Deployment Requirements

Version 2.4 for OCP

Contents

Ionir Software Requirements

Kubernetes Worker Node OS

- Supported Operating systems are:
  - RHEL 8.3 / RHCOS 3.11
  - CentOS 8.3
  - Ubuntu 20.04.1 LTS (in validation)
  - SLES15SP2 (in validation)
- Operating system must be 64-bit.
- Installing Extra-Modules is required on each Linux OS

Required Settings

For best performance using SR-IOV we recommend that this setting is enabled in the system grub file **on each node**:

- For Intel processors - intel_iommu must be set to on (intel_iommu=on)
- For AMD processors - amd_iommu must be set to on (amd_iommu=on)

The following modules must be loaded and working:

- NVME/TCP - nvme_tcp (modprobe nvme_tcp)
- VFIO - vfio-pci (modprobe vfio_pci)

The following parameters must be set:

- 2MB hugepages (vm.nr_hugepages) must be set to 1024 or higher
- arp_ignore must be set to 1

Kubernetes Distributions

Ionir supports Kubernetes version 1.17 and higher, and distributions such as OCP, Rancher RKE and Kubeadm based distributions. If your specific distribution is not listed, please contact support at support@ionir.com

RedHat Openshift Container Platform (OCP) Support

Support for OCP is through an Operator which will be installed that controls the entire lifecycle of the data platform. Ionir version 2.4 supportsOCP 4.6. For more information visit RedHat Certified OperatorHub.

Ionir Resource Requirements

Bare-Metal Deployment

Kubernetes Worker Nodes

The following are the **minimum resources required** to run Ionir Cloud native storage solution. Additional resources and capacity needed to run the customers apps and services on top per customer design.

CPU Type	Haswell or higher (Intel), EPYC or higher (AMD) (AVX2 instruction set required)
Number of physical Cores	8 Cores
Physical Memory	32GB

Network Interface	Ionir requires a dedicated virtual (using SR-IOV **recommended**) or physical NIC
	• Supported NIC manufacturers:
	  ○ Mellanox - connectx-5 recommended
	  ○ Intel
	  ○ Broadcom
	• NIC must be 10Gbe or higher (25Gbe is recommended for production environments)

Media	• Up to 20 Local NVMe SSDs on each worker node • NVMe media device must be reported as an NVMe device by the Linux system • No filesystem can exist on the NVMe media • Each drive should be fully accessible by Ionir (all partitions will be deleted) • NVMe Media size - 512GB
Boot Media	The boot device must be an SSD with at least 128 GB of free space.

Physical Capacity Requirements

The minimum cluster size is determined by the minimum number of Ionir nodes that have media **installed locally.**

- For a 3-node deployment - 3.6 TB in total
- For a 5-node deployment and higher - 6TB in total

Networking Requirements

Ionir creates a high performance dedicated virtual network for storage traffic, and hence requires that the underlying network infrastructure provide sufficient performance:

- For production environments network speed must be 25 Gb or higher. 10 Gb may be used in non-production environments.
- Full IP connectivity is required between all nodes in the cluster.
- SR-IOV must be enabled on the NIC as best practice. Optionally use multiple physical adapters if applicable.
    - If SR-IOV is used, VFS must be enabled using the NIC management software to provide a second network interface
- Full IP connectivity is required between all nodes **between clusters for mobility.**

Pre-Install Node Network Configuration

Ionir creates a dedicated high-speed data network between all worker nodes in the cluster. This network is used for communication between the Ionir pods and provides a high performance datapath. This network can be virtual using the same physical interface as that used by Kubernetes by enabling SR-IOV on the network adapters, or it can be configured using dedicated NICs.

Note: Ionir datapath network must be configured with a unique subnet. This network does not require a default gateway and is internal only.

The following configuration is required for each worker node in the cluster:

- Set a second **static IP** for the node on the interface for the data path network (physical or virtual function). This datapath IP must be part of the datapath subnet.
- MTU must be set to 9000 or higher (Jumbo frames).
- A Kubernetes label must be set that states the datapath IP of the node must be added to **each worker node**. To set the label run the following command for each worker node:

```
kubectl label node <workerNodeName> datapath_ni=<NodeDatapathIP>
```

Other Requirements

Load Balancer

An external load balancer (such as MetalLB) is required on the Kubernetes cluster to provide an external accessible IP address for the Ionir platform. This loadbalancer resource should be configurable at the Kubernetes level using standard services.

Note: When working with multiple clusters load balancers of different clusters must not overlap

Access to Install Images

Prior to installation contact sales support to get ***ionir license key.***

All nodes require direct access to an image registry (either private or public) to be able to pull the Ionir images and other 3rd party images.

NTP Requirements

It is highly recommended that the time on all nodes be synchronized using NTP.