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

**Kubernetes-based Container Platform**
Industry leading container orchestration platform

**App Catalog**
Easily launch applications

**Runs on existing IaaS:**
- VMware
- OpenStack
- Nutanix
- SAP
- OpenPOWER
- IBM Power Systems
- 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

- Enterprise Class Power
- Scale-out & Accelerated Power Systems
- IBM Hyperconverged powered by Nutanix
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 Editions

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

**Foundation** (within Power bundle)
- Platform
  - Kubernetes (+ Helm)
  - Core services
  - Discover and Try Content catalog (Containers)

**Cloud Native**
- IBM Enterprise Software
  - Microservice Builder
  - WebSphere Liberty
  - IBM SDK for node.js
  - Cloud Automation Manager

**Enterprise**
- IBM Enterprise Software
  - Cloud Native Edition, plus:
    - WAS ND
    - MQ Advanced
    - API Connect Professional

**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

* Freely Available in Docker Hub

* 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: 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**
- WAS
- BPM
- DSX
- MQ
- IIB
- ...

**Cloud Foundry**
For prescribed application development & deployment

Optional - October 2017
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 masters)

- **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.
Kubernetes Concepts

Containers

A group of co-located containers

Pods

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

Volumes

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.

Service

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

Pod 1: Custom App: wordpress

Pod 2: MariaDB

Service: wordpress-svc
Type: NodePort

Service: mariadb-svc
Type: ClusterIP
IBM Cloud Private – Next Steps

**Learn more**
- ICP Knowledge Center: [http://ibm.biz/ICP-KnowledgeCenter](http://ibm.biz/ICP-KnowledgeCenter)
- Introduction to ICP (video): [https://www.youtube.com/watch?v=UL_jXJoRPdY](https://www.youtube.com/watch?v=UL_jXJoRPdY)
- ICP Overview (video): [https://www.youtube.com/watch?v=yzXA3qhfaq0](https://www.youtube.com/watch?v=yzXA3qhfaq0)

**See it in action**

**Get help**
- Join the #ibm-cloud-private public Slack channel: [http://ibm.biz/ICP-Slack](http://ibm.biz/ICP-Slack)
- ICP on Stack Overflow: [https://stackoverflow.com/questions/tagged/ibm-cloud-private](https://stackoverflow.com/questions/tagged/ibm-cloud-private)