

IBM Cloud Private (ICP) Solution Overview



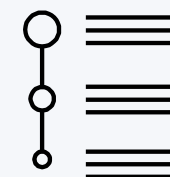
IBM Middleware & Open Source – e.g. Data, Analytics and Developer Services

Cloud-enabled middleware, application runtimes, messaging, databases & analytics to optimize current investments and rapidly innovate



Core Operational Services

To simplify Operations Management, Security, DevOps, and hybrid integration



Cloud Automation Manager

Infrastructure as Code for multi-cloud provisioning to public and on-prem private clouds



IBM Cloud Automation Manager



kubernetes

Kubernetes-based Container Platform

Industry leading container orchestration platform



App Catalog

Easily launch applications

Runs on existing IaaS: vmware®



NUTANIX
Your Enterprise Cloud Platform



OpenPOWER



System Z



IBM Spectrum

Dell, Cisco, NetApp, Lenovo, ...

ICP Centrally Automates Apps and Infrastructure

VM Based Content



IBM Content



Open Source Content



ISV Content

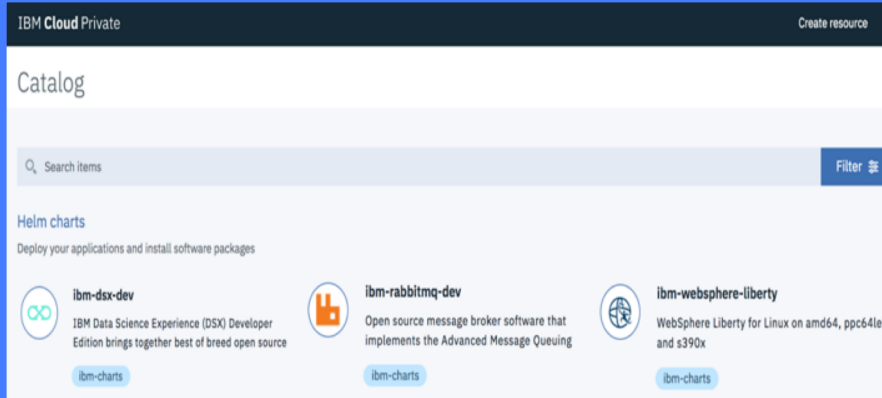


Your Container Content

Easily Add
Kubernetes-based
Apps to Catalog

+++

Manage Applications



Manage Container Clusters

Centralized Console for Container Management



Manage Your Infrastructure with Cloud-Ready Enterprise Systems and Hyperconverged Servers

PowerVC

openstack

NUTANIX
Your Enterprise Cloud Platform

Enterprise Class Power

Scale-out & Accelerated Power Systems

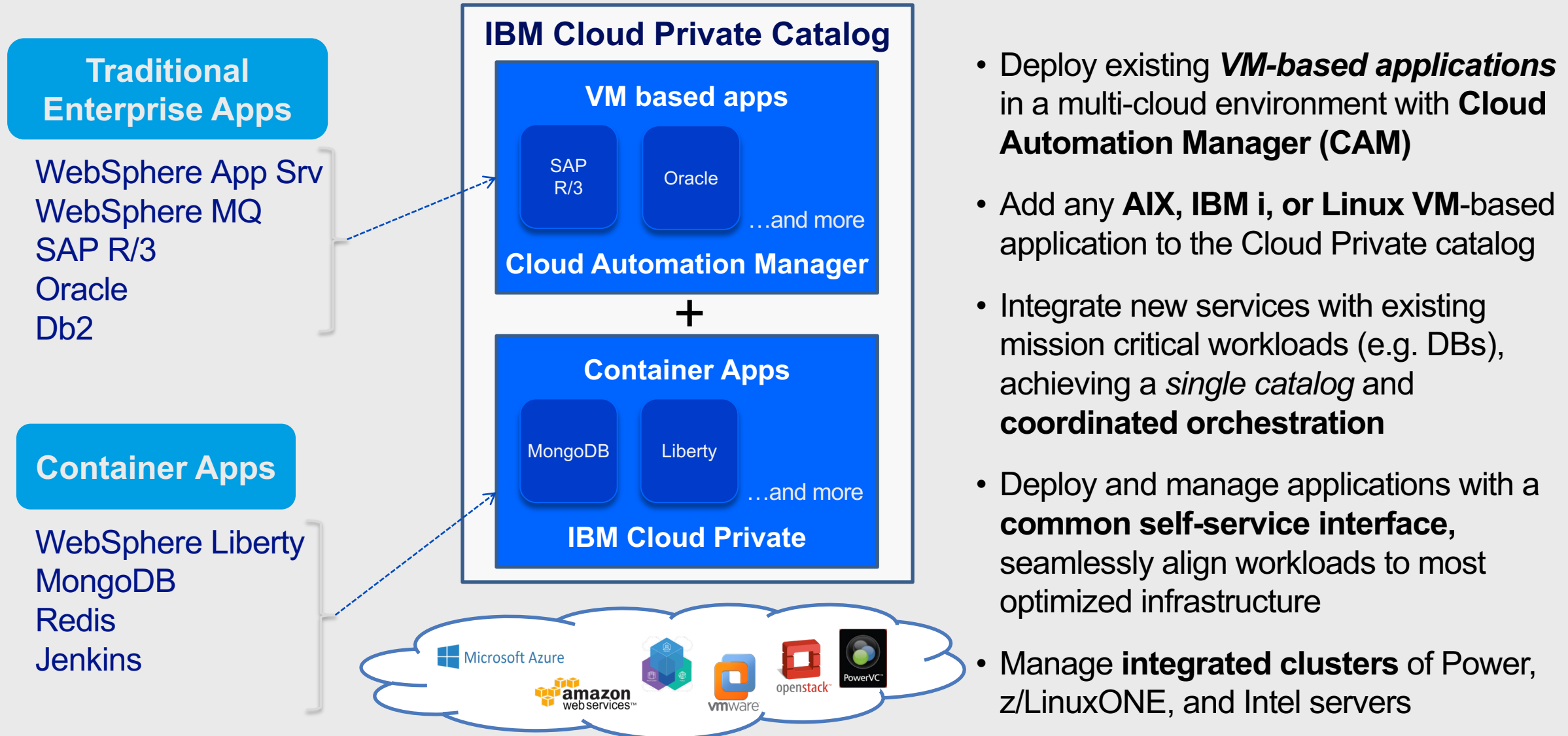
IBM Hyperconverged powered by Nutanix



IBM PowerAI



Cloud Enable your Mission Critical Applications *including existing applications running on AIX and IBM i*



- Deploy existing **VM-based applications** in a multi-cloud environment with **Cloud Automation Manager (CAM)**
- Add any **AIX, IBM i, or Linux VM-based** application to the Cloud Private catalog
- Integrate new services with existing mission critical workloads (e.g. DBs), achieving a *single catalog* and **coordinated orchestration**
- Deploy and manage applications with a **common self-service interface**, seamlessly align workloads to most optimized infrastructure
- Manage **integrated clusters** of Power, z/LinuxONE, and Intel servers

IBM Cloud Private on IBM Hyperconverged Systems powered by Nutanix

Simplifies Cloud Deployment & Management

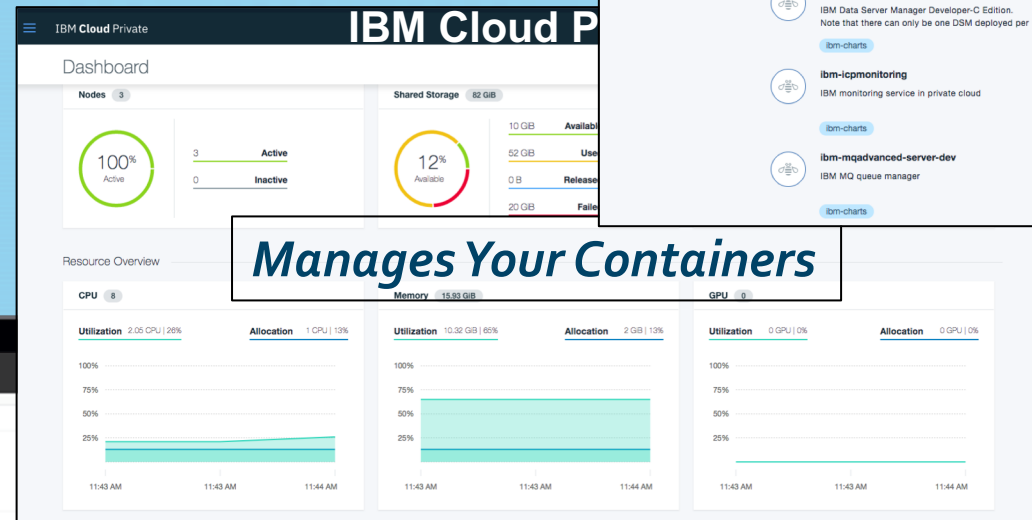


IBM Cloud Private

Search Offerings **Manages Your Applications** Filter

Helm Charts
Deploy your applications and install software packages

- db2**
IBM Db2 Server 11.1.2.2 - Developer-C Edition. Accept the license at <http://ibm.biz/db2-license>
[ibm-charts](#)
- ibm-datapower-dev**
A Helm chart for Kubernetes
[ibm-charts](#)
- ibm-dm-dev**
IBM Data Server Manager Developer-C Edition. Note that there can only be one DSM deployed per
[ibm-charts](#)
- ibm-dsx-dev**
IBM Data Science Experience (DSX) Developer Edition brings together best of breed open source
[ibm-charts](#)
- ibm-icpmonitoring**
IBM monitoring service in private cloud
[ibm-charts](#)
- ibm-integration-bus-dev**
IBM Integration Bus node
[ibm-charts](#)
- ibm-mqadvanced-server-dev**
IBM MQ queue manager
[ibm-charts](#)
- ibm-db2oltp-dev**
IBM Db2 Developer-C Edition 11.1.2.2
[ibm-charts](#)
- ibm-icplogging**
Log storage and search management solution
[ibm-charts](#)
- ibm-mongodb-dev**
NoSQL, document-oriented database that stores JSON-like documents with dynamic schemas.
[ibm-charts](#)
- ibm-postgres-dev**
Object-relational database management system (ORDBMS) with an emphasis on extensibility and on
[ibm-charts](#)
- ibm-websphere-liberty**
WebSphere Liberty for Linux on x86 and ppc64
[ibm-charts](#)



IBM Cloud Private


Dashboard

Nodes: 3 (100% Active, 0 Inactive)
Shared Storage: 82 GB (10 GB Available, 52 GB Use, 0 B Release, 20 GB Failed)

Resource Overview

CPU: 8 (Utilization: 2.05 CPU | 26%, Allocation: 1 CPU | 13%)
Memory: 15.93 GB (Utilization: 10.32 GB | 65%, Allocation: 2 GB | 13%)
GPU: 0 (Utilization: 0 GPU | 0%, Allocation: 0 GPU | 0%)

Manages Your Containers



Nutanix

demo02-ahv Home

AHV Nutanix 20150921
HYPERVISOR VERSION

Cluster-wide Controller IOPS: 7926 IOPS
Cluster-wide Controller IO B/W: 175.43 MBps
Cluster-wide Controller Latency: 0.38 ms

Storage Summary: 12.96 TB FREE (PHYSICAL)
Used: 264 TB, Capic: 1365 TB

VM Summary: 74 VMs

Hardware Summary: 4 1 NX1050
Cluster CPU Usage: 40.25%, Cluster Memory Usage: 54.39%

Info Alerts: 0, Events: 349

Manages Your Infrastructure and VMs

IBM Cloud Private Editions

New!

Community

Platform

- Kubernetes (+ Helm)
- Core services
- Discover and Try Content catalog (Containers)

**Freely Available in
Docker Hub**

Foundation* (within Power bundle)

Platform

- Kubernetes (+Helm)
- Core services
- Discover and Try Content catalog (Containers)

Bring your own software

- Entitlement to deployable software or Cloud Automation Manager not included
- Available only when ordered with Power Systems servers
- Upgrade to Cloud Native or Enterprise
- Golden e-configs and sizing guidance for easy ordering

Cloud Native

Platform

- Kubernetes (+ Helm)
- Core services
- Discover and Try Content catalog (Containers)

IBM Enterprise Software

- Microservice Builder
- WebSphere Liberty
- IBM SDK for node.js
- Cloud Automation Manager

Enterprise

Platform

- Kubernetes (+Helm)
- Core services
- Discover and Try Content catalog (Containers)

IBM Enterprise Software Cloud Native Edition, plus:

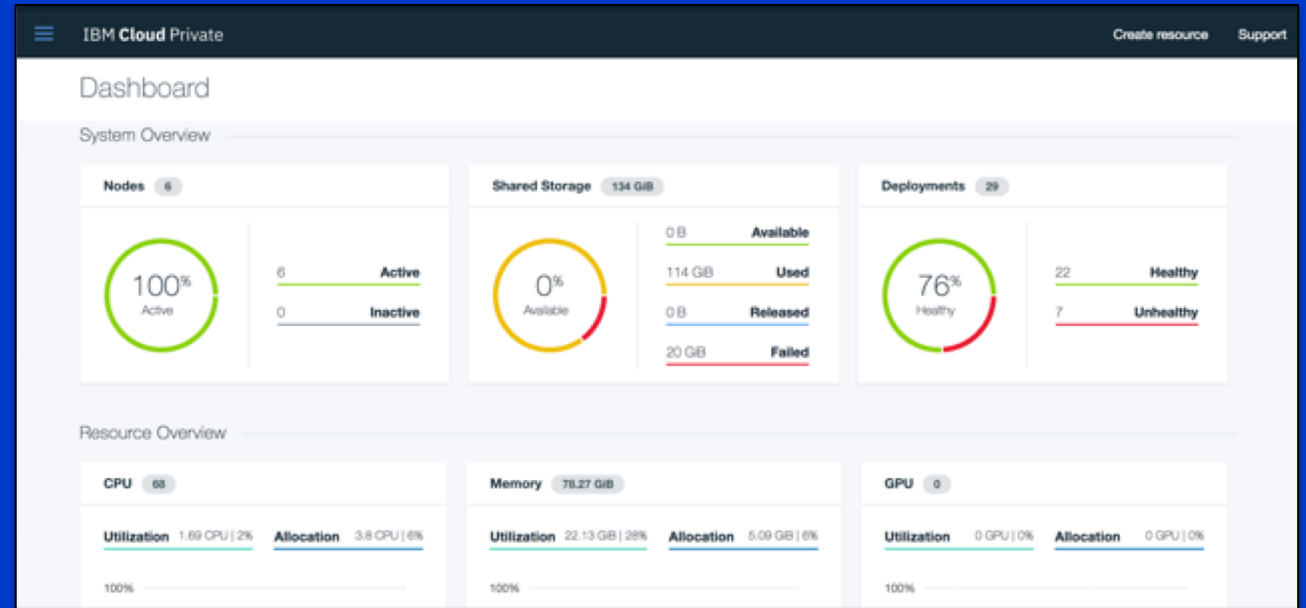
- WAS ND
- MQ Advanced
- API Connect Professional

* Available only when included with IBM Power Systems servers; order through PPA today and through AAS after July 27th, 2018

Try IBM Cloud Private today!

Guided and Proof of
Technology demos

Free Community Edition!



<http://ibm.biz/ICP-DTE>

Introducing IBM Cloud Private

- Kubernetes-based, open platform with PaaS and developer services
- Integrated operations management services – and flexibility to integrate with existing tools/processes
- Catalog of modernized and containerized IBM middleware and data services
- Untethered environment, providing complete control
- Runs on existing infrastructure : x86, Power Linux, zLinux (zLinux as worker node only.)
- Evolution of IBM Bluemix Local and IBM Spectrum Conductor for Containers

IBM Cloud Private Manage Your Applications

Search Offerings Filter

Helm Charts
Deploy your applications and install software packages

- db2: IBM Db2 Server 11.1.2.2 - Developer-C Edition. Accept the license at <http://ibm.biz/db2-license>
- ibm-datapower-dev: A Helm chart for Kubernetes
- ibm-dsm-dev: IBM Data Server Manager Developer-C Edition. Note that there can only be one DSM deployed per
- ibm-icpmonitoring: IBM monitoring service in private cloud
- ibm-mqadvanced-server-dev: IBM MQ queue manager
- ibm-datapower-dev: A Helm chart for Kubernetes
- ibm-dsx-dev: IBM Data Science Experience (DSX) Developer Edition brings together best of breed open source
- ibm-integration-bus-dev: IBM Integration Bus node
- ibm-postgres-dev: Object-relational database management system (ORDBMS) with an emphasis on extensibility and on
- ibm-db2oltp-dev: IBM Db2 Developer-C Edition 11.1.2.2
- ibm-icpllogging: Log storage and search management solution
- ibm-mongodb-dev: NoSQL, document-oriented database that stores JSON-like documents with dynamic schemas,
- ibm-websphere-liberty: WebSphere Liberty for Linux on x86 and ppc64

IBM Cloud Private Manage Your Container Cluster Create Resource Support

Dashboard

Nodes 3
100% Active
3 Active
0 Inactive

Shared Storage 82 GB
12% Available
52 GB Used
0 B Released
20 GB Failed

Deployments 14
100% Healthy
14 Healthy
0 Unhealthy

Resource Overview

CPU 8
Utilization 2 GB CPU | 26% Allocation 1 CPU | 13%

Memory 15.93 GB
Utilization 10.92 GB | 68% Allocation 2 GB | 13%

GPU 0
Utilization 0 GPU | 0% Allocation 0 GPU | 0%



Rapid
Innovation



Differentiated
Integration



Investment
Leverage



Management and
Compliance

IBM Cloud Private: Components



Kubernetes based container platform

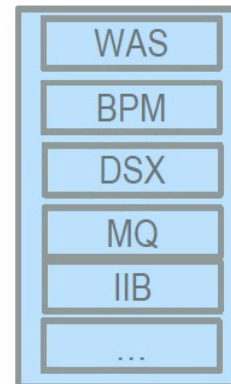
Industry leading container orchestration platform across private, dedicated & public clouds

Common Services

To simplify operations management, DevOps, and hybrid integration

Encryption & Key Mgmt.
Microservices Builder
Log collection
Identity & Access Control
Audit
Usage/Metering

IBM Middleware, Data & Analytics Services



Cloud Foundry

For prescribed application development & deployment

Optional- October 2017

IBM Cloud Private – Kubernetes Architecture

ICP Node types:

- **Boot** (x86/Power):

Used to Install and scale an ICP platform.

- **Master** (x86/Power):

Used to Manage your cluster and schedule and Monitor your deployment. (HA possible with multiple master)

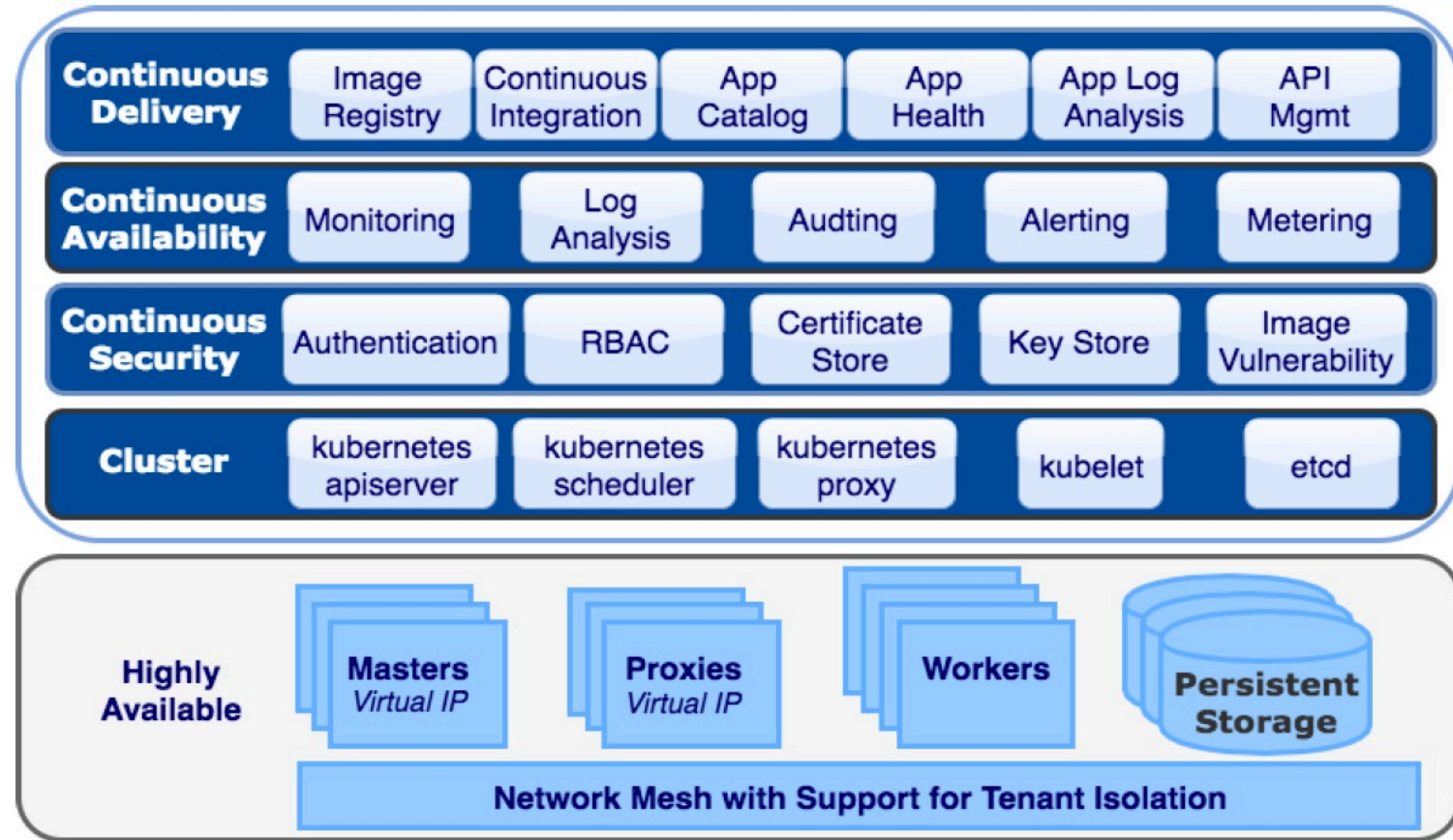
- **Worker** (x86/Power/Zlinux):

System which runs your containers. Can be arch mixed (x86,Power,Z)

- **Proxy** (x86/Power):

Transmits external request to the services created inside your cluster. (HA possible with multiple proxy)

All Node types can be installed on the same HW Instance.



[View Detailed Component List and Versions](https://www.ibm.com/support/knowledgecenter/SSBS6K_1.2.0/getting_started/components.html)

https://www.ibm.com/support/knowledgecenter/SSBS6K_1.2.0/getting_started/components.html

Kubernetes Concepts

Containers



A group of co-located containers

Volumes



A volume is a directory, possibly with some data in it, which is accessible to a Container as part of its filesystem.

Service



A service defines a set of pods and a means by which to access them, such as single stable IP address and corresponding DNS name.

Replica Set



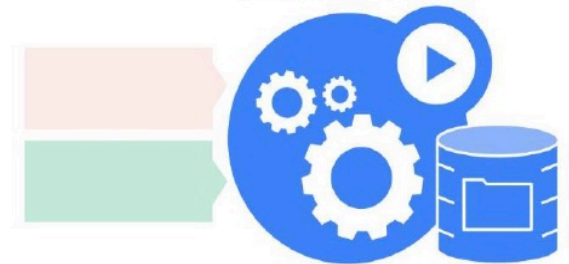
A replication controller ensures that a specified number of pod replicas are running at any one time.

Stateful Set



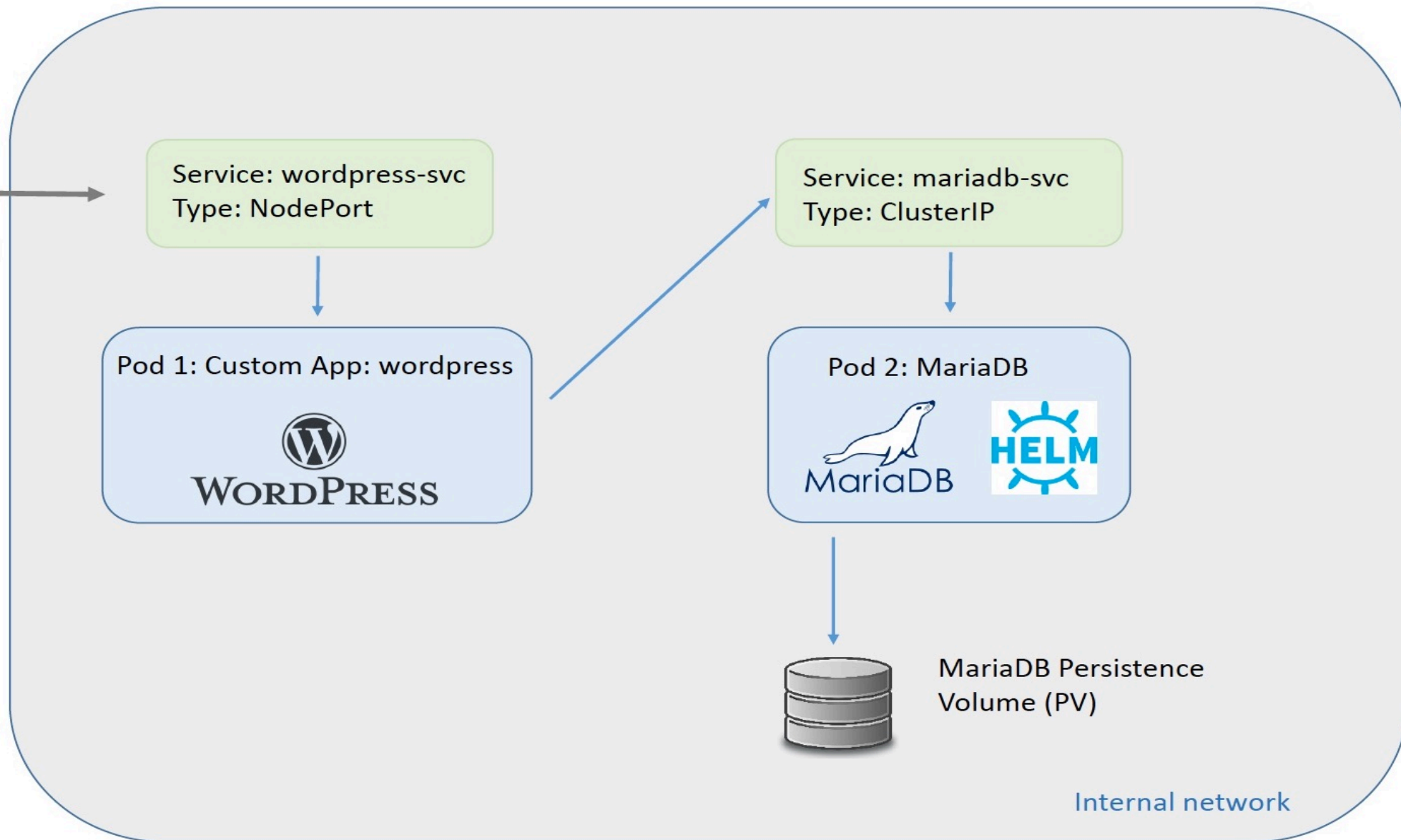
A StatefulSet is a Controller that provides a unique identity to its Pods. It provides guarantees about the ordering of deployment and scaling.

Labels



A label is a key/value pair that is attached to a resource, such as a pod, to convey a user-defined identifying attribute.

ICP demo: deploy a Wordpress application



IBM Cloud Private – Next Steps



Learn more

- ✓ ICP Product page: <http://ibm.biz/IBMCloudPrivate>
- ✓ ICP on Power DeveloperWorks page: <http://ibm.biz/ICP-Power-TechnicalCommunity>
- ✓ Linux on Power Development portal: <https://developer.ibm.com/linuxonpower>
- ✓ ICP Technical Community: <http://ibm.biz/ICP-TechnicalCommunity>
- ✓ ICP Knowledge Center: <http://ibm.biz/ICP-KnowledgeCenter>
- ✓ Introduction to ICP (video): https://www.youtube.com/watch?v=UL_jXJoRPdY
- ✓ ICP Overview (video): <https://www.youtube.com/watch?v=yzXA3qhfaq0>
- ✓ ICP on IBM Power (video): <https://www.youtube.com/watch?v=73LpA1Cmqcc>

See it in action

- ✓ Try ICP Community Edition for free: <http://ibm.biz/ICP-SignUp>
- ✓ YouTube ICP tutorials play list: <http://ibm.biz/ICP-YouTubeTutorials>

Get help

- ✓ Join the #ibm-cloud-private public Slack channel: <http://ibm.biz/ICP-Slack>
- ✓ ICP on Stack Overflow: <https://stackoverflow.com/questions/tagged/ibm-cloud-private>

