BMC is releasing version 2.0.00 of the BMC Intelligent Capping for zEnterprise (iCap) product.

iCap is available as a stand-alone product and as a component of the BMC MainView Cost Optimization for System z solution.

**Note**

Before you begin installation, BMC recommends that you check the Support Central website at http://www.bmc.com/support for:

- Updated product documentation (for example, flashes and technical bulletins)
- Product downloads, patches, and fixes (PTFs)
- Product availability and compatibility data

These release notes supplement and supersede the product documentation and discuss product enhancements and resolved problems.

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What's new

These topics describe the changes or new features in this release.

Monthly License Charge (MLC) cost awareness

New functionality allows you to consider cost when distributing Millions of Service Units (MSUs). This enhancement helps to ensure that MLC costs are not unintentionally increased by iCap actions.

The cost of MSUs can differ between LPARs. With this enhancement, iCap can now evaluate the relative cost of one LPAR or group against another LPAR or group. That is, iCap considers the relative cost of MSU on an LPAR or group when distributing MSUs.

When you build a policy, you can specify whether you want iCap to consider cost. iCap then calculates a cost limit for the policy, and ensures that the MLC costs incurred by the policy do not exceed this cost limit.

Importance-based dynamic entitlement adjustment

The new Dynamic Entitlement parameter allows iCap to favor LPARs and groups with high importance workloads when the combined 4HRA exceeds 95% of MSU limit.

iCap reduces the risk of impacting LPARs and groups with high importance workloads by assigning additional MSUs to these LPARs or groups. The additional MSUs are taken from LPARs and groups that are primarily running low importance workloads. The MSUs for the LPARs or groups running low importance work might drop below entitlement (which might result in capping); however, the high importance work running on that LPAR or group will not be capped.

You can enable or disable the Dynamic Entitlement parameter at the policy level. By default, dynamic entitlement is enabled.
New subsystem reporting views

New views SUBSYS and SUBSYSDE display information about the monthly peak 4HRA by subsystem.

The Subsystem view (SUBSYS) displays information about the subsystems that are running on managed LPARs, including the peak 4HRA for each subsystem and the number of LPARs that are currently running each subsystem. Subsystem detail view (SUBSYSDE) displays details about the peak 4HRA, per LPAR, and the current 4HRA for an LPAR.

Updated views supporting MLC cost awareness

Enhancements to the following iCap views support MLC cost awareness and dynamic entitlement adjustment:

- POLOVER
- GRPMEM
- LPARS
- GRPLPAR
- iCap log views

New fields on the POLOVER view

The POLOVER view includes the following new fields:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of Cost Entitlement</td>
<td>Cost limit for the policy</td>
</tr>
<tr>
<td>Dynamic Entitlement</td>
<td>Whether dynamic entitlement is being used</td>
</tr>
<tr>
<td>Manage Cost</td>
<td>Whether iCap is considering the cost limit when distributing MSUs</td>
</tr>
<tr>
<td>Combined 4HRA</td>
<td>Combined 4HRA for all of the managed LPARs and groups</td>
</tr>
<tr>
<td>Combined 4HRA%</td>
<td>Percentage of MSU limit used by the combined 4HRA for the policy</td>
</tr>
<tr>
<td>Cap%</td>
<td>During the current sample period, the percentage of elapsed time that the LPAR or group was capped</td>
</tr>
<tr>
<td>MSU Cost</td>
<td>Relative cost of one MSU on an LPAR or group</td>
</tr>
<tr>
<td></td>
<td>This value is shown in cost units. A cost unit can represent any monetary value, or it can be a relative value.</td>
</tr>
<tr>
<td>Cost Entitlement</td>
<td>Number of cost units to which an LPAR or group is entitled</td>
</tr>
<tr>
<td>Cost Limit%</td>
<td>Percentage of the cost limit that an LPAR or group is using</td>
</tr>
</tbody>
</table>
### New field on the GRPMEM and LPARS views

The GRPMEM and LPARS views now include the **SS Map** and **Cap%** fields. The **SS Map** field lists the subsystems that are running on an LPAR or group.

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**Note**

The GRPLPAR view also includes the **SS Map** field.

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### New fields on iCap log views

The iCap log views include the following new fields:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Limit ForPas</td>
<td>Maximum number of cost units that the policy can use</td>
</tr>
<tr>
<td>Current Cost Units Used</td>
<td>Amount of cost units currently being used</td>
</tr>
<tr>
<td>LPAR-Group Cost Entitl</td>
<td>Number of cost units to which an LPAR or group is entitled</td>
</tr>
<tr>
<td>LPAR-Group MSU Cost</td>
<td>Relative cost of one MSU on the LPAR or group</td>
</tr>
</tbody>
</table>
**Identification of non z/OS LPARs**

iCap manages only LPARs that run on an IBM z/OS system. Previously, if no policy was specified, iCap would list all LPARs and capacity groups running on the system, including z/OS and non z/OS LPARs. iCap now uses the Base Control Program Internal Interface (BCPii) service to identify the host operating system for an LPAR. Therefore, LPARs that are not running on z/OS are excluded from iCap views.

**Storage of peak combined 4HRA across iCap sessions**

iCap now retains the peak combined 4HRA between sessions. When the iCap master PAS terminates, iCap retains the value for the peak combined 4HRA. This value is then available when the master PAS is restarted.

*Note*

The peak combined 4HRA is reset at midnight on the second day of each month.

**New alarms to indicate when critical work is at risk**

New alarms on the POLOVER view alert you when critical work is at risk. The alarms also specify steps you can take to mitigate the risk.

**New options for restoring DCs and GCLs**

The new RESTORE parameter allows you to change how iCap restores defined capacities (DCs) and group capacity limits (GCLs) when the PAS terminates, a new policy is activated, or iCap leaves manage mode.

Previously, iCap always restored DCs and GCLs to the values they had when the master PAS initialized. The RESTORE parameter continues to offer that option (via the default RESTORE=YES) while also offering these new options:

- **RESTORE=NO** leaves DCs and GCLs as they were when iCap stopped managing the LPAR or group, or the PAS terminated.
- **RESTORE=ZERO** sets DCs to 0 and GCLs to the value they had when the PAS initialized.
- **RESTORE=ENT** sets the DC and GCL values based on entitlement.
Ability to specify how often to run the assessor

A new parameter, ADJTIME, lets you specify how often to run the assessor and, therefore, how often the assessor calls the Hardware Management Console (HMC) interface.

iCap makes changes to the HMC via the BCPii each time that iCap adjusts an LPAR’s DC or adjusts the GCLs. These changes are time-consuming, and access to the HMC is limited while the changes are being processed. The processing time can also increase based on the number of LPARs and GCLs that iCap is managing.

The new ADJTIME parameter lets you specify how often (in minutes) to run the assessor. By using ADJTIME, you can specify the time interval for the assessor to run based on the number of LPARs and GCLs that iCap is managing, therefore reducing the amount of time that HMC access is limited. The default value for ADJTIME is 1.

BMC Documentation Center changes

The primary BMC Documentation Center is now available without a support login. This center offers:

- Documentation and Quick Courses for all products except Cost Optimization products
- Messages for all products, including Cost Optimization products

A new, secured Cost Optimization Documentation Center offers documentation and Quick Courses for the following products:

- BMC Application Accelerator for IMS
- BMC Cost Analyzer for zEnterprise (CAzE)
- BMC Intelligent Capping for zEnterprise (iCap)
- BMC Subsystem Optimizer for zEnterprise (Subzero)
**Note**
You must log in using your BMC Support ID to access the Cost Optimization Documentation Center.

To access the Documentation Centers, go to:
- BMC Documentation Center
- BMC Cost Optimization Documentation Center

**Installation**

Use the following procedure to install iCap 2.0 via the Installation System:

1. Download the latest version of the Installation System:
   - a. Go to [http://www.bmc.com/support/reg/installation-system.html](http://www.bmc.com/support/reg/installation-system.html), or navigate to the "BMC data management for DB2 and IMS, MainView, and cost optimization products installation and maintenance" section of the BMC Support Central website. A BMC support user ID and password are required.
   - b. Click **Installation**.
   - c. Click the method you want to use to obtain the Installation System.
   - d. Follow the procedures to install iCap 2.0.

   **Note**
   BMC recommends updating the Installation System each time you use it to ensure that you have the most recent information. To do so, on the Installation System Main Menu, select **Check for Installation System Update**. For additional information, see the Installation System documentation.
   To request physical shipments, contact your BMC sales representative. Contact information is available on the BMC website.

2. If you obtained the Installation System from a physical shipment (from a DVD instead of FTP or a web browser), obtain and apply the following PTFs

   **Note**
   If you obtained the Installation System from FTP or a browser in Step 1, you can skip this step because the enhancements are already installed.
BMC recommends using BMC Internet Service Retrieval (ISR) to obtain PTFs. For information about ISR, see the maintenance information in the *Installation System Reference Manual*.

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

iCap is installed by using the Installation System. This section contains installation information that supplements or supersedes the information in the Installation System documentation.

### Requirements

For software, hardware, and other requirements, see the Installation System documentation.

### Installation changes

For information about installation changes, see the Installation System release notes.
Migration considerations

When you migrate the software, consider the following items:

- You must upgrade the iCap master PAS before you upgrade the iCap agent PASs.

- You can run a version 2.0 master PAS with version 1.1 agent PASs. However, the agent PASs must be at PUT level BQY0648.

  **Note**
  Capping and subsystem information is unavailable for LPARs or groups that are running on version 1.1 PASs.

- BMC recommends that you reallocate all version 1.1 history files before you upgrade to iCap version 2.0.

FMID and version information

This release of iCap uses version 2.4.20 of the Installation System.

**Note**
If you have a later version of the Installation System, use that version to install the solution, product, or component.

During installation, the following versions and SMP/E FMIDs are installed:

<table>
<thead>
<tr>
<th>FMID</th>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASAR71C</td>
<td>SAS_C and SAS_C++ V71</td>
<td>7.1.00</td>
</tr>
<tr>
<td>ASAR71D</td>
<td>SAS_C V71</td>
<td>7.1.00</td>
</tr>
<tr>
<td>BBACM20</td>
<td>COMMON release elements</td>
<td>2.0.00</td>
</tr>
<tr>
<td>BBASC70</td>
<td>SAS_C V70B</td>
<td>7.0.00</td>
</tr>
<tr>
<td>BBBBX16</td>
<td>BBX Subsystem Services</td>
<td>1.6.00</td>
</tr>
<tr>
<td>BBGAD41</td>
<td>DYNAMIC AREA MANAGER</td>
<td>4.1.00</td>
</tr>
<tr>
<td>BBIIS25</td>
<td>BBQ Interval Services</td>
<td>2.5.00</td>
</tr>
<tr>
<td>BBISS26</td>
<td>BBI SUBSYSTEM 26</td>
<td>2.6.00</td>
</tr>
<tr>
<td>BBLBQ11</td>
<td>Mainview VP Common Code</td>
<td>1.1.00</td>
</tr>
<tr>
<td>BBTTC11</td>
<td>MainView TCP/IP Interface</td>
<td>1.1.00</td>
</tr>
<tr>
<td>BBYZX33</td>
<td>BASE TECHNOLOGY STUBS</td>
<td>3.3.00</td>
</tr>
<tr>
<td>LOSZ120</td>
<td>RTCS C Library</td>
<td>2.0.00</td>
</tr>
<tr>
<td>FMID</td>
<td>Product</td>
<td>Version</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>LSCR50I</td>
<td>SAS_C V5</td>
<td>5.0.00</td>
</tr>
<tr>
<td>ZBBA220</td>
<td>Product Customization</td>
<td>2.2.00</td>
</tr>
<tr>
<td>ZBBM610</td>
<td>MainView Infrastructure</td>
<td>6.1.00</td>
</tr>
<tr>
<td>ZBMR15E</td>
<td>ISR External Routines</td>
<td>1.5.00</td>
</tr>
<tr>
<td>ZBST100</td>
<td>BMC Support Tool</td>
<td>1.0.00</td>
</tr>
<tr>
<td>ZDYC11D</td>
<td>BMC Intelligent Capping for zEnterprise</td>
<td>2.0.00</td>
</tr>
<tr>
<td>ZDZS17C</td>
<td>Discovery for z/OS Data Collector</td>
<td>1.7.00</td>
</tr>
<tr>
<td>ZIMZ74M</td>
<td>Integration Manager for z/OS</td>
<td>7.4.00</td>
</tr>
<tr>
<td>ZIMZ740</td>
<td>IMZ Release FMID</td>
<td>7.4.00</td>
</tr>
<tr>
<td>ZMCV100</td>
<td>Customization Generation</td>
<td>1.0.00</td>
</tr>
<tr>
<td>ZOSZ120</td>
<td>RTCS Kernel</td>
<td>2.0.00</td>
</tr>
<tr>
<td>ZPWD330</td>
<td>BMC Password Security System</td>
<td>3.3.00</td>
</tr>
<tr>
<td>ZUIM540</td>
<td>UIM User Interface Middleware</td>
<td>5.4.00</td>
</tr>
<tr>
<td>ZUSC540</td>
<td>UIM Common Services</td>
<td>5.4.00</td>
</tr>
<tr>
<td>ZUWS540</td>
<td>UIM Web Services</td>
<td>5.4.00</td>
</tr>
</tbody>
</table>

The preceding table contains the FMIDs for iCap only. You can also obtain product, solution, and component information (FMIDs, codes, and versions) in the following ways:

- View the generated installation JCL member $176APLF.
  
  To search the file, search on the word **FORFMID**.

- View one of the following reports:
  
  — `bxx_ozi_tape_product_list.txt` lists FMIDs for cost optimization products, products shared across product lines, and infrastructure products.

  — `cxx_ozi_tape_product_list.txt` lists FMIDs for BMC products for IBM DB2.

  — `ixx_ozi_tape_product_list.txt` lists FMIDs for BMC products for IBM IMS.

  — `mxx_ozi_tape_product_list.txt` lists FMIDs for MainView products.

To access the reports on the BMC electronic software distribution (ESD) site, take the following steps:

1. Go to [http://www.bmc.com/support/reg/installation-system.html](http://www.bmc.com/support/reg/installation-system.html), or navigate to the “BMC data management for DB2 and IMS, MainView, and cost
maintenance, ensure that you have successfully run the $176APLF job to ensure that all required FMIDs are applied.

Support status

You can find the support status for specific product versions on the Support Central website. Selecting a product from the “A – Z Supported Product List” shows:

- All versions of the product and their current support levels (full or limited)
- Dates on which support ends

For more information about the latest support policies, see the Support Central website at http://www.bmc.com/support.

Product documentation

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

- Link to the BMC Documentation Center to browse documentation sets (http://www.bmc.com/available/documentation-center.html or, for secured documentation sets, http://www.bmc.com/available/documentation-center-secure.html)
■ View Quick Course videos (short overviews of selected product concepts, tasks, or features), which are available from the following locations:

— Documentation Center (primary center and secured center)

— Support Central (at http://www.bmc.com/support/mainframe-demonstrations)

— BMC Mainframe YouTube channel (https://www.youtube.com/user/BMCSoftwareMainframe)

■ View individual product documents (books and notices) within the “A – Z Supported Product List” (https://webapps.bmc.com/support/faces/az/supportlisting.jsp)

You can order hardcopy documentation from your BMC sales representative or from the support site. You can also subscribe to proactive alerts to receive e-mail messages when notices are issued.

Customer support

If you have problems with or questions about a BMC product, see the support website at http://www.bmc.com/support. You can view or download product documents, find answers to frequently asked questions, and download products and maintenance. If you do not have access to the web and you are in the United States or Canada, contact Customer Support at 1 800 537 1813. Outside the United States or Canada, contact your local BMC office or agent.

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