

Preview: IBM z/OS Cloud Broker for IBM Cloud Private is intended to deliver z/OS services and resources that run on IBM Z servers for cloud-native application development

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At a glance

IBM^(R) intends for IBM z/OS^(R) Cloud Broker for IBM CloudTM Private to be designed to deliver:

- Direct, self-service access of z/OS computing resources by users of IBM Cloud Private
- Connectivity to an industry-standard Kubernetes (K8s) container runtime with an emphasis on simplicity, robustness, and portability
- Ability to track and manage resources by using IBM Cloud Private
- Maximum control over resources and z/OS software subsystem instances
- Access to service catalogs with customized z/OS services that can exploit the multi-tenancy and rapid elasticity of z/OS
- New agility for z/OS to help businesses protect, integrate, and grow their IT investments into their cloud-native development environments

Overview

Application development patterns continue to move towards cloud-native strategies. Enterprise development takes place through deployment of services and workflows on internal private cloud platforms. These cloud platforms take advantage of the latest architectures and technologies that continually emerge as part of the growing ecosystem of open source innovation. Private cloud platforms that use containers and orchestration are foundational to support developers and organizations to build, integrate, and deliver solutions more quickly. Organizations not only need robust and modern cloud development platforms, but they also must ensure that all of their systems of record, workloads, and data can be connected with and used on these platforms in a native, developer-friendly manner.

Because of this, organizations increasingly search for private, on-premise cloud solutions to give them complete control and confidence for driving digital transformation and modernization into their business.

IBM Cloud Private is a Platform as a Service (PaaS) environment for developing and managing containerized applications. This integrated environment can be deployed behind firewalls and managed or controlled by whomever the enterprise determines. It is built on the container orchestrator Kubernetes, and contains:

- A private image repository
- A management console
- Monitoring, logging, and security frameworks

With a lightweight footprint, yet powerful platform capabilities, IBM Cloud Private enables enterprises to unleash their development creativity by using technologies that are common to the industry and process guidance, in a minimal timeframe.

To help organizations protect and integrate their IT investments into their cloud-native development strategies, IBM plans to deliver z/OS Cloud Broker for IBM Cloud Private. z/OS Cloud Broker will deliver the ability to access and deploy z/OS services into a Kubernetes-based cloud platform.

For business value with extreme agility, organizations look for two dimensions, operations and development, to enable modern development. With the z/OS Cloud Broker and IBM Cloud Private, both of these key areas and their stakeholders are intended to be fully supported:

- The IBM Z^(R) operations team can provide self-service access to z/OS resources and middleware, such as IBM CICS^(R) and IBM Db2^(R) on the IBM Cloud Private platform. The main mechanism for the operations team is to use the Cloud Provisioning and Management function of IBM z/OS MF to provide this new functionality. These resources, which currently span the z/OS middleware portfolio, are then instantly available to developers of any skill set without requiring IBM Z skills to consume and use.
- Within minutes with IBM Cloud Private, any developer can provision an instance of z/OS middleware and deploy this with other z/OS services, alongside public cloud or distributed services, or any combination of available services across architectures.

The power and repeatability of the Kubernetes-based IBM Cloud Private platform delivers a comprehensive, standard cloud development and deployment experience with the added strength and security features that only IBM Z technology can provide.

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Key requirements

z/OS Cloud Broker for IBM Cloud Private will require:

- One of the following IBM servers:
 - z13^(R) (all models)
 - z14 (all models)
 - LinuxONE Emperor I or II
 - LinuxONE Rockhopper I or II
- IBM Cloud Private base infrastructure
- z/OS V2.2 or z/OS V2.3
- z/OS MF set up and configured with Cloud Provisioning and Management for z/OS

Planned availability date

Second quarter, 2019

Previews provide insight into IBM plans and direction. Availability, prices, ordering information, and terms and conditions will be provided when the product is announced.

Description

Organizations look to container technology and associated orchestration and management platforms to build and then deploy modern, cloud-native applications. These organizations increasingly use private cloud platforms to access sensitive data and systems of record behind their firewalls. IBM intends to deliver z/OS Cloud Broker which is being designed to provide:

- Direct, self-service access of z/OS computing resources

z/OS Cloud Broker for IBM Cloud Private will be a software program that will install as an add-on to IBM Cloud Private. Its design will provide for direct, self-service access of z/OS computing resources by users through the IBM Cloud Private platform. These resources will run on IBM Z servers and can be accessed and published by using the z/OS MF software services catalog, and currently span the z/OS middleware portfolio.
- Connectivity to an industry-standard, K8s container runtimes

z/OS Cloud Broker will exploit the open-source Kubernetes container management platform. Kubernetes, a portable, extensible open-source platform for managing containerized workloads and services, facilitates both declarative configuration and automation. The simplicity of this platform led to widespread adoption across all industries and sizes of business. Kubernetes is also widely recognized as a leading platform for container management and orchestration that led to broad support across architectures and application development communities. z/OS Cloud Broker will connect z/OS into this rich Kubernetes ecosystem of components and tools to make it easier to deploy, scale, and manage applications.
- Ability to track and manage resources by using IBM Cloud Private

IBM Cloud Private will provide full tracking and details on all services that are accessed through its catalogs. These services can also be managed to ensure minimal disruption and impact to the user if these resources become unexpectedly unavailable. These features will let users know exactly what they are consuming and on what architecture and on which system they are running. There is also the added confidence that the IBM Cloud Private environment is protected and equipped for high-availability
- Control over resources and z/OS software subsystem instances

The operations team can maintain control over resources and z/OS software subsystem instances that are exposed through the configurable cloud security of z/OS Cloud Broker with z/OS configurable cloud security. The services that the z/OS Cloud Broker will make available to IBM Cloud Private are intended to be secured and controlled by:

 - z/OSMF
 - IBM Cloud Provisioning and Management for z/OS

With Cloud Provisioning and Management for z/OS, software service templates can be created to provision IBM middleware, such as:

 - IBM Customer Information Control System (CICS)
 - IBM Db2
 - IBM Information Management System (IMS™)
 - IBM MQ
 - IBM WebSphere® Application Server

Software instances that were provisioned from those templates can be tracked. The application architects will work with the z/OS system programmers to ensure that teams and individuals have access to the z/OS services that are required for their application development needs. When using the z/OS Cloud Broker and IBM Cloud Private, z/OS, system programmers will be in complete control of their z/OS environment. Along with defining z/OS security for access control, the system programmers will also be able to control the number of instances that can be provisioned through IBM Cloud Private.

- Access to service catalogs with z/OS services

z/OS Cloud Broker for IBM Cloud Private is being designed to expose z/OS services into IBM Cloud Private that exploits the multi-tenancy and rapid elasticity of z/OS. Any software service templates, which are published in Cloud Provisioning and Management for z/OS and are then linked to an existing z/OS Cloud Broker installation, will be automatically available in IBM Cloud Private. The use of teams and other mechanisms in IBM Cloud Private further add to the levels of granularity and access that individuals and groups can have to the z/OS services that are available in the IBM Cloud Private catalog.

Reference information

For information on IBM Cloud Private, see Software Announcements:

- [218-441](#), dated September 11, 2018
- [217-466](#), dated October 24, 2017

For information on the z13s^(R) servers, see Hardware Announcements:

- [116-058](#), dated June 7, 2016
- [116-002](#), dated February 16, 2016

For information on the z13 servers, see Hardware Announcements:

- [116-058](#), dated June 7, 2016
- [116-002](#), dated February 16, 2016
- [115-001](#), dated January 14, 2015

For information on the z14 servers, see Hardware Announcements:

- [118-075](#), dated October 2, 2018
- [117-044](#), dated July 17, 2017

For information on the z14 Model ZR1 server, see Hardware Announcements:

- [118-075](#), dated October 2, 2018
- [118-018](#), dated April 10, 2018

For information on the LinuxONE Rockhopper I server, see Hardware Announcement [116-002](#), dated February 16, 2016.

For information on the LinuxONE Rockhopper II server, see Hardware Announcements:

- [118-077](#), dated October 2, 2018
- [118-019](#), dated April 10, 2018

For information on the LinuxONE Emperor I server, see Hardware Announcements:

- [116-058](#), dated June 7, 2016
- [116-002](#), dated February 16, 2016

For information on the LinuxONE Emperor II server, see Hardware Announcements:

- [118-077](#), dated October 2, 2018
- [117-093](#), dated November 28, 2017
- [117-067](#), dated September 12, 2017

Statement of good security practices

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