

## Before you Begin Using KumoScale

This section describes the KumoScale™ software architecture and provides a high-level overview of how to integrate it into a data center environment.

The information in this document is geared towards users of KumoScale in Appliance mode or Managed mode with a custom Kubernetes cluster. It provides details on how to use KumoScale Operators to configure components that support provisioning and monitoring. Before you begin any implementation, ensure that your environment meets the requirements as documented in the following sections.

### Environment Requirements

This section lists the system and user requirements needed to complete the activities documented in this manual.

#### KumoScale License

KumoScale supports both trial and production Licenses. A **trial license** has an expiration date 90 days after the day the first storage node was added to the cluster. No more than five (5) nodes may be added under a trial license. A **production license** has no such restriction. You will not be able to successfully deploy storage nodes without a valid license.

KIOXIA provides users with a license key to configure the license as part of installation. Confirm that your current KumoScale software installation has been configured with a valid license. If you are moving from a trial to a production license, see Replacing the License under [Maintenance, Troubleshooting, and Support](#).

Contact your KIOXIA representative if you have not been provided a key or need further assistance with licensing.

#### Hardware and Software Requirements

Confirm that you are using KumoScale software in a compatible environment by reviewing the requirements specified in the appropriate installation document for KumoScale ([Managed Mode](#) or [Appliance Mode](#)). You may also find it helpful to run the Dependencies Navigator located on the KumoScale software website before starting any project with KumoScale software (this is no longer available).

#### KumoScale Storage Cluster Configuration Requirements for Appliance Mode

When using KumoScale in Appliance mode, a storage cluster is optimally configured with an odd number of masters on the same subnet. For single node deployments, one (1) master is sufficient. High Availability (HA) systems should contain at least three (3) masters. Table 1 shows possible cluster configurations. Storage nodes may be added to a cluster at any time.

**Note:** The servers must all be on the same subnet.

KumoScale Cluster Configurations for Appliance Mode			
Cluster size	Number of Master Nodes	Number of Worker Nodes	Deployment Environment
1	1	0	No resiliency
2	1	1	No resiliency
3	3	0	Odd number of masters
4	3	1	
5	5	0	Best practice
6	5	1	
7	5	2	
8	5	3	
9	5	4	
Etc,..			

#### Network Requirements

For networking requirements, refer to the appropriate installation document for KumoScale ([Managed Mode](#) or [Appliance Mode](#)).

#### Documentation

For high-level information on KumoScale software components and features, we recommend that you read the [KumoScale System Overview](#).

The User Guide includes the following topics:

- [KumoScale Software Overview](#) describes the KumoScale software architecture and outlines the components used for data center provisioning.

- [Deploying a KumoScale Storage Provisioning System](#) describes the high-level process to deploy a KumoScale storage provisioning system.
- [Creating and Managing Storage Nodes in KumoScale](#) provides all the steps and parameters for configuring storage nodes used to provision storage. Example storage node Custom Resources Definitions (CRD) illustrate several network configurations.
- [Role Based Access Control \(RBAC\)](#) describes how to create and manage users when using KumoScale in Appliance mode. This feature is not available in Managed mode.
- [Authentication](#) explains how tokens are used for local and external authentication.
- [Setting up Initiators](#) describes how to set up application initiators to support your KumoScale deployment.
- [Tenant Management](#) explains how to create and manage multiple tenants using CRD.
- [SSD Management](#) explains how to use operators to manage SSD.
- [Telemetry](#) provides instructions on how to configure a telemetry server for KumoScale software, what the output is, and additional statistics generated by KumoScale software.
- [Syslog](#) provides instructions on how to configure a Syslog server for KumoScale software and expected message format.
- [Logging, Monitoring, and Alerting in KumoScale Software](#) details how to collect and use data available with KumoScale.
- [Volume Management](#) summarizes additional storage configurations available by using KumoScale interfaces such as the REST API.
- [Maintenance, Troubleshooting, and Support](#) provides tips for managing your environment and resolving issues that may be encountered using KumoScale software.

**Note:** For security reasons, valid IP addresses and subnets are not provided in KumoScale documentation. You will need to specify valid IP addresses in your implementation.

Next: [KumoScale Software Overview](#)

