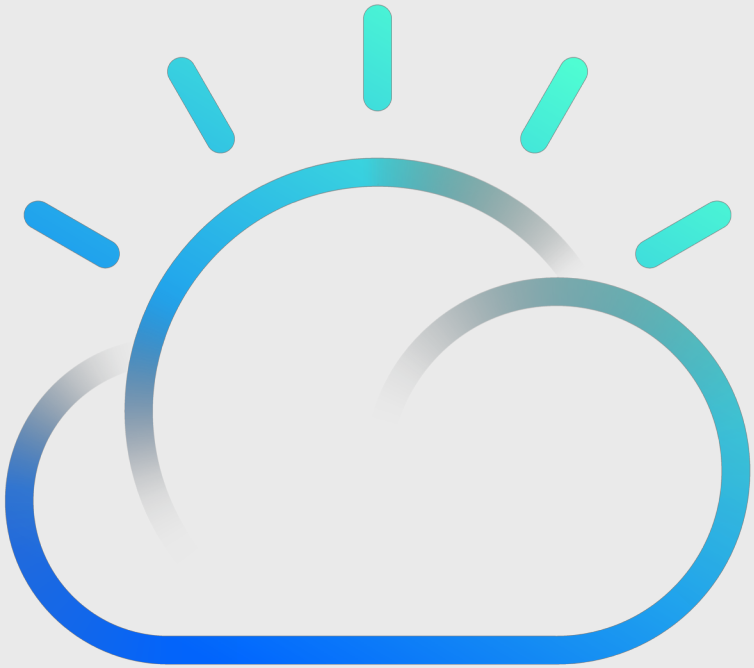
IBM Cloud Private Installation



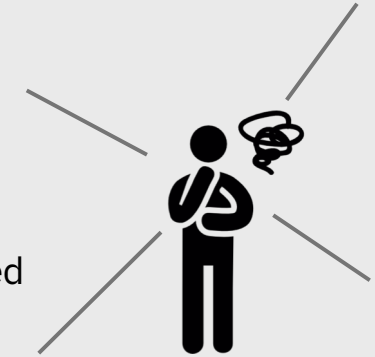
IBM Cloud

Things to consider prior to installation

Environment
dev, test, staging, prod

Workload Type
middleware, data, native frameworks

Platform
VMware, OpenStack, Public / Hosted



Persistent Storage
NFS, GlusterFS, vSphereVolumes, Ceph, IBM

OS / Architecture
x86 Linux (RHEL, Ubuntu),
ppc64le Power Linux (RHEL),
zLinux (RHEL)

Network Topology
Cluster network (Network CIDR)
Service network (Service Cluster IP Range)

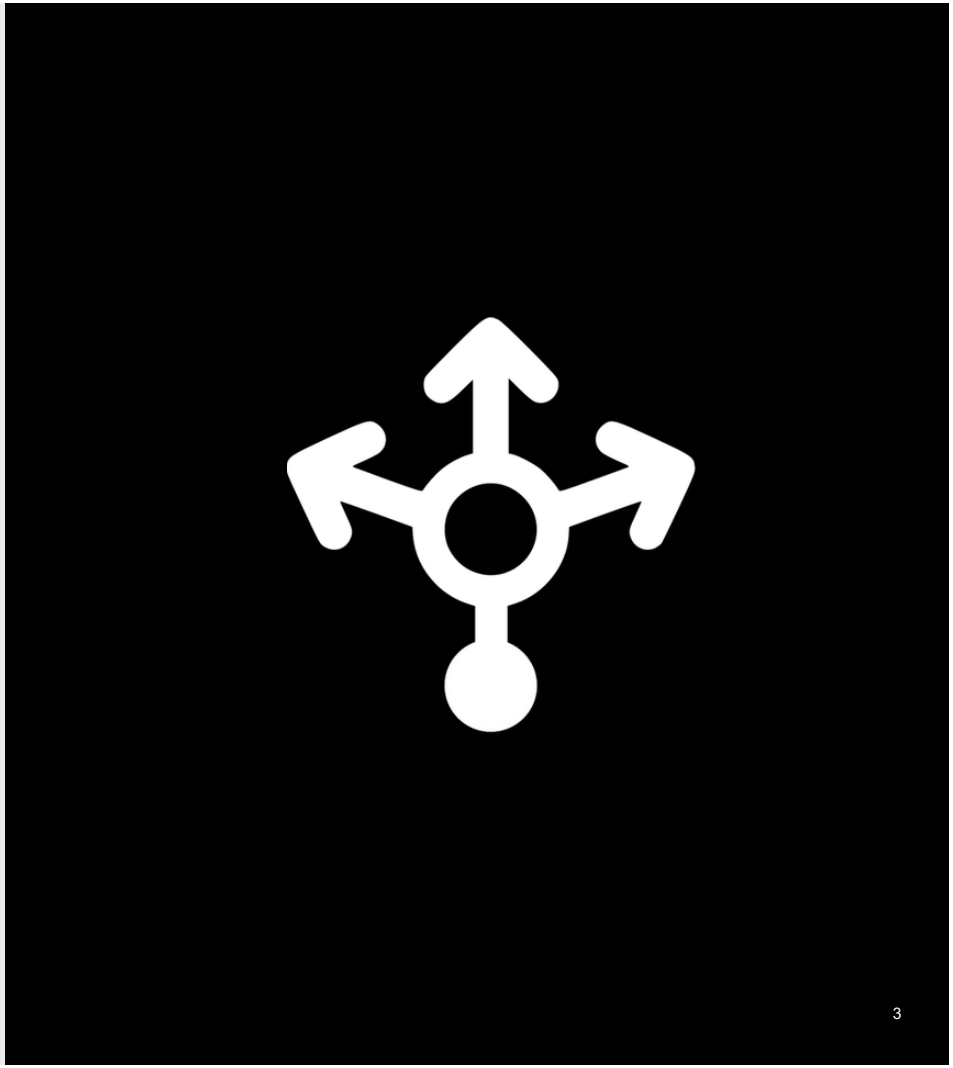
Load balancers and proxies

Master node load balancer

Proxy node load balancer

Ingress server

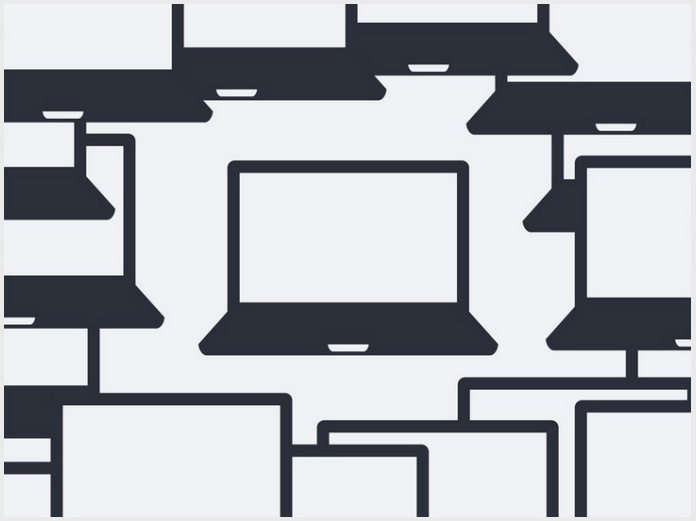
Installing ICP with an Internet proxy in front of it has special considerations



“Air gap” installation considerations

Boot node serves as a bridge/jump server

- Boot node has access to Internet
- Boot node has access to all ICP cluster machines



ICP private docker registry

ICP private Helm repository

Will build pipeline have access to public dockerhub.com?

Will ICP have access to the IBM Helm chart repository?

Performing an offline installation on Medium:
https://medium.com/ibm-cloud/ibm-cloud-private-offline-installation-eb730ae13bfc

Review system requirements (See the Knowledge Center)

Hardware requirements
The Knowledge Center provides minimum requirements. CASE has some recommendations https://github.com/ibm-cloud-architecture/refarch-privatecloud/blob/master/Sizing.md

Supported operating systems

Docker considerations
Highly recommended to use the IBM provided Docker distribution

Prepare your nodes

Check connectivity
Verify key ports are open and free from use

Configure DNS or /etc/hosts
Configure according to Knowledge Center and include all hosts in the cluster

Additional considerations
python, NTP, SSH, socat

IBM Cloud Private Community Edition
Single or multi-node cluster for testing purposes only
No charge and not upgradeable to paid-for versions
Not available features: High Availability, CF, CAM, and VA

IBM Cloud Private Cloud Native
Single or multi-node cluster production environment
Selection of bundled components
Ability to add extra components

IBM Cloud Private Enterprise Edition
Single or multi-node cluster production environment
Includes all ICP available Cloud Native bundled components plus extras
Customizable with extra components

Prepare the boot node

Extract images and load into Docker

Extract from the installer images

Configure SSH to all cluster nodes

Move install images into /cluster/images

Customize the cluster

- General settings
- Kubernetes options
- Log settings
- Network options
- Docker config
- Proxy & Master HA settings
- User settings
- Cloud provider setting
- Network encryption
- Environment Isolation
- Configure for HA

Deploy the Cluster

Snapshot your nodes

Docker run the deployment
Use –vvv for verbose output
Use tee to store results

Verify the results and see troubleshooting upon failure:
https://www.ibm.com/support/knowledgecenter/SSBS6K_3.1.0/troubleshoot/troubleshoot.html

Check UI, status of pods (ready), status of nodes, installation log

Post Installation

Install kubectl, Helm CLI and ICP CLI

Install a sample application:

- Blue Compute (comprehensive microservices application)
- Kube Toy (fun Hello-World)
- Bookinfo

Install add-on charts such as Istio