IBM z Systems Collocated Application Pricing for z/OS can improve the cost of deploying new z/OS applications

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At a glance

IBM z Systems™ Collocated Application Pricing (zCAP) for z/OS:
- Enhances sub-capacity pricing to provide a more flexible software pricing model for deploying new applications
- Applies only to new applications on all IBM zEnterprise® (zEC12, zBC12, z196, and z114), z13™, or future follow-on servers
- Allows workloads to be priced as if they are running in a dedicated environment while technically integrated with other workloads
- Mitigates the impact of zCAP-eligible applications on the reported MSUs for other sub-capacity middleware running on the same machine

Overview

z Systems™ Collocated Application Pricing for z/OS can improve the cost of deploying new z/OS applications. zCAP allows new applications to be deployed in existing LPARs yet be priced as if running in dedicated LPARs. This enhancement to sub-capacity reporting removes up to 100% of the new application’s general purpose processor time from the machine utilization values reported for other middleware, and up to 50% for z/OS. This enables you to essentially pay for the new application’s direct usage of the IBM middleware that manages the processing of the new application, such as CICS® or WebSphere® Application Server, while mitigating the impact on the reported MSUs for other programs running in the same partition.

If using certain eligible programs to run a new application, contact your sales team to help you understand how you can meet the requirements for Collocated Application Pricing for z/OS. For a list of the programs eligible to define the zCAP adjustment, refer to the Defining Programs in the Description section. A zCAP Defining Program is the IBM middleware program that represents the application server, messaging environment, or database management system that manages the processing for the new application, such as CICS®, DB2® or IMS™, MQ, or WebSphere Application Server.

Key prerequisites

Prerequisites for enabling zCAP:
- Deploy a new z/OS application not currently running in a client's environment on any z Systems server, leveraging one of the zCAP Defining Programs. (IBM must approve that the workload qualifies as a new application.)
• Run one or more of the zCAP Defining Programs on a zEnterprise, z13, or future follow-on server that has implemented sub-capacity pricing under Advanced Workload License Charge (AWLC), Advanced Entry Workload License Charge (AEWLC), or System z™ New Application License Charges (zNALC) terms and conditions, as specified in the Addendum for z Systems Collocated Application Pricing to the AWLC, AEWLC, and zNALC contract attachments.

• Run z/OS V1 (5694-A01) or z/OS V2 (5650-ZOS).

• Agree to measure and provide the required CPU time attributable to the zCAP Defining Program on a monthly basis. IBM must approve the process for capturing CPU time that will be used for monthly reporting.

• Install and use the Mobile/zCAP Reporting Tool (MWRT) on a Microsoft™ Windows-based system.

• Run MWRT for each sub-capacity reporting period and submit the results to IBM on a monthly basis instead of the Sub-Capacity Reporting Tool (SCRT) results.

### zCAP billing effective date

Sub-capacity licenses reflecting the zCAP adjustment cannot be billed until you submit an MWRT sub-capacity report containing programs with MSUs adjusted by zCAP. The release of MWRT with zCAP support will be available on April 28, 2015.

### Description

zCAP provides an enhanced way of reporting z/OS system utilization, which can improve the cost of deploying new applications processed by select zCAP Defining Programs when running in the same LPAR as existing applications. A new application is defined as an application not currently running in a client's z Systems environment. Growth in existing applications or re-architecting of existing applications does not qualify for zCAP.

Clients must be able to track and report the general purpose processor time (CPU Time) for the new application's defining program and report those values in a predefined format to IBM each month in order to take advantage of this pricing offering. MWRT will use the reported zCAP Defining Program CPU time to adjust the 4-hour rolling average sub-capacity MSUs for sub-capacity eligible programs on a given machine.

By pricing zCAP Defining Programs as if they were running in a dedicated LPAR, as well as mitigating the impact of the new application's CPU time on the peak MSU values reported for other programs on the same machine, zCAP provides a more cost effective model for deploying new applications.

**Determining eligibility for IBM z Systems Collocated Application Pricing**

zCAP requires the implementation of sub-capacity AWLC, sub-capacity AEWLC, or sub-capacity zNALC.
IBM z Systems Collocated Application Pricing Defining Programs

<table>
<thead>
<tr>
<th>Program ID</th>
<th>Program name</th>
</tr>
</thead>
<tbody>
<tr>
<td>5655-S97</td>
<td>IBM CICS Transaction Server for z/OS, V4</td>
</tr>
<tr>
<td>5655-Y04</td>
<td>CICS Transaction Server for z/OS, V5</td>
</tr>
<tr>
<td>5722-DFJ</td>
<td>CICS Value Unit Edition (VUE) V5</td>
</tr>
<tr>
<td>5635-DB2</td>
<td>IBM DB2 V9 for z/OS</td>
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<tr>
<td>5605-DB2</td>
<td>DB2 V10 for z/OS</td>
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<tr>
<td>5615-DB2</td>
<td>DB2 V11 for z/OS</td>
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<tr>
<td>5697-P12</td>
<td>DB2 VUE V9</td>
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<td>DB2 11 VUE</td>
</tr>
<tr>
<td>5635-A02</td>
<td>IBM IMS V11</td>
</tr>
<tr>
<td>5635-A03</td>
<td>IMS V12</td>
</tr>
<tr>
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<td>5655-DSQ</td>
<td>IMS Database VUE V12</td>
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<td>5655-DSP</td>
<td>IMS Database VUE V13</td>
</tr>
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<td>5655-PM1</td>
<td>IMS Transaction Manager VUE V12</td>
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<td>5655-PM2</td>
<td>IMS Transaction Manager VUE V13</td>
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<td>5655-L82</td>
<td>IBM WebSphere MQ for z/OS, V6</td>
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<td>5655-R36</td>
<td>WebSphere MQ for z/OS, V7</td>
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<td>WebSphere MQ for z/OS, V8</td>
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<tr>
<td>5655-VUE</td>
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<td>5655-VU8</td>
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<tr>
<td>5655-N02</td>
<td>WebSphere Application Server for z/OS, V7</td>
</tr>
<tr>
<td>5655-W65</td>
<td>WebSphere Application Server for z/OS, V8</td>
</tr>
</tbody>
</table>

Mobile/zCAP Workload Reporting Tool (MWRT)

When implementing zCAP, you will be required to use an enhanced version of MWRT for all machines using zCAP. For machines that do not use zCAP, you may continue to use SCRT. If you leverage both Mobile Workload Pricing (MWP) and zCAP on the same machine, you must use the enhanced version of MWRT for both offerings. The new release of MWRT containing the zCAP functionality will be available for download on April 28, 2015.

Calculating the billable MSUs for other sub-capacity eligible programs running in the same LPARs as zCAP Defining Programs

MWRT will determine the billable MSU peak for a given sub-capacity-eligible program running on a machine according to the following methodology:

1. Calculate the 4-hour rolling average of the reported zCAP Defining Program general purpose processor time.
2. Subtract 100% of those values from the traditional sub-capacity MSUs for all other sub-capacity-eligible middleware programs on that server on an hour-by-hour basis, per LPAR.
3. Subtract 50% of those values from the traditional sub-capacity MSUs for z/OS, on an hour-by-hour basis, per LPAR.
4. Sum the adjusted program values for the same hour across all of the LPARs, and any z/OS guest systems running under z/VM®, in which the program runs to create an adjusted sub-capacity value for the program, for the given machine, each hour.

Pricing for the zCAP Defining Program itself will depend on the use case.
**Use Case #1: Pricing methodology when the zCAP Defining Program is new to an LPAR**

When a zCAP Defining Program is deployed in an LPAR where that same program is not already running, a simple comma separated value (CSV) file must be created that provides the program number for the defining program, the machine type and serial number, and the name of the LPAR(s) where that program runs. The CSV file must be loaded into MWRT each month and the tool will use the defining program's SMF89 data for pricing purposes:

1. Pricing for the zCAP Defining Program in the LPAR: The MSUs used for pricing will be retrieved from that program's SMF89 Type-1 record. SMF89 Type-1 records contain a program's specific CPU usage time, not the LPAR utilization value.
2. Pricing for the other middleware in the LPAR: 100% of the zCAP Defining Program's SMF89 MSUs will be removed from the LPAR utilization values for those products, each hour, as part of the 4-hour rolling average (4HRA) calculation.
3. Pricing for z/OS in the LPAR: 50% of the zCAP Defining Program's SMF89 MSUs will be removed from the LPAR utilization values for z/OS, each hour, as part of the 4-hour rolling average (4HRA) calculation.

Note: If using DB2 as a defining program, the following parameter must be set in the DSNZPARMs: SMF89=YES

If changes are made to the configuration of the LPAR(s), which cause the zCAP Defining Program deployment scenario to align with Use Case #2 instead of Use Case #1, then clients must meet the reporting requirements as described in Use Case #2, including the capture and submission of the CPU time attributable only to the new application. An example of such a change would be a scenario where a non-zCAP workload, that also utilizes the zCAP Defining Program, is added to the same LPAR.

**Use Case #2: Pricing methodology when the zCAP Defining Program is already running in the LPAR**

When a new instance of a zCAP Defining Program is deployed in an LPAR where that same program is already running, a CSV file must be created to capture only the CPU time used by the defining program in support of the new application. This is similar to the tracking requirements for MWP, but applies only to new applications, not existing transactions. This may require one or more dedicated address spaces for the new application in order to capture and record the CPU time attributable only to that new application. SMF 30 records provide a facility for tracking address space CPU time. Pricing for this use case is as follows:

1. Pricing for the zCAP Defining Program in the LPAR: The MSUs used for pricing will be the total reported MSU peak for that program (according to the standard sub-capacity LPAR utilization value) including the new application CPU time as the new application will simply represent incremental MSUs to an existing program.
2. Pricing for the other middleware in the LPAR: 100% of the incremental zCAP Defining Program MSUs, as reported in the CSV file, will be removed from the LPAR utilization values for those products, each hour, as part of the 4HRA calculation.
3. Pricing for z/OS in the LPAR: 50% of the incremental zCAP Defining Program MSUs, as reported in the CSV file, will be removed from the LPAR utilization values for z/OS, each hour, as part of the 4HRA calculation.

Note: If using DB2 as a defining program, the following parameter must be set in the DSNZPARMs: SMF89=YES

Similar to Mobile Workload Pricing, this ensures that the monthly MSU peak for other middleware will not increase simply because a new application was deployed in the same LPAR. However, the MSU peaks for the other middleware programs may increase as a result of interaction with the new application.
For any IPLA Reference-Based programs with a zCAP Defining Program as their Parent which are purchased in support of an approved zCAP application and are not running elsewhere in the machine or Sysplex, the required license capacity will be referenced only to the MSUs for the zCAP Defining Program associated with the zCAP application.

**Data collection requirements**

You are required to collect SMF 70 and SMF 89 records for all LPARs on all machines each month. In addition, you must collect and retain the source data for the zCAP Defining Programs that will be used in monthly reporting. The SMF records and zCAP Defining Program CPU time (CSV files) must be retained for six months after the billing period for auditing purposes.

You are responsible for processing your zCAP Defining Program CPU time into a predefined format to be loaded into MWRT for each sub-capacity reporting period. The data must consist of general purpose processor CPU seconds for the zCAP Defining Program summarized by hour by LPAR for all machines processing zCAP data. Detailed instructions will be available in the MWRT user’s guide.

**Monthly reporting process**

When utilizing zCAP, you are responsible for the following reporting requirements each month:

- **When the zCAP Defining Program is net new to the LPAR:**
  - Produce a CSV file showing the program number of the defining program, the machine type and serial number, and the name of the LPAR(s) where the program runs.
  - Load the resulting data file along with the SMF 70 and SMF 89 records into MWRT each month (requires FTP of the files from the z Systems server to MWRT running on a Microsoft Windows™ machine).
  - Run MWRT and submit the results to IBM for each sub-capacity reporting period.

- **When the zCAP Defining Program represents a new instance of the same program already running in the LPAR:**
  - Track the zCAP Defining Program CPU time attributable only to the new application, on an hourly basis per LPAR.
  - Produce a CSV file showing the zCAP Defining Program CPU seconds by hour and LPAR.
  - Load the resulting data file along with the SMF 70 and SMF 89 records into MWRT each month (requires FTP of the files from the z Systems server to MWRT running on a Microsoft Windows machine).
  - Run MWRT and submit the results to IBM for each sub-capacity reporting period.

**Terms and conditions**

Your agreement to zCAP terms and conditions is required for the receipt of zCAP benefits. You must have a valid license to authorized IBM z Systems Collocated Application Pricing Defining Programs installed on zEnterprise, z13, or future follow-on servers that have implemented sub-capacity pricing. All terms and conditions associated with zCAP sub-capacity pricing, and the IBM Customer Agreement apply.

Agreement to the terms of the IBM Addendum for z Systems Collocated Application Pricing (Z126-6861) is required.

AWLC, AEWLC, or zNALC terms and conditions described in the following documents also apply:

- IBM Attachment for IBM System z Advanced Workload License Charges (Z125-8538)
• IBM System z Advanced Workload License Charges Exhibit (Z125-8539)
• IBM Attachment for IBM System z Advanced Entry Workload License Charges (Z125-8755)
• IBM Attachment for zNALC License Charges on IBM System z (Z125-7454)
• IBM Exhibit for zNALC License Charges on IBM System z (Z125-7455)

Announcement countries

All European, Middle Eastern, and African countries except Islamic Republic of Iran, Sudan, and Syrian Arab Republic.

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