

# IBM Watson Machine Learning for z/OS, V2.2 improves deployment flexibility with a new architecture in a hybrid cloud and provides enhancements in functions, performance, and usability; IBM Db2 AI for z/OS, V1.3 helps deliver protection against disruption to IBM Db2 for z/OS subsystems by providing analysis of distributed connections, alert of abnormal patterns, and recommendation of actions to better control and balance application connections

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## At a glance

IBM Watson<sup>(R)</sup> Machine Learning for z/OS<sup>(R)</sup> (WMLz), V2.2, offers a hybrid cloud approach to model development and model deployment lifecycle management and collaboration that is designed to help organizations innovate and transform on an enterprise scale.

IBM<sup>(R)</sup> Db2<sup>(R)</sup> AI for z/OS (Db2ZAI), V1.3, a separately licensed product, uses machine learning to improve the operational performance of Db2 for z/OS systems. It is built on the services that are provided by Watson<sup>TM</sup> Machine Learning for z/OS to help optimize performance. Db2 AI for z/OS empowers the optimizer in the Db2 for z/OS engine to determine the best-performing query access paths based on workload characteristics that use machine learning capabilities. In addition, Db2ZAI detects Db2 for z/OS system performance exceptions and provides recommended actions for tuning which are based on your environment.

## Overview

IBM Watson Machine Learning for z/OS (WMLz), V2.2, offers a hybrid cloud approach to model development and model deployment lifecycle management and collaboration that is designed to help organizations innovate and transform on an enterprise scale. Version 2.2 offers:

- Simplified architecture and deployment flexibility that enable you to install WMLz base on z/OS as a stand-alone solution, with the option to extend it by installing WMLz integrated development environment (IDE) on Linux<sup>(R)</sup> on IBM Z<sup>(R)</sup> or Linux x86
- A complete continuous integration and continuous delivery (CI/CD) workflow for models developed in Cloud Pak for Data and deployed on z/OS
- Performance improvement for online scoring

- Option to use custom libraries for online scoring, batch scoring, and model evaluation
- New web-based configuration tool that guides you through the initial configuration of WMLz base
- Python utility library for saving Apache Spark, scikit-learn, and XGBoost models in any machine learning IDE (that you can import into WMLz later)
- Support of new versions of machine learning frameworks Spark, scikit-learn, and XGBoost

IBM Db2 AI for z/OS (Db2ZAI), V1.3, a separately licensed product, uses machine learning to improve the operational performance of Db2 for z/OS systems. It is built on the services that are provided by Watson Machine Learning for z/OS to help optimize performance. Db2 AI for z/OS empowers the optimizer in the Db2 for z/OS engine to determine the best-performing query access paths based on workload characteristics that use machine learning capabilities. In addition, Db2ZAI detects Db2 for z/OS system performance exceptions and provides recommended actions for tuning which are based on your environment. Similarly, Db2ZAI learns about distributed connections and recommends connection and thread thresholds to control distributed activity from impacting availability.

Version 1.3 delivers more enhancements to help improve Db2 for z/OS performance and resilience in the following areas:

- Delivers Distributed Connection Control
- Automates SQL regression detection and resolution
- Streamlines exception analysis in System Assessment

With Db2ZAI Version 1.3, Watson Machine Learning for z/OS V2.2 services are bundled as a complete solution.

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## Key requirements

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Watson Machine Learning for z/OS, V2.2 requires an IBM z15™, IBM z14<sup>(R)</sup>, IBM z14 Model ZR1, IBM z13<sup>(R)</sup>, IBM z13s<sup>(R)</sup>, or IBM zEnterprise<sup>(R)</sup> EC12 server running IBM z/OS V2.2 (5650-ZOS), or later.

For details, see the [Hardware requirements](#) and [Software requirements](#) sections.

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## Planned availability date

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June 19, 2020

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## Description

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### Watson Machine Learning for z/OS, V2.2

A major theme in this new rebranded version is to enable an end-to-end machine learning workflow in a hybrid cloud environment. With Watson Machine Learning for z/OS, V2.2, machine learning assets can be developed and deployed in a continuous integration and continuous delivery (CI/CD) workflow across Cloud Pak for Data and z/OS.

The new release of Watson Machine Learning for z/OS also simplifies installation, migration, configuration, and administration so it can be more easily embedded in any z/OSA AI-infused solutions.

### Db2 AI for z/OS, V1.3

Db2 AI for z/OS, V1.3 continues to build the models delivered with the prior release that leveraged machine learning to find better access paths for SQL queries. The capability to predict host variables and screen scrolling has been shown through IBM internal benchmarking to reduce CPU and elapsed time by up to 25%. Key new features to further improve Db2 performance and resilience in Db2 AI for z/OS, V1.3 include:

- **Automated SQL regression detection and resolution:** Detects when an access path has degraded compared to a prior path, and will automatically fallback to and lock in the better-performing access path. This self-healing capability allows Db2ZAI to resolve a regression without intervention by a database administrator, saving valuable time and effort. The threshold for this automation can be customized by the database administrators, to distinguish the conditions for Db2ZAI to automatically execute the fallback or simply produce an alert for action. This provides much-needed flexibility for extensive complex environments that require continuous tuning to ensure uptime and responsiveness.
- **Streamlined exception analysis:** Enhances exception analysis experience; exceptions are categorized into general regions of interest to system programmers (such as CPU, storage, connectivity) to allow a more immediate identification of problem areas. This grouping is then used to drill down more efficiently to the offending Db2 for z/OS location. Once the exception is identified, Db2ZAI V1.3 provides a correlation graph that allows system programmers to quickly align an anomaly with a particular system attribute and activity. Such correlation is critical to the timely prevention and resolution of system anomalies before they become debilitating system errors.
- **Distributed Connection Control:** Provides protection for Db2 for z/OS from unintentional disruptions and intrusions that may originate from remote applications. The new feature allows:
  - Easy data collection and analysis about remote applications.
  - Intelligent connection and thread profile tuning based on learned application behavior.
  - Early-warning alerts issued to database administrators (DBAs) when an abnormal pattern is detected, providing DBAs advance time to respond to any potential negative impact.
  - Controls and limits on distributed connections that may affect Db2 for z/OS's availability based on learned connection behavior.

Additionally, the following client requirements are satisfied or partially satisfied by APAR PH16111, for which Db2ZAI V1.3 exploits:

**DB24ZOS-I-1035** : Improve DDF location statistics (Enable more application connections via self-service inactive thread management)

**DB24ZOS-I-973** : Db2 trace data should provide metrics related to usage of SysplexWLB (Workload Balancing) option

**DB24ZOS-I-972** : Db2 trace data should provide metrics related to secured connections (SSL, AT-TLS)

**DB24LUW-I-790** : New metrics for REST Services

**DB24ZOS-I-900** : Capture Connection Security Type in SMF accounting data

## **Accessibility by people with disabilities**

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Accessibility Compliance Reports (previously known as a VPAT) containing details on accessibility compliance to standards, including the Worldwide Consortium Web Content Accessibility Guidelines, European Standard EN 301 349, and US Section 508, can be found on the [IBM Accessibility Conformance Report Request](#) website.

## **Value Unit-based pricing**

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Value Unit pricing for eligible IBM Z IBM International Program License Agreement (IPLA) programs enables a lower cost of incremental growth and enterprise aggregation. Each IBM Z IPLA product with Value Unit pricing has a single price per

Value Unit and a conversion matrix, called Value Unit Exhibit, for converting from some designated measurement to Value Units. Most commonly, Millions of Service Units (MSUs) is the measurement designated by IBM to be converted to Value Units. Some other measurements are engines or messages. Since MSUs are the most common measurement, that measurement will be used for the remainder of this description.

Value Unit pricing offers price benefits for you. For each IBM Z IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as the **required license capacity**. Each of the various Value Unit Exhibits stipulates that the larger your required license capacity, the fewer Value Units per MSU you will need. Value Unit Exhibits are uniquely identified by a three-digit code and referred to using the nomenclature VUExxx, where xxx is the three-digit code.

Subsequent acquisitions of Value Unit priced programs offer additional price benefits. The quantity of each IBM Z IPLA program that you have acquired is referred to as **entitled license capacity**. If you wish to grow your entitled license capacity for an IBM Z IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

For each IBM Z IPLA program with Value Unit pricing, you should:

- Determine the required license capacity, in MSUs.
- Aggregate the MSUs across the enterprise.
- Convert the total MSUs to Value Units, using the applicable Value Unit Exhibit.
- Multiply the price per Value Unit by the total number of Value Units to determine the total cost.

To simplify conversion from the designated measurement to Value Units or vice-versa, use the Value Unit Converter Tool. For additional information or to obtain a copy of the Value Unit Converter Tool, see the [IBM Z Software Pricing](#) website.

Note that Value Units of a given program cannot be exchanged, interchanged, or aggregated with Value Units of another program.

To determine the required license capacity for the IBM Z IPLA program you selected, see the [Terms and conditions](#) section.

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## Program number

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Program number	VRM	Program name
5698-WML	2.2.0	IBM Watson Machine Learning for z/OS
5698-CGN	1.3.0	IBM Db2 AI for z/OS
Program number	Subscription and Support PID number	
5698-WML	5698-MLS	
5698-CGN	5698-CGS	

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## Business Partner information

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If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBMid).

[BP Attachment for Announcement Letter 220-159](#)

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## Offering Information

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Product information is available on the [IBM Offering Information](#) website.

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## Publications

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Technical documentation for Watson Machine Learning for z/OS V2.2 and Db2 AI for z/OS V1.3 can be found in [IBM Knowledge Center](#).

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## Services

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### Software Services

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IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of the lab-based software services team and the business consulting, project management, and infrastructure expertise of the IBM Global Services team. Also, IBM extends the reach of IBM Software Services through IBM Business Partners to provide an extensive portfolio of capabilities. IBM provides the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services, contact your Lab Services Sales or Delivery Leader.

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## Technical information

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### Specified operating environment

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#### *Hardware requirements*

#### **Watson Machine Learning for z/OS, V2.2**

One of the following Z systems running IBM z/OS (5650-ZOS) V2.2, V2.3, or V2.4:

- IBM z15, IBM z14, IBM z14 Model ZR1, IBM z13, IBM z13s, or IBM zEnterprise EC12 system

It is recommended that clients allocate four or more zIIP<sup>1</sup> processors, one general purpose processor, and 100 GB or more memory with 100 GB storage to the LPAR where Watson Machine Learning will operate.

The Watson Machine Learning for z/OS, V2.2 IDE on Linux requires an x86 hardware or IBM s/390x hardware and virtual environment.

- To support Watson Machine Learning for z/OS IDE on Linux x86, one x86 (virtual) system or three x86 (virtual) systems with 8-core CPU 48 GB memory, and 50 GB disk each is recommended with a minimum of 300 GB secondary storage for each server.
- To support Watson Machine Learning for z/OS IDE on Linux on Z, one s/390x 64-bit server or three s/390x 64-bit servers with three IFL processors each, 48 GB memory, and 50 GB disk each is recommended with a minimum of 300 GB secondary storage for each server.

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This information provides only general descriptions of the types and portions of workloads that are eligible for execution on specialty engines (SEs). IBM authorizes clients to use IBM SEs such as zIIPs, zAAPs, and IFLs only to execute the processing of Eligible Workloads of specific programs expressly authorized by IBM as specified in the Authorized Use Table for IBM Machines (AUT). No other workload processing is authorized for execution on an SE. IBM offers SEs at a lower price than general processors and central processors because clients are authorized to use SEs only to process certain types or amounts of workloads as specified by IBM in the [Authorized Use Table](#) website.

The Watson Machine Learning V2.2 Linux on Z requires the following:

- s/390x 64-bit server that runs on an LPAR of an IBM z15, IBM z14, IBM z14 Model ZR1, IBM z13, IBM z13s, IBM zEnterprise EC12, IBM zEnterprise BC12, LinuxONE Emperor, or LinuxONE Rockhopper system.

### **Db2 AI for z/OS, V1.3**

Db2 AI for z/OS requires zEnterprise EC12, or later, which is the minimum hardware level supported by both Db2 12 for z/OS and Watson Machine Learning for z/OS, Version 2. 2.

In addition to Watson Machine Learning for z/OS, V2.2 hardware requirements, Db2 AI for z/OS requires an additional 1 GB memory per Db2 subsystem (this includes additional buffer pool usage) and may require additional zIIPs capacity.

### **Software requirements**

#### **IBM Watson Machine Learning for z/OS, V2.2**

##### **Mandatory installation requirements (WMLz on z/OS only):**

The Watson Machine Learning for z/OS V2.2 components require the following:

- z/OS V2.2, V2.3, or V2.4

##### **Mandatory operational requirements (WMLz on z/OS only):**

The Watson Machine Learning for z/OS, V2.2 components required for model management, deployment, and scoring services on z/OS require the following:

- IBM Open Data Analytics for z/OS (FMIDs delivered with WMLz 2.2).
- Node.js V12 plus any of the following:
  - z/OS V2.2 (plus PTFs UI64839, UI64940, UI64837, and UI6483) or
  - z/OS V2.3 (plus PTFs UA98440, UI61308, UI61376, UI61747, and UI61375) or
  - z/OS V2.4 (plus PTFs UA98441, UI62788, UI46658, UI62416, and UI62415)
- IBM 64-bit SDK for z/OS, Java™ Technology Edition, V8 (5655-DGH), Refresh 3 Fix Pack 12, or later. Ensure that JAVA\_HOME is set as your installation directory.
- z/OS Integrated Cryptographic Service Facility (ICSF). Ensure that the ICSF component is properly configured and started.
- IBM Db2 11 for z/OS (5615-DB2<sup>(R)</sup> or 5697-P43), or later.
- z/OS OpenSSH.
- IBM CICS<sup>(R)</sup> Transaction Server for z/OS, V5.4.0 or V5.3.0 with APAR PI63005 applied only if you plan to install and run the machine learning scoring service in a CICS region.

##### **Mandatory installation requirements (WMLz z/OS components with IDE on Linux on Z):**

The Watson Machine Learning for z/OS, V2.2 components required to install WMLz with an IDE running on *Linux on Z* require the following on z/OS and on Linux on Z:

##### **For the z/OS system:**

- z/OS V2.2, V2.3, or V2.4

##### **For the Linux on Z system:**

- Red Hat<sup>(R)</sup> Enterprise Linux Server 7.5, 7.6, or 7.7
- OpenJDK 1.8.0, or later

- One additional IP address as a proxy IP for the three Linux systems in the same subnet as the three Linux systems where it connects to the back end on z/OS

### **Mandatory operational requirements (WMLz z/OS components with IDE on Linux on Z):**

The Watson Machine Learning for z/OS, V2.2 components required to operate WMLz with an IDE running on *Linux on Z* require the following on z/OS and on Linux on Z:

#### **For the z/OS system:**

- IBM Open Data Analytics for z/OS (FMIDs delivered with WMLz 2.2).
- Node.js V12 plus any of the following:
  - z/OS V2.2 (plus PTFs UI64839, UI64940, UI64837, and UI6483) or
  - z/OS V2.3 (plus PTFs UA98440, UI61308, UI61376, UI61747, and UI61375) or
  - z/OS V2.4 (plus PTFs UA98441, UI62788, UI46658, UI62416, and UI62415)
- IBM 64-bit SDK for z/OS, Java Technology Edition, V8 (5655-DGH), Refresh 3 Fix Pack 12, or later. Ensure that JAVA\_HOME is set to your installation directory.
- z/OS Integrated Cryptographic Service Facility (ICSF). Ensure that the ICSF component is properly configured and started.
- IBM Db2 11 for z/OS (5615-DB2 or 5697-P34), or later.
- z/OS OpenSSH.

#### **For the Linux on Z system:**

- Red Hat Enterprise Linux Server 7.5, 7.6, or 7.7
- OpenJDK 1.8.0, or later

### **Mandatory installation requirements (WMLz z/OS components with IDE on Linux x86):**

The Watson Machine Learning for z/OS, V2.2 components required to install WMLz with an IDE on Linux x86 require the following on z/OS and on Linux x86:

#### **For the z/OS system:**

- z/OS V2.2, V2.3 or V2.4

#### **For the Linux x86 system:**

- Red Hat Enterprise Linux Server 7.5, 7.6, or 7.7
- OpenJDK 1.8.0, or later

### **Mandatory operational requirements (WMLz z/OS components with IDE on Linux x86):**

The Watson Machine Learning for z/OS, V2.2 components required to operate WMLz with an IDE on Linux x86 require the following on z/OS and on Linux x86:

#### **For the z/OS system:**

- IBM Open Data Analytics for z/OS (FMIDs delivered with WMLz 2.2).
- Node.js V12 plus any of the following:
  - z/OS V2.2 (plus PTFs UI64839, UI64940, UI64837, and UI6483) or
  - z/OS V2.3 (plus PTFs UA98440, UI61308, UI61376, UI61747, and UI61375) or
  - z/OS V2.4 (plus PTFs UA98441, UI62788, UI46658, UI62416, and UI62415)
- IBM 64-bit SDK for z/OS, Java Technology Edition, V8 (5655-DGH), Refresh 3 Fix Pack 12, or later. Ensure that JAVA\_HOME is set to your installation directory.
- z/OS Integrated Cryptographic Service Facility (ICSF). Ensure that the ICSF component is properly configured and started.

- IBM Db2 11 for z/OS (5615-DB2 or 5697-P34), or later.
- z/OS OpenSSH.
- IBM CICS Transaction Server for z/OS, V5.4.0 or V5.3.0 with APAR PI63005 applied only if you plan to install and run the machine learning scoring service in a CICS region.

**For the *Linux x86* system:**

- Red Hat Enterprise Linux Server 7.5, 7.6, or 7.7
- OpenJDK 1.8.0, or later

**IBM Db2 AI for z/OS, V1.3**

**Mandatory installation requirements:**

- z/OS V2.2 (5650-ZOS), or later, including Product Registration Services

**Mandatory operational requirements:**

- Db2 AI for z/OS, V1.3 (5698-CGN), APAR PH23942 (Db2ZAI 1.3 UI)
- Db2 12 for z/OS (5650-DB2 or 5770-AF3), Function level 500 activated plus APARs PH15742, PH16111, and PH24097
- Watson Machine Learning for z/OS, V2.2 (5698-WML)

***IBM Support***

[IBM Support](#) is your gateway to technical support tools and resources that are designed to help you save time and simplify support. IBM Support can help you find answers to questions, download fixes, troubleshoot, submit and track problem cases, and build skills. Learn and stay informed about the transformation of IBM Support, including new tools, new processes, and new capabilities, by going to the [IBM Support Insider](#).

**Planning information**

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***Packaging***

The programs in this announcement are distributed with the following content:

- Basic machine-readable material (FMID content described below)
- Program Directories
- IBM International Program License Agreement (IPLA) documents
- IBM Agreement for Acquisition of Software Maintenance (IAASM)

**5698-WML, IBM Watson Machine Learning for z/OS, V2.2**

The **Watson Machine Learning -z/OS** feature contains FMIDs packaged for installation in to the z/OS SREL (Z038), as follows:

- HAQN210 (Watson Machine Learning for z/OS- base)
- HAQN21A (Watson Machine Learning for z/OS-Db2 ITOA solution template)
- HANA110 (Open Data Analytics - Anaconda)
- HMDS120 (Open Data Analytics - Mainframe Data Services)
- HSPK120 (Open Data Analytics - Spark)

The **Watson Machine Learning -Db2** feature contains FMIDs packaged for installation in to the DB2 SREL (P115), as follows:

- HAQN210 (Watson Machine Learning for z/OS- base)
- HAQN21A (Watson Machine Learning for z/OS-Db2 ITOA solution template)

**Note:** FMIDs HAQN210 and HAQN21A may be installed in either SREL Z038 or P115.

### 5698-CGN, IBM Db2 AI for z/OS, V1.3

The **Db2 AI for z/OS-z/OS** feature contains FMIDs packaged for installation in to the z/OS SREL (Z038), as follows:

- HAQN210 (Watson Machine Learning for z/OS- base)
- HAQN21A (Watson Machine Learning for z/OS-Db2 ITOA solution template)
- HANA110 (Open Data Analytics - Anaconda)
- HMDS120 (Open Data Analytics - Mainframe Data Services)
- HSPK120 (Open Data Analytics - Spark)

The **Db2 AI for z/OS-Db2** feature contains FMIDs packaged for installation in to the DB2 SREL (P115), as follows:

- HCOY120 (Db2 AI for z/OS- base)
- HAQN210 (Watson Machine Learning for z/OS)
- HAQN21A (Watson Machine Learning for z/OS-Db2 ITOA solution template)

**Note:** FMIDs HAQN210 and HAQN21A may be installed in either SREL Z038 or P115.

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## Ordering information

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Consult your IBM representative.

### Ordering z/OS through the internet

Shopz provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). For more details and availability, go to the [Shopz](#) website.

### Charge metric

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The charge metrics for these licensed products can be found in the following License Information documents (available June 19, 2020):

Program identifier	License Information document title	License Information document number
5698-WML	IBM Watson Machine Learning for z/OS, V2.2 License Information	<a href="#">L-HLIU-BM59RU</a>
5698-CGN	IBM Db2 AI for z/OS, V1.3 License Information	<a href="#">L-DCLN-BM4TTP</a>

Select your language of choice and scroll down to the "Charge Metrics" section. Follow-on releases, if any, may have updated terms. See the [License Information documents](#) website for more information.

### Basic license

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Translation from MSUs to Value Units

	MSUs	Value Units/MSU
Base	1-3	1.00
Tier A	4-45	0.45
Tier B	46-175	0.36
Tier C	176-315	0.27
Tier D	316 or greater	0.20

To order, specify the program ID number and the appropriate license or charge option. To suppress shipment of media, select the license-only option in CFSW.

**Program name: IBM Watson Machine Learning for z/OS, V2.2**

**Program ID: 5698-WML**

Entitlement identifier	Description	License option/Pricing metric	
S018DS0	Watson Machine Learning for z/OS, V2.2	Multi-Version Measurement No Charge Per Install	
		Use-Based License one-Time Charge Per Install	
Orderable supply ID	Description	Language	Distribution Medium
S018F2R	Watson Machine Learning for z/OS-Db2	English US	DVD
S018F2P	Watson Machine Learning for z/OS-z/OS	English US	DVD

**Program name: IBM Db2 AI for z/OS, V1.3**

**Program ID: 5698-CGN**

Entitlement identifier	Description	License option/Pricing metric	
S018CXV	IBM Db2 AI for z/OS, V1.3	Multi-Version Measurement No Charge Value Units	
		On Off Capacity on demand Temporary Use Charge MSU-DAY(s)	
		Use-Based License One-Time Charge Value Units	
Orderable supply ID	Description	Language	Distribution Medium
S018F2S	IBM Db2 AI for z/OS-Db2	English US	DVD
S018CHB	IBM Db2 AI for z/OS-z/OS	English US	DVD

You choose the delivery method when you order the software. IBM recommends internet delivery. However, if you still require physical media, you can choose DVD.

**Subscription and Support Program ID: 5698-MLS**

Entitlement identifier	Description	License option/Pricing metric	
S0183FW	Machine Learning for z/OS S&S	Basic ASC, per Install SW S&S	
		No charge, Decline SW S&S	
		Multi-Version Measurement S&S No Charge	
Orderable supply ID	Language	Distribution Medium	
S0183FX	English US	Paper	

**Subscription and Support Program ID: 5698-CGS**

Entitlement identifier	Description	License option/Pricing metric	
S018CXW	IBM Db2 AI for z/OS S&S	Decline Subscription and Support No Charge Value Units	

Entitlement identifier	Description	License option/Pricing metric
		Multi-Version Measurement S&S No Charge Value Units
		SW Subscription and Support Annual Support Charge Value Units
		SW Subscription and Support Monthly Support Charge Value Units
		SW Subscription and Support Registration (minus Supply right) No Charge Per MSU
Orderable supply ID	Language	Distribution Medium
S018CHF	English US	Paper

## Subscription and Support

To receive voice technical support via telephone and future releases and versions at no additional charge, Subscription and Support must be ordered. The capacity of Subscription and Support (Value Units) must be the same as the capacity ordered for the product licenses.

To order, specify the Subscription and Support program ID referenced above and the appropriate license or charge option.

IBM is also providing Subscription and Support for these programs with a separately purchased offering under the terms of the IBM International Agreement for Acquisition of Software Maintenance. This offering:

- Includes and extends the support services provided in the base support to include technical support by telephone.
- Entitles you to future releases and versions, at no additional charge. Note that you are not entitled to new programs.

When Subscription and Support is ordered, the charges will automatically renew annually unless canceled by you.

The combined effect of the IPLA license and the Agreement for Acquisition of Software Maintenance gives you rights and support services comparable to those under the traditional ICA IBM Z license or its equivalent. To ensure that you continue to enjoy the level of support you are used to in the ICA business model, you must order **both** the license for the program **and** the support for the selected programs at the same Value Unit quantities.

## Customized Offerings

Product deliverables are shipped only through CBPDO and ServerPac. These customized offerings are offered for internet delivery. For more details on Internet delivery, go to the Help section on the [Shopz](#) website.

IBM recommends internet delivery. However, if you still require physical media, you can choose DVD.

Many products can be ordered in ServerPac the month following their availability in CBPDO. z/OS can be ordered through CBPDO and ServerPac on the planned availability date. Many products will also be orderable in a Product ServerPac without also having to order the z/OS operating system or subsystem.

Shopz and CFSW will determine the eligibility based on product requisite checking. For more details on the Product ServerPac, go to the Help section on the [Shopz](#) website.

Production of software product orders will begin on the planned availability date.

- CBPDO shipments will begin one week after the planned availability date.
- ServerPac shipments will begin four weeks after the planned availability date.

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## Terms and conditions

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The terms and conditions for IBM Watson Machine Learning for z/OS and IBM Db2 AI for z/OS, as previously announced in Software Announcement [219-058](#), dated February 12, 2019, are unchanged except as listed below:

- IBM Watson Machine Learning for z/OS, V2.2 will be a continuous delivery release.

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## Statement of good security practices

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IT system security involves protecting systems and information through intrusion prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a regulatory compliant, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective.

**Important:** IBM does not warrant that any systems, products, or services are immune from, or will make your enterprise immune from, the malicious or illegal conduct of any party.

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## Prices

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Registered external clients and IBM Business Partners can access [IBMLink](#) to view pricing information.

Specify "Price type," "Search type," and "Search value," then click "Search."

Note: Enter program number in the "Search value."

You can also contact your local IBM representative or IBM Business Partner for the applicable charges.

### **Trademarks**

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