IOAASMD – Assemblies in the DLIB libraries.

- IOALINK – Link-Edit in the target libraries.

- IOALINKD – Link-Edit in the DLIB libraries.

- IOAZAP – Super Zap.

The definitions of these utilities in SMP/E include a set of execution parameters for the programs activated.

This set is defined by BMC Software to suit the assembly and linkage operations of the IOA line of products.

During upgrade installation the output of the assembly might be very large. As a result, you may not want this output to be written to the SYSPRINT file of the SYSOUT during APPLY/ACCEPT processing. In order to achieve this, you may change the parameters supplied to the assembly utility in SMP/E by using one of the following methods:

1. Access the SMP/E Primary Option Menu and perform the following procedures:

   1. Select option 1.1.

   2. Specify GLOBAL.

   3. Select option 3, UTILITY.

   4. Select the required ASM utility (IOAASM for APPLY, IOAASMD for ACCEPT) by specifying "S" next to its name.

   5. In the PARM field, change the LIST/NOLIST value as required.

      o   If you select LIST, assembly listing will be written to the SYSPRINT file of the SYSOUT.

      o   If you select NOLIST, assembly listing will not be written to the SYSPRINT file of the SYSOUT.

2. Run a batch SMP/E job using IOASMP procedure with the following commands:

```
SET BDY(GLOBAL).
UCLIN.
REP UTILITY (IOAASM or IOAASMD)
PARM(XREF(FULL),NOLIST,DECK,NOOBJ,USING(MAP,NOWARN),FLAG(O6)).
ENDUCL.
```

Be aware that in case of assembly errors, no diagnostic procedure can be carried out without the listing of the assembly (SYSPRINT).

7. Message GIM20201S

Because the installation of this upgrade may be memory-consuming, this message may issue with a S0C4 abend during APPLY / ACCEPT processing. BMC Software recommends modifying the REG parameter in the IOASMP cataloged JCL procedure to the maximum value of REGION allowed at the site.

After completing this modification, rerun the problematic job.

8. Message ABEND S822 RC14

There was not enough storage in the region. To resolve this situation decrease the region size by specifying a value greater than 16 megabytes.

You can circumvent a system completion code of X'822' by draining the initiators completely, restarting them, and then resubmitting the job.

9. Message UNABLE TO SELECT A TARGET VOLUME FOR DATA SET dataset_name

During the deployment process at the cloned site, the message UNABLE TO SELECT A TARGET VOLUME FOR DATA SET dataset_name, 04 can appear if there is not enough space on the disk.

The deployment process fails, referring to the failing job name and ID for further information.

This can happen when the DFDSS Utility tries to allocate a data set with a different prefix on the original disk and there is not enough space.

➢ To perform a workaround

Edit the IOAFDEXT member in the basepref.INSTALL library, by adding one of the following parameters, after the IMPORT parameter:

 (For a non-SMS managed installation)

```
OUTDYNAM((VolSer1,Unit1)[,(VolSer2,Unit2)])
```

—OUTDYNAM((VOL1,3390))

—OUTDYNAM((VOL1,3390),(VOL2,3390),(VOL3,3390),(VOL4,3390))

If the data sets of the base environment were allocated using SMS classes, the following parameters must be added:

```
BYPASSACS(**) NULLMGMTCLAS NULLSTORCLAS
```

D   Identifying and resolving PE PTFs using eFix

The procedure described in this section helps to identify and resolve PE PTFs (PTFs in ERROR) within a specified level and below. BMC Software recommends that you follow this procedure whenever installing a new system or a maintenance upgrade. Follow the procedure at the beginning of the project, and again before moving the new or upgraded system to production.

➢ To identify and resolve PEs within a specified level and below

1. Log on to the eFix service (http://apps.bmc.com/support/efix.cgi) using your BMC support username and password.

2. Select the Environment and Version according to your system.

3. Select PE from the Status dropdown menu.

4. Enter a Search Argument of L*mm** where mm is the maintenance level, taken from *v.rr.mm*. For example, for 8.0.02 use 02 for the mm value. (Note: The '*' indicates all levels up to and including level *mm*.)

5. Submit the query. The results screen contains a list of all PE PTFs in the specified level and below.

   This list should be the input for the next query.

6. Click the Use Results from all Pages button, to return to the entry screen. The Search Arguments window is populated with all the PE PTFs in the levels specified.

7. Select the Run Pre/Co Requisite Analysis check box, and choose the Level of the maintenance or system being installed (this is the same mm value used in Step 4). Leave the Resolve PE PTFs check box selected (the default).

8. Submit the query. The resulting list will contain

   - the PE PTFs requested

   - their resolving PTFs (if found)

   - additional PTFs required by the resolving PTFs above the selected maintenance level

   In the results list, the PE flag will be colored

   - blue for PE PTFs that were resolved

   - red for PE PTFs that were not resolved

   Only PTFs above the level requested will be marked for download.

9. Download the PTFs using the Download selected PTFs on this page button. In the event that there are multiple pages, repeat this step for every page.

10. Upload the PTFs to your system (LRECL=80 and RECFM=F or FB). This upload MUST be a binary upload, without specifying ASCII/EBCDIC translation or CR/LF.

11. Install the PTFs using the Apply Ad hoc PTFs feature of ICE. If you are installing a maintenance upgrade, using the Apply Maintenance Upgrade feature of ICE, add these PTFs to the upgrade using the 'A' option in Step 1.6 RECEIVE and Analyze Target Environment.

E   Handling PE PTFs

This section explains how to handle PE PTFs, whether or not they have resolving PTFs.

PTFs in error without resolving PTF(s)

It is important to realize that the existence of PTFs in error without resolving PTF(s) probably does NOT mean that you should stop this upgrade, for the following reasons:

- The error(s) may not be relevant to products that you have installed.

- The error(s) may not be relevant for your specific work environment.

- A workable bypass or workaround to the error situation may be available.

- The error(s) caused by the PE-PTF may be minor compared to the error resolved or functionality introduced by it.

To assess the relevance and potential impact to your environment, and to review workarounds or bypasses for the problem, do the following:

1. Go to the Customer Support Site on http://www.bmc.com and navigate to eFix (or click on the following link: eFix).

2. Select the following:
   - Environment: 7.0.x
   - The Profile that reflects the target environment
   - Search Type: Apar
   - Status: All

3. Copy the REASONs from the list in the log and paste them into the Search Argument(s) box.

4. Click on Search.

5. In the resulting list, click on and review the description of each APAR in the list carefully.

6. If the APAR is not present on eFix, or if further information or assistance is required, contact your BMC Customer Support Representative.

PTFs in error with resolving PTF(s)

To download the correcting PTFs that are currently available and RECEIVE them into your SMP/E environment so that they are APPLYed together with the rest of this upgrade or ad hoc cycle, carry out the following steps:

1. Go to the Customer Support Site on http://www.bmc.com and navigate to eFix (or click on the following link: eFix).

2. Select the following:

   - Environment: 7.0.x

   - The Profile that reflects the target environment

   - Search Type: PTF

   - Status: All

3. Copy the Resolving PTF(s) from the list in the log and paste them into the Search Argument(s) box.

4. Check the Run Pre/Co-requisite analysis above Level check box and select the appropriate maintenance level.

5. Click on Search.

6. On the PTF Results page, click Download selected PTFs on this page to download the PTFs. If the query results consist of multiple pages, go to each page and click Download selected PTFs on this page.

7. Unzip and upload all the downloaded files to the mainframe. The transfer must be a binary transfer, without CR/LF translation, to a LRECL=80, RECFM=FB dataset(s).

8. Press PF3 (END) to return to the Minor Steps Selection panel.

9. Continue with the appropriate maintenance or ad hoc procedure:

   - For a maintenance cycle, do the following:

   Select the A option in the 'RECEIVE and Analyze Target Environment' ICE step, to see the name of the dataset that the PTFs should be made available in. Rename the dataset containing the PTFs to this name and press Enter. Once the dataset is available, it will appear in the list of datasets containing PTFs that will be installed at the bottom of the panel with a Ready status. The name of the dataset to use for any further PTFs will be displayed at the top of the panel.

   Exit the A screen, and use S to rerun the RECEIVE and Analyze job to include the PTFs in the additional dataset in this upgrade.

   Press PF3 (END) to return to the Minor Steps Selection panel.

   Continue with .

   - For an ad hoc cycle, do the following:

   Return to the Manage PTF(s) file(s) step (1.2) and rename the uploaded file to the name displayed at the top, in order to include these PTFs in the APPLY. Once the dataset is available, it will appear in the list of datasets containing PTFs that will be installed at the bottom of the panel with a Ready status. The name of the dataset to use for any further PTFs will be displayed at the top of the panel.

   Use S to rerun to the RECEIVE and Analyze Target Environment job to include the PTFs in the additional dataset in this cycle.

   Press PF3 (END) to return to the Minor Steps Selection panel.

   Continue with .

F Maintenance job logs

When a maintenance job runs a log is generated. After a job is completed the user can examine the job to learn about the status of the job. If the job was not successful, instructions indicate what corrections must be made before running the job run again.

A date and time stamp at the beginning of the log indicates when the job began.

An analysis is provided for each step of the job, including the condition and return codes.

A date and time stamp at the end of the log indicates when the job completed. The job return code indicates if the job completed successfully.

A sample job log is shown in the following figure.

Figure 1   Sample job log

```
********************* Top of Data ********************************
25 Apr 2010 15:56:54 - H700INS3 JOB16690 STARTED
Job Step ACCPTCHK.SMPIOA, CC=12
*****************************************************************
Start Analyzing: Step=ACCPTCHK.SMPIOA DD=INDD1
GIM24801S ** NO SYSMODS SATISFIED THE OPERANDS SPECIFIED ON THE
ACCEPT COMMAND.
* No Applicable PTFs is Acceptable. Step Rc = 04
*****************************************************************
ANALYSIS Complete for step ACCPTCHK.SMPIOA STEPCC=(04)
25 Apr 2010 15:57:04 - H700INS3 JOB16690 COMPLETED - JOBRC(00)
********************* Bottom of Data ****************************
```

G Product packaging

General software packaging

This version is packaged as a pre-installed SMP/E environment containing three SMP/E zones: global, target and distribution. It supports the use of any one of the following installation modes for the SMP/E CSI:

- a new CSI file loaded with the global, target and distribution zones

- an existing global zone for the IOA global zone and two new CSI files, one for the target zone and one for the distribution zone

- an existing CSI file for all three zones

   The IOA global zone is added to the existing global zone, while the target and distribution zones form separate entities in the file.

Maintenance is performed using PTFs containing object replacement elements.

Basic functional components

The products in this version are packaged as different functional components as listed in the following table. IOA is the base component for all INCONTROL products.

Table 1   INCONTROL Version 9.0.00 Functional Components

FMID	Product
IOA9000	Version 9.0.00 Shared Routines, Samples, and so on
IOA900C	Version 9.0.00 Common Code.
CTM9000	CONTROL-M and CONTROL-M/Restart version 9.0.00 Modules and Samples
CTG9000	CONTROL-M NJE GATEWAY version 9.0.00 Modules
CTD9000	CONTROL-D and CONTROL-V version 9.0.00 Modules and Samples
CTO9000	CONTROL-O version 9.0.00 Modules and Samples
CTB9000	CONTROL-M/Analyzer version 9.0.00 Modules and Samples
CTT9000	CONTROL-M/Tape version 9.0.00 Modules and Samples
ECA9000	IOAGATE version 9.0.00 Modules and Samples

FMID	Product
IOA900E	Version 9.0.00 English Elements

This INCONTROL version is supplied with all the functions listed in the above tables installed.

Optional components

The following optional components are available:

Table 2   Optional Components

Component	Description
IOA900F	Version 9.0.00 French National Language Support Elements
IOA900G	Version 9.0.00 German National Language Support Elements
IOA900J	Version 9.0.00 Japanese National Language Support Elements
Conversion	CONTROL-M conversion tool

This INCONTROL version is supplied with all the functions listed in the above tables installed.

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