Summary

In this chapter, you learned:

- The two main components of the cephadm utility:
  - The `cephadm shell` runs a bash shell within a specialized management container. Use the cephadm shell to perform cluster deployment tasks and cluster management tasks after the cluster is installed.
  - The `cephadm orchestrator` provides a command-line interface to the orchestrator ceph-mgr modules. The orchestrator coordinates configuration changes that must be performed cooperatively across multiple nodes and services in a storage cluster.
- As of version 5.0, all Red Hat Ceph Storage cluster services are containerized.
- Preparing for a new cluster deployment requires planning cluster service placement and distributing SSH keys to nodes.
- Use cephadm to bootstrap a new cluster:
  - Installs and starts the MON and MGR daemons on the bootstrap node.
  - Writes a copy of the cluster public SSH key and adds the key to authorized keys file.
  - Writes a minimal configuration file to communicate with the new cluster.
  - Writes a copy of the administrative secret key to the key ring file.
  - Deploys a basic monitoring stack.
- Use the `cephadm-preflight.yml` playbook to verify cluster host prerequisites.
- Assign labels to the cluster hosts to identify the daemons running on each host. The `_admin` label is reserved for administrative nodes.
- Expand cluster capacity by adding OSD nodes to the cluster or additional storage space to existing OSD nodes.