INF Project Hardware Requirements

INF bare metal All-in-one Simplex (1 node)

This section describes the hardware requirements and server preparation for a INF **bare metal All-in-one Simplex** deployment configuration.

The All-in-one Simplex (AIO-SX) deployment option provides all three cloud functions (controller, worker, and storage) on a single server with the following benefits:

- Requires only a small amount of cloud processing and storage power
- Application consolidation using multiple containers or virtual machines on a single pair of physical servers
- A storage backend solution using a single-node CEPH deployment

Figure 1: All-in-one Simplex deployment configuration

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Minimum hardware requirements for AIO-SX

The recommended minimum hardware requirements for bare metal servers for various host types are:

Minimum Requirement	All-in-one Controller Node
Number of servers	1
Minimum processor class	- Dual-CPU Intel® Xeon® E5 26xx family (SandyBridge) 8 cores/socket or - Single-CPU Intel® Xeon® D-15xx family, 8 cores (low-power/low-cost option)
Minimum memory	32 GB
Primary disk	500 GB (It's better to be SSD or NVMe)
Additional disks	- 1 or more 500 GB for Ceph OSD - Recommended, but not required: 1 or more SSDs or NVMe drives for Ceph journals (min. 1024 MiB per OSD journal)
Minimum network ports	- OAM: 1x1GE - Data: 1 or more x 10GE (optional)
BIOS settings	- Hyper-Threading technology enabled - Virtualization technology enabled - VT for directed I/O enabled - CPU power and performance policy set to performance - CPU C state control disabled - Plug & play BMC detection disabled

INF bare metal All-in-one Duplex (2 nodes)

This section describes the hardware requirements and server preparation for a INF **bare metal All-in-one Duplex** deployment configuration.

The All-in-one Duplex (AIO-DX) deployment option provides a pair of high availability (HA) servers with each server providing all three cloud functions (controller, worker, and storage).

An AIO-DX configuration provides the following benefits:

- Only a small amount of cloud processing and storage power is required
- Application consolidation using multiple containers or virtual machines on a single pair of physical servers
- High availability (HA) services run on the controller function across two physical servers in either active/active or active/standby mode
- A storage back end solution using a two-node CEPH deployment across two servers
- Containers or virtual machines scheduled on both worker functions
- Protection against overall server hardware fault, where
- All controller HA services go active on the remaining healthy server
- All virtual machines are recovered on the remaining healthy server

Figure 2: All-in-one Duplex deployment configuration

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Minimum hardware requirements for AIO-DX

The recommended minimum hardware requirements for bare metal servers for various host types are:

Minimum Requirement	All-in-one Controller Node
Number of servers	2
Minimum processor class	- Dual-CPU Intel® Xeon® E5 26xx family (SandyBridge) 8 cores/socket or - Single-CPU Intel® Xeon® D-15xx family, 8 cores (low-power/low-cost option)
Minimum memory	32 GB
Primary disk	500 GB (It's better to be SSD or NVMe)
Additional disks	1 or more 500 GB for Ceph OSD - Recommended, but not required: 1 or more SSDs or NVMe drives for Ceph journals (min. 1024 MiB per OSD journal)
Minimum network ports	- Mgmt/Cluster: 1x1GE - OAM: 1x1GE - Data: 1 or more x 10GE (optional)
BIOS settings	- Hyper-Threading technology enabled - Virtualization technology enabled - VT for directed I/O enabled - CPU power and performance policy set to performance - CPU C state control disabled - Plug & play BMC detection disabled

INF bare metal All-in-one Duplex + extra worker nodes (at least 3 nodes)

This section describes the hardware requirements and server preparation for a INF **bare metal All-in-one Duplex + extra worker nodes** deployment configuration.

Figure 3: All-in-one Duplex + extra workers deployment configuration

Note: the controllers in the figures include all three cloud functions (controller, worker and storage)

Minimum hardware requirements for AIO-DX + extra worker nodes

The recommended minimum hardware requirements for bare metal servers for various host types are:

Minimum Requirement	All-in-one Controller Node	Worker Node
Number of servers	2	1-10
Minimum processor class	• Dual-CPU Intel® Xeon® E5 26xx family (SandyBridge) 8 cores/socket	
Minimum memory	32 GB	16 GB
Primary disk	500 GB (It's better to be SSD or NVMe)	120 GB
Additional disks	• 1 or more 500 GB for Ceph OSD • Recommended, but not required: 1 or more SSDs or NVMe drives for Ceph journals (min. 1024 MiB per OSD journal)	
Minimum network ports	• Mgmt/Cluster: 1x1GE • OAM: 1x1GE	• Mgmt/Cluster: 1x1GE • Data: 1 or more x 10GE
BIOS settings	• Hyper-Threading technology enabled • Virtualization technology enabled • VT for directed I/O enabled • CPU power and performance policy set to performance • CPU C state control disabled • Plug & play BMC detection disabled	

INF Minimum VM configuration for each deployment

INF can also be deployed in VM and the minimum VM configuration for each deployment are:

Minimum Requirement	All-in-one Controller Node	Worker Node
Number of vcpu	8	6
Minimum Memory	32G	16G
Disks	Disk1: 250G Disk2: 100G	Disk1:120G
Boot Order	Enable the Network option. Order should be: CD/DVD, Hard Disk, Network.	the same as AIO
Minimum network ports	• OAM (need external access) • Mgmt/Cluster	• Mgmt/Cluster • Data