Advanced Workload License Charges (AWLC)

Advanced Workload License Charges (AWLC) is a monthly license pricing metric designed to support today's on demand business requirements. AWLC may be applied to IBM z14 (z14), IBM z13 (z13), IBM zEnterprise EC12 (zEC12) and IBM zEnterprise 196 (z196) servers running z/OS or z/TPF in z/Architecture (64-bit) mode when stand-alone, or when in an actively coupled z/OS Parallel Sysplex, or when in a z/TPF Loosely Coupled Complex. IBM z13s (z13s), IBM zEnterprise BC12 (zBC12) and IBM zEnterprise 114 (z114) servers may have AWLC when in an actively coupled z/OS Parallel Sysplex or z/TPF Loosely Coupled Complex consisting entirely of z Systems or newer servers.

AWLC enables customers to:

- Grow hardware capacity without necessarily increasing your software charges
- Pay for key software, such as DB2, CICS, IMS, WebSphere MQ, and z/OS with LPAR-level granularity
- Experience a low cost of incremental growth
- Manage software cost by managing workload utilization

Once a customer chooses to adopt AWLC, then neither PSLC nor Usage License Charges (ULC) will apply. There are two types of charges involved: AWLC, which vary based upon server size and/or utilization, and Flat Workload License Charges (FWLC), a flat charge per server. AWLC apply to products such as z/OS, DB2, IMS, CICS, WebSphere MQ, and Lotus Domino. FWLC apply to legacy products such as less current compilers and older MVS/VM/VSE utilities. Once AWLC is adopted, applicable AWLC and FWLC charges are applied.

Advanced Workload License Charges Structure

(cumulative monthly pricing)

Base WLC	3 MSUs
Level 0	4 - 45 MSUs
Level 1	46 - 175 MSUs
Level 2	176 - 315 MSUs
Level 3	316 - 575 MSUs
Level 4	576 - 875 MSUs
Level 5	876 - 1315 MSUs
Level 6	1316 - 1975 MSUs
Level 7	1976+ MSUs

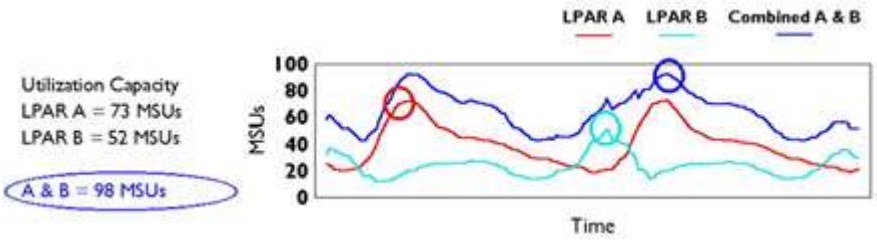
Customers may choose to implement AWLC in one of two ways:

- Full-Capacity AWLC - charges are based on the full server capacity where each AWLC product executes
- Sub-Capacity AWLC - charges are based on the utilization of the LPAR or LPARs where an AWLC product executes

Mechanics of Sub-Capacity AWLC

The graph below shows a z Systems server rated at 110 MSUs with Sub-Capacity AWLC. The machine is configured with two LPARs, LPAR A and LPAR B. The customer sees a highest observed rolling 4-hour

average for LPAR A at 73 MSUs. Accordingly, software running only in LPAR A would be charged at 73 MSUs. Likewise, LPAR B has a highest observed rolling 4-hour average of 52 MSUs. Accordingly, software running only in LPAR B would be charged at 52 MSUs. They do not have set a defined capacity or any LPAR cap for either LPAR A or LPAR B.



Software running in both LPARs, such as z/OS, would require the customer to examine the rolling 4-hour average utilization of the combined LPAR A & LPAR B, also shown on the graph. The combined LPAR utilization has a highest observed rolling 4-hour average of 98 MSUs and software running in both LPARs would be charged at 98 MSUs.

AWLC Technology Transition Offerings

Several AWLC Technology Transition Offerings are available for eligible Operating Systems Families (consisting of an operating system and its associated middleware programs) when running in a qualifying z Systems hardware environment. Eligibility is determined separately for each Operating System Family environment (whether stand-alone, aggregated actively coupled z/OS Parallel Sysplex, or aggregated z/TPF Loosely Coupled Complex).

- **Technology Update Pricing for the IBM z14 (TU5)** extends the software price/performance of the AWLC pricing metric for customers running on a stand-alone z14 server or in an aggregated Sysplex or Complex consisting exclusively of z14 servers.
- **Technology Update Pricing for the IBM z13 (TU3)** extends the software price/performance of the AWLC pricing metric for customers running on a stand-alone z13 server or in an aggregated Sysplex or Complex consisting exclusively of z13 or z13s servers.
- **Technology Update Pricing for AWLC (TU1)** extends the software price/performance of the AWLC pricing metric for customers running on a stand-alone zEC12 server or in an aggregated Sysplex or Complex consisting exclusively of zEC12 or zBC12 servers.
- **AWLC Transition Charges for Sysplexes (TC3)** provides a reduction in AWLC as customers upgrade to z13 or z13s servers within an aggregated Sysplex or Complex with a mix of z Systems server technologies including one or more z13 or z13s servers with one or more zEC12 or zBC12 servers.
- **AWLC Transition Charges for Sysplexes (TC2)** provides a reduction in AWLC as customers upgrade to zEC12 or later servers within an aggregated Sysplex or Complex with a mix of z Systems server technologies including one or more z13, z13s, zEC12, or zBC12 servers with one or more z196 or z114 servers.
- **AWLC Transition Charges for Sysplexes (TC1)** provides a reduction in VWLC as customers upgrade to z Systems servers within an aggregated Sysplex or Complex with a mix of z Systems server technologies including one or more z10 EC, z10 BC, z9 EC or z9 BC servers.

Note: zEC12 and zBC12 servers are not supported in an actively coupled Parallel Sysplex with z9 EC or z9 BC or older servers. z13 and z13s servers are not supported in an actively coupled Parallel Sysplex with z10 EC or z10 BC or older servers. z14 servers are not supported in an actively coupled Parallel Sysplex with z196 or z114 or older servers.

The number of MSUs used to determine either the MSUs of a stand-alone server or the total MSUs of a Parallel Sysplex are based on the announced IBM full capacity ratings that can be found on the Mainframe Exhibits section of the z Systems Software Contracts website.

All MSUs used in determining any Technology Transition Offering reduction exclude capacity related to specialty engines, unassigned capacity, Solution Edition capacity, and temporary capacity such as, but not limited to, "Capacity Back Up", "Capacity for Planned Events", and "On/Off CoD".

When determining the percentages used in the Transition Charges for Sysplexes offerings, standard arithmetic rounding rules to the nearest whole percent are applied. See the "Examples of Rounding for Transition Charges for Sysplexes" section below.

Technology Update Pricing for the IBM z14 (TU5)

When stand-alone z14 servers are priced with AWLC, or when all the servers in an aggregated Sysplex or Complex are z14 servers priced with AWLC, these servers receive a reduction to AWLC pricing which is called Technology Update Pricing for the IBM z14 (TU5).

Schedule of AWLC reductions for Technology Update Pricing for the IBM z14:

Quantity of z14 Full Capacity MSUs for a stand-alone server, or the sum of Full Capacity MSUs in an actively coupled Parallel Sysplex made up entirely of z14 servers	**Reduction in Monthly AWLC**
4 - 45 MSUs	6.0%
46 - 315 MSUs	12.0%
316 - 1315 MSUs	14.0%
1316 - 2676 MSUs	15.0%
2677 - 5476 MSUs	18.0%
5477 - more MSUs	21.0%

Example 1: A customer has two stand-alone z14 machines (not in an actively coupled Parallel Sysplex). Machine #1 is a z14 model 411 server with 293 MSUs, so it receives a 12.0% reduction in AWLC billing. Machine #2 is a z14 model 715 server with 2476 MSUs, so it receives a 15.0% reduction in AWLC billing.

Example 2: A customer has three z14 machines in an actively coupled Parallel Sysplex. Machine #1 is a z14 model 709 server with 1642 MSUs, machine #2 is a System z14 model 710 server with 1793 MSUs, and machine #3 is a z14 model 711 with 1939 MSUs, for a total of 5374 MSUs. The Parallel Sysplex will receive an 18.0% reduction in aggregated AWLC billing.

Technology Update Pricing for the IBM z13 (TU3)

When stand-alone z13 servers are priced with AWLC, or when all the servers in an aggregated Sysplex or Complex are z13 or z13s servers priced with AWLC, these servers receive a reduction to AWLC pricing which is called Technology Update Pricing for the IBM z13 (TU3).

Schedule of AWLC reductions for Technology Update Pricing for the IBM z13:

Quantity of z13 Full Capacity MSUs for a stand-alone server, or the sum of Full Capacity MSUs in an actively coupled Parallel Sysplex or Loosely Coupled Complex made up entirely of z13 or z13s servers	Reduction in Monthly AWLC
4 - 45 MSUs	4.0%
46 - 315 MSUs	8.0%
316 - 1315 MSUs	9.0%
1316 - 2676 MSUs	10.0%
2677 - 5476 MSUs	12.0%
5477 - more MSUs	14.0%

Example 1: A customer has two stand-alone z13 machines (not in an actively coupled Parallel Sysplex). Machine #1 is a z13 model 411 server with 281 MSUs, so it receives an 8.0% reduction in AWLC billing. Machine #2 is a z13 model 718 server with 2584 MSUs, so it receives a 10.0% reduction in AWLC billing.

Example 2: A customer has three z13 machines in an actively coupled Parallel Sysplex. Machine #1 is a z13 model 710 server with 1632 MSUs, machine #2 is a System z13 model 711 server with 1764 MSUs, and machine #3 is a z13 model 712 with 1891 MSUs, for a total of 5287 MSUs. The Parallel Sysplex will receive a 12.0% reduction in aggregated AWLC billing.

Technology Update Pricing for AWLC (TU1)

When stand-alone zEC12 servers are priced with AWLC, or when all the servers in an aggregated Sysplex or Complex are zEC12 or zBC12 servers priced with AWLC, these servers receive a reduction to AWLC pricing which is called Technology Update Pricing for AWLC (TU1).

Schedule of AWLC reductions for Technology Update Pricing for AWLC:

Number of zEC12 Full Capacity MSUs for a stand-alone server, or the sum of Full Capacity MSUs in an actively coupled Parallel Sysplex or Loosely Coupled Complex made up entirely of zEC12 or zBC12 servers	Reduction in Monthly AWLC
4 - 45 MSUs	2.0%
46 - 315 MSUs	4.0%
316 - 1315 MSUs	4.5%
1316 - 2676 MSUs	5.0%
2677 - 5476 MSUs	6.0%
5477 - more MSUs	7.0%

Example 1: A customer has two stand-alone zEC12 machines (not in an actively coupled Parallel Sysplex). Machine #1 is a zEC12 model 406 server with 160 MSUs, so it receives a 4.0% reduction in AWLC billing. Machine #2 is a zEC12 model 712 server with 1709 MSUs, so it receives a 5.0% reduction in AWLC billing.

Example 2: A customer has three machines in an actively coupled Parallel Sysplex. Machine #1 is a zEC12 model 715 server with 2043 MSUs, machine #2 is a System zEC12 model 713 server with 1822 MSUs, and machine #3 is a zBC12 model Z05 with 529 MSUs, for a total of 4394 MSUs. The Parallel Sysplex will receive a 6.0% reduction in aggregated AWLC billing.

AWLC Transition Charges for Sysplexes (TC4)

When two or more machines exist in an aggregated Sysplex or Complex and at least one is a z14 server and at least one is a z13 or z13s server, with no older technology machines included, they will receive a reduction to AWLC pricing across the aggregated Sysplex or Complex. This reduction provides a portion of the price performance benefit related to Technology Update Pricing for the IBM z14 (TU5) based on the total Full Capacity MSUs of all z14, z13, and z13s Machines in the Sysplex or Complex.

Schedule of AWLC reductions for Transition Charges for Sysplexes (TC4):

Quantity of z14, z13, and z13s Full Capacity MSUs in an actively coupled Parallel Sysplex	**Reduction in Monthly AWLC**
4 - 45 MSUs	5.0%
46 - 315 MSUs	10.0%
316 - 1315 MSUs	11.0%
1316 - 2676 MSUs	13.0%
2677 - 5476 MSUs	15.0%
5477 - more MSUs	18.0%

AWLC Transition Charges for Sysplexes (TC3)

When two or more machines exist in an aggregated Sysplex or Complex and at least one is a z14, z13 or z13s server and at least one is a zEC12 or zBC12 server, with no older technology machines included, they will receive a reduction to AWLC pricing across the aggregated Sysplex or Complex. This reduction provides a portion of the price performance benefit related to Technology Update Pricing for the IBM z13 (TU3) based on the total Full Capacity MSUs of all z14, z13, z13s, zEC12, and zBC12 Machines in the Sysplex or Complex.

Schedule of AWLC reductions for Transition Charges for Sysplexes (TC3):

Quantity of z14, z13, z13s, zEC12, and zBC12 Full Capacity MSUs in an actively coupled Parallel Sysplex or Loosely Coupled Complex	**Reduction in Monthly AWLC**
4 - 45 MSUs	2.8%
46 - 315 MSUs	5.6%
316 - 1315 MSUs	6.3%
1316 - 2676 MSUs	7.0%
2677 - 5476 MSUs	8.4%
5477 - more MSUs	9.8%

AWLC Transition Charges for Sysplexes (TC2)

When two or more machines exist in an aggregated Sysplex or Complex and at least one is a z13, z13s, zEC12, or zBC12 server and at least one is a z196 or z114 server, with no older technology machines included, they will receive a reduction to AWLC pricing across the aggregated Sysplex or Complex. This reduction provides a portion of the price performance benefit related to Technology Update Pricing for AWLC (TU1) based upon the proportion of z13, z13s, zEC12 or zBC12 server capacity in the Sysplex or Complex.

Schedule of AWLC reductions for Transition Charges for Sysplexes (TC2):

Percentage of z13, z13s, zEC12, and zBC12 Full Capacity MSUs in an Actively Coupled Parallel Sysplex or Loosely Coupled Complex	**Reduction in Monthly AWLC**
> 0 - 20%	0.5%
21 - 40%	1.5%
41 - 60%	3.0%
61 - 80%	4.0%
81 - < 100%	4.5%

AWLC Transition Charges for Sysplexes (TC1)

When two or more machines exist in an aggregated Sysplex or Complex but not all of the servers are zEnterprise (zEC12, zBC12, z196 or z114) servers, all machines will remain on Workload License Charge (WLC) pricing, but will receive a reduction to VWLC pricing across the aggregated Sysplex or Complex. This reduction provides a portion of the price performance benefit related to AWLC pricing based upon the proportion of z Systems server capacity in the Sysplex or Complex.

Schedule of VWLC reductions for Transition Charges for Sysplexes (TC1):

Percentage of z Systems server Full Capacity MSUs in an Actively Coupled Parallel Sysplex or Loosely Coupled Complex	**Reduction in Monthly VWLC**
> 0 - 20%	0.5%
21 - 40%	1.5%
41 - 60%	3.0%
61 - 80%	4.0%
81 - < 100%	4.5%

Examples of Rounding for Transition Charges for Sysplexes

Example 1: A customer has two machines in an actively coupled Parallel Sysplex. Machine #1 is a zEC12 model 716 server with 2149 MSUs, and Machine #2 is a z196 model 710 server with 1191 MSUs for a total of 3340 MSUs. Divide 2149 by 3340, the result is 0.64341, which is rounded down to 64%. The Parallel Sysplex will receive AWLC pricing and receive a 4.0% reduction in AWLC billing under the AWLC Transition Charges for Sysplexes (TC2) program.

Example 2: A customer has two machines in an actively coupled Parallel Sysplex. Machine #1 is a z196 model 715 server with 1648 MSUs and machine #2 is a System z10 EC model 713 server with 1076 MSUs

for a total of 2724 MSUs. Divide 1648 by 2724, the result is 0.604992, which is rounded down to 60%. The Parallel Sysplex will remain on VWLC pricing and receive a 3.0% reduction in VWLC billing under the AWLC Transition Charges for Sysplexes (TC1) program.

Example 3: A customer has three machines in an actively coupled Parallel Sysplex. Machine #1 is a z196 model 610 server with 777 MSUs, machine #2 is a System z10 EC model 739 server with 2585 MSUs, and machine #3 is a System z9 EC model 608 server with 428 MSUs, for a total of 3790 MSUs. Divide 777 by 3790, the result is 0.205013, which rounds up to 21%. The Parallel Sysplex will remain on VWLC pricing and receive a 1.5% reduction in VWLC billing under the AWLC Transition Charges for Sysplexes (TC1) program.

AWLC News

On 17 July 2017 IBM announced two new and one updated Technology Transition Offerings in support of the announcement of the IBM z14 (z14) server. Technology Update Pricing for the IBM z14 provides additional price performance on z14 servers compared to AWLC on older generations of servers. The enhancements to Transition Charges for Sysplexes provide additional price performance to an actively coupled z/OS Parallel Sysplex or z/TPF Loosely Coupled Complex which includes a z14 server but which is not yet made up entirely of z14 servers.

On 16 February 2016 IBM announced one new and two updated Technology Transition Offerings in support of the announcement of the IBM z13s (z13s) server. Technology Update Pricing for the z13s provides additional price performance on z13s servers compared to AEWLC on older generations of servers. The enhancements to Transition Charges for Sysplexes provide additional price performance to AWLC pricing for an actively coupled z/OS Parallel Sysplex or z/TPF Loosely Coupled Complex which includes a z13s server but which is not yet made up entirely of z13 or z13s servers.

On 14 January 2015 IBM announced two new and one updated Technology Transition Offerings in support of the announcement of the IBM z13 (z13) server. Technology Update Pricing for the IBM z13 provides additional price performance on z13 servers compared to AWLC on older generations of servers. The enhancements to Transition Charges for Sysplexes provide additional price performance to an actively coupled z/OS Parallel Sysplex or z/TPF Loosely Coupled Complex which includes a z13 server but which is not yet made up entirely of z13 servers.

On 23 July 2013 IBM announced a new Technology Transition Offering (TTO) called Technology Update Pricing for Advanced Entry Workload License Charges (AEWLC), as well as revisions to the Technology Update Pricing for Advanced Workload License Charges (AWLC) offering and revisions to the two Transition Charges for Sysplexes offerings, all in support of the announcement of the IBM zEnterprise BC12 (zBC12) server. Technology Update Pricing for AEWLC provides additional price performance on zBC12 servers compared to AEWLC on the z114 server. The other Technology Transition Offerings now include the zBC12 server. More information on AEWLC is available on the web.

On 3 October 2012 IBM announced additional information clarifying that the three Technology Transition Offerings, including Technology Update Pricing for Advanced Workload License Charges (AWLC) and the two revised Transition Charges for Sysplexes programs, also apply to z/TPF systems.

On 28 August 2012 IBM announced three Technology Transition Offerings, consisting of Technology Update Pricing for Advanced Workload License Charges (AWLC) and two revised Transition Charges for Sysplexes programs, in support of the announcement of the IBM zEnterprise EC12 (zEC12) server. Technology Update Pricing for AWLC provides additional price performance on zEC12 servers compared to AWLC on older generations of servers. The enhancements to Transition Charges for Sysplexes provide additional price performance to a parallel sysplex which includes a zEC12 server but which is not yet made up entirely of zEC12 servers.

On 18 January 2011 IBM announced Integrated Workload Pricing (IWP). IWP enhances the sub-capacity utilization reporting capabilities of zEnterprise 196 systems running z/OS, which can improve the price/performance for eligible Monthly License Charge IWP Adjusted Programs running within the same LPAR as select IWP Defining Programs. Lists of both types of IWP Programs are on the web.

On 22 July 2010 IBM announced a new pricing metric called 'z Systems Advanced Workload License Charges (AWLC)' for z/OS and z/TPF in support of the announcement of the IBM zEnterprise 196 (z196) server. AWLC is a Sub-Capacity eligible pricing metric which provides additional price performance on a z196 server compared to Workload License Charges (WLC) on older generations of servers.