



IBM z Systems Workload Pricing for Cloud for z/OS can reduce the cost of growth for public cloud transactions

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Overview

IBM z Systems™ Workload Pricing for Cloud (zWPC) for z/OS^(R) can reduce the cost of growth for new public cloud workload transactions processed by programs such as CICS^(R), IMS™, and DB2^(R) for z/OS. This enhancement to sub-capacity reporting can mitigate the impact of new public cloud workloads on z/OS sub-capacity license charges, specifically in the cases where higher public cloud workload transaction volumes may cause a spike in machine utilization. This can normalize the rate of transaction growth and reduce the reported peak capacity values used for sub-capacity charges.

If using certain eligible programs to process new transactions coming into the z Systems™ server from a public cloud, contact your sales team to help you understand how you can meet the tracking requirements for public cloud workloads. zWPC does not require you to isolate the public cloud work in separate partitions, but rather is an enhanced way of reporting. The z/OS Workload Manager (WLM) is enhanced to allow clients to use WLM classification rules to distinguish cloud workloads, easing the data collection requirements for public cloud workload transactions.

For a list of the programs eligible to define the zWPC adjustment, refer to **Workload Pricing for Cloud Defining Programs** in the [Description](#) section.

Key prerequisites

Prerequisites for enabling IBM z Systems Workload Pricing for Cloud (zWPC) for z/OS include the following:

- Deploy a new application originating from a public cloud that connects to a z/OS -based transactional service and/or data source via a REST or SOAP web service.
Note: IBM^(R) must approve that the workload qualifies as a new application from a public cloud.
- Run one or more of the Workload Pricing for Cloud Defining Programs on a zEnterprise^(R) or later server that has implemented sub-capacity pricing under AWLC, AEWLC, System z^(R) New Application License Charges (zNALC), or Country Multiplex Pricing (CMP) terms and conditions, as specified in the IBM Addendum for z Systems Workload Pricing for Cloud (Z126-7433) contract.
- Run z/OS V1 (5694-A01) or z/OS V2 (5650-ZOS).
- Agree to measure and provide the required public cloud transaction data on a monthly basis, inclusive of CPU seconds. IBM must approve the process used to capture the records for public cloud transactions that will be used for monthly reporting.

- Install and use the Sub-Capacity Reporting Tool (SCRT) Version 24 Release 10.0 or later.
- Run SCRT for each sub-capacity reporting period and submit the results to IBM on a monthly basis.

zWPC billing effective date

Sub-capacity licenses including the zWPC adjustment cannot be billed until an SCRT V24.10.0 sub-capacity report containing programs with MSUs adjusted by zWPC is submitted. SCRT V24.10.0 availability is planned for October 11, 2016.

The first SCRT sub-capacity report containing MSUs adjusted by zWPC can be generated on November 2, 2016. This report, for data collected during the October reporting period, may be submitted between November 2 and November 9, 2016, and will have a billing effective date of December 1, 2016. Therefore, the earliest billing effective date for programs with MSUs adjusted by zWPC is December 1, 2016.

Description

zWPC provides an enhanced way of reporting z/OS system utilization, which can improve price/performance for sub-capacity eligible z/OS programs when running in the same LPAR as new public cloud workloads processed by select Workload Pricing for Cloud Defining Programs. Public cloud workloads are defined as the transactions processed by a named public cloud application, or transactions that can be identified as originating from a public cloud offering, such as IBM Bluemix^(R), Amazon Web Services, MicrosoftTM Azure, and more.

You must be able to track and report the general purpose processor times (CPU times) for new public cloud transactions and report those values in a predefined format to IBM each month in order to take advantage of this pricing offering. Clients may be able to use WLM classification rules to distinguish cloud workloads and to collect the CPU time of certain zWPC Defining Programs in SFM 70 records. See the **Data collection requirements** section. SCRT will use the reported public cloud transaction data to adjust the 4-hour rolling average sub-capacity MSUs for sub-capacity eligible programs on a given machine.

By mitigating the impact of public cloud transactions on the peak MSU values reported for the programs on a given machine, zWPC can provide a benefit when higher public cloud transaction volumes cause a spike in machine utilization.

Determining eligibility for IBM z Systems Workload Pricing for Cloud

zWPC requires the implementation of sub-capacity AWLC, sub-capacity AEWLC, sub-capacity zNALC, or Country Multiplex Pricing (CMP).

Workload Pricing for Cloud Defining Programs

Program ID	Program
5655-S97	IBM CICS Transaction Server for z/OS, V4
5655-Y04	CICS Transaction Server for z/OS, V5
5722-DFJ	CICS Value Unit Edition (VUE) V5
5635- DB2	IBM DB2 V9 for z/OS
5605- DB2	DB2 V10 for z/OS
5615- DB2	DB2 V11 for z/OS
5697-P12	DB2 VUE V9
5697-P31	DB2 10 VUE
5697-P43	DB2 11 VUE
5635-A02	IBM IMS V11
5635-A03	IMS V12

Program ID	Program
5635-A04	IMS V13
5635-A05	IMS V14
5655-DSQ	IMS Database VUE V12
5655-DSM	IMS Database VUE V13
5655-DSE	IMS Database VUE V14
5655-TM1	IMS Transaction Manager VUE V12
5655-TM2	IMS Transaction Manager VUE V13
5655-TM3	IMS Transaction Manager VUE V14
5655-L82	IBM WebSphere ^(R) MQ for z/OS, V6
5655-R36	WebSphere MQ for z/OS, V7
5655-W97	IBM MQ for z/OS, V8
5655-MQ9	IBM MQ for z/OS V9
5655-VUE	WebSphere MQ VUE V7
5655-VU8	IBM MQ VUE V8
5655-VU9	IBM MQ VUE V9
5655-AV1	IBM MQ Advanced for z/OS VUE V9
5655-N02	IBM WebSphere Application Server for z/OS, V7
5655-W65	WebSphere Application Server for z/OS, V8
5655-WAS	WebSphere Application Server for z/OS, V9

Sub-Capacity Reporting Tool (SCRT)

The Sub-Capacity Reporting Tool (SCRT) Version 24 Release 10.0 is planned to be available October 11, 2016 with the addition of new functionality for zWPC.

Calculating the billable MSUs for sub-capacity eligible programs

SCRT will calculate the 4-hour rolling averages of the reported public cloud transaction general purpose processor time consumed by the Workload Pricing for Cloud Defining Programs and subtract 60% of those values from the traditional sub-capacity MSUs for all sub-capacity eligible programs running in the same LPAR(s) as the public cloud workloads, on an hour-by-hour basis, per LPAR. The program values for the same hour are summed across all of the LPARs (and any z/OS guest systems running under z/VM^(R)) in which the program runs to create an adjusted sub-capacity value for the program, for the given machine, for each hour. SCRT will determine the billable MSU peak for a given program on a machine using the adjusted MSU values.

Data collection requirements

You are required to collect SMF 70 and SMF 89 records for all machines each month as a normal part of sub-capacity reporting. In addition, you must use one of the following methods to identify the CPU time used by each zWPC Defining Program processing public cloud workload transactions:

WLM method

A Small Programming Enhancement (SPE) was made to z/OS V2.1 in December, 2015 to provide the new capability in the Workload Manager (WLM) and other system components to allow you to use WLM classification rules to identify mobile workload transactions. This same support will also be available for use in tracking public cloud workload transactions. New attributes have been added to classification rules to allow WLM to accumulate the mobile and/or cloud workload transaction CPU time in the LPAR during that interval. The CPU time is stored in new fields in the SMF 70 record, and SCRT V23.13.0 (or later) recognizes and processes the mobile workload transaction data. SCRT V24.10.0, planned to be available on October 11, 2016, will support the classification and reporting of public cloud workload transactions. Availability of the new data collection functionality is as follows:

- z/OS support is available in z/OS V2.1 with APAR OA47042 for WLM, APAR PI47638 for z/OSMF, and APAR OA48466 for RMF™.
- CICS support is available in CICS TS V5.3.
- IMS Transaction Manager support is available in IMS V14 with APAR PI46933 and APAR PI51948.
- DB2 support is available in supported versions of DB2.
- WebSphere Application Server support is available in supported versions.

CSV file method

In cases where WLM classification rules for cloud transactions are not available, you are responsible for preprocessing your public cloud workload transaction data into a predefined format to be loaded into SCRT for each sub-capacity reporting period. The data must consist of general purpose processor CPU seconds for public cloud workload transactions summarized by hour by LPAR for all machines processing cloud transactions. Detailed instructions will be available in the [SCRT V24.10.0 Users Guide](#).

With either data collection method, you must collect and retain the source data for the public cloud workload transactions that will be used in monthly reporting. Both methods of data collection and reporting are supported and you may choose to use one method for one zWPC Defining Program and the other method for a different zWPC Defining Program at the same time. The SMF records and public cloud workload transaction data must be retained for six months after the billing period for auditing purposes.

Monthly reporting process

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

- For zWPC Defining Programs using the WLM data collection method:
 - Run supported releases and service levels of the programs described in the **Data collection requirements** section.
 - Use WLM to classify public cloud workload transactions.
 - Load the SMF 70 and SMF 89 records into SCRT each month.
- For zWPC Defining Programs not using the WLM data collection method:
 - Track public cloud transactions, including CPU seconds, per program on an hourly basis per LPAR.
 - Produce a comma-separated value (CSV) file showing public cloud transaction CPU consumption each month for each program.
 - Load the resulting data files along with the SMF 70 and SMF 89 records into SCRT each month.
- Run the SCRT Version 24 Release 10.0 or later and submit the results to IBM for each sub-capacity reporting period.

Terms and Conditions

The client's agreement to zWPC terms and conditions is required for the receipt of zWPC benefits. Client must have a valid license to IBM authorized Workload Pricing for Cloud Defining Programs installed on a zEnterprise or later server that has implemented sub-capacity pricing. All terms and conditions associated with zWPC sub-capacity pricing, and the IBM Client Agreement (or equivalent) apply.

Agreement to the terms of the IBM Addendum for z Systems Workload Pricing for Cloud (Z126-7433) and the Supplement to the Addendum for z Systems Workload Pricing for Cloud (Z126-7434) is required.

For clients with products licensed with AWLC, AEWLC, or zNALC charge metrics or subject to Country Multiplex Pricing (CMP), the terms and conditions as 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)
- IBM Attachment for County Multiplex Pricing (Z126-6965)

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Corrections

(Corrected on August 2, 2016)

A form number was corrected in the "Terms and Conditions" section.