# Oracle® Linux Storage Appliance

## How-To Guide

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## About this document

This guide describes the Oracle Linux Storage Appliance that is delivered as an Oracle Cloud Infrastructure image. The guide includes overview information, installation instructions, and a basic use summary.

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# Chapter 1 Installing the Oracle Linux Storage Appliance

This chapter describes how to install the Oracle Linux Storage Appliance. Requirements and prerequisite tasks are also described here.

## 1.1 Oracle Linux Storage Appliance Installation Prerequisites

Before you install the Oracle Linux Storage Appliance, review the following information and perform all of the prerequisite tasks that are described here:

- **Obtain an Oracle Cloud Infrastructure account.**

  You must have an Oracle Cloud Infrastructure account that enables you to create a BM.DenseIO1.36 shape instance.

  For more information, go to https://cloud.oracle.com/infrastructure/compute.

- *Configure ports for the virtual cloud network.*

  To access the appliance and its services, you must add the required ports to the stateful Ingress rules, which is located in the default Security List for the virtual cloud network. The appliance will then be associated with each of these ports, allowing traffic on that port for the specified protocol, service, and function.

  The following table lists each of the ports that can be configured.

  **Table 1.1 Ports to Associate With the Virtual Cloud Network**

| Service | Destination Port Range | Protocol Type | Function |
|---|---|---|---|
| NFS | `111` | TCP | NFS |
| NFS | `2049` | TCP | NFS |
| Mountd | `111` | UDP | Autofs/Showmount |
| `Httpd` | `443` | TCP | HTTPS |
| statd | `662` | TCP | NFS `statd` |
| Mountd | `20048` | TCP | Autofs/Showmount |
| `lockd` | `32803` | TCP | NFS `lockd` |
| `ssh` | `22` | TCP | SSH |

  When adding the port configuration, use the following format:

  **Source:** *`CIDR-range-of-your-VCN`*

  **IP Protocol:** *`IP-protocol`*

  **Source Port Range:** All

  **Destination Port Range:** *`port-range`*

  For example, if your VCN CIDR range is `172.16.0.0/16`, you would use the following port configuration:

  **Source:** `172.16.0.0.16`

**IP Protocol:** TCP

**Source Port Range:** All

**Destination Port Range:** `111`

The port configuration in the previous example provides access to the appliance from any instance in your VCN. You can restrict access to a smaller set of instances by changing the source CIDR as required. For more details, see https://docs.us-phoenix-1.oraclecloud.com/Content/Network/Concepts/securitylists.htm.

Note that the source CIDR range for SHH should be `0.0.0.0/0` so that you can access SSH remotely. See Step 2g. of Section 1.2, “Installing the Oracle Linux Storage Appliance Compute Instance” for instructions on accessing the web interface over SSH.

- **Import the appliance image.**

  1. In the Oracle Cloud Infrastructure console, from the Compute menu, select the Image option.
  2. Click Import Exported Image.
  3. Select the compartment in which the image will be visible.
  4. Provide a name for the image.

     Note the name of the image, as this is the image that you will select in Step 2c. of Section 1.2, “Installing the Oracle Linux Storage Appliance Compute Instance”.
  5. In the Object Storage URL field, type the URL to the latest image, which is available at:

     http://www.oracle.com/technetwork/server-storage/linux/technologies/default-3868073.html

     When imported, the appliance image will be available in the Custom Image section.
  6. **Perform NFS client installation (applies to Oracle Linux 7 Update 3 only)**

     For instructions and additional information, see Section 1.3, “Mounting NFS Shares Created on the Appliance”.

# 1.2 Installing the Oracle Linux Storage Appliance Compute Instance

Install a compute instance as follows:

1. In the Oracle Cloud Infrastructure console, from the Compute menu, click Launch Instance.
2. Configure the following parameters for the instance:
   a. Name the instance.
   b. Select the availability domain.
   c. Select the appliance image that you imported previously, which is located in the Custom section.

      Refer to the "Import the appliance" instructions in Section 1.1, “Oracle Linux Storage Appliance Installation Prerequisites”.
   d. Select the BM.DenseIO1.36 shape instance.

e. Select the virtual cloud network that has its ports configured with the appropriate information.

   Refer to Section 1.1, “Oracle Linux Storage Appliance Installation Prerequisites”.

f. Define any remaining parameters for the instance as you normally would for any other instance.

g. Gain secure access to the web interface by using SSH to port forward, as follows:

   i. On you local Linux or macOS client, run the following command:

   ```
   # ssh -N -L 8443:127.0.0.1:443 opc@public-IP-of-the-NFS-appliance
   ```

   The command will not return.

   ii. Open a browser and go https://localhost:8443, then accept the self-signed certificate to continue.

## 1.3 Mounting NFS Shares Created on the Appliance

You access the shares that you create on client VMs over NFS by using a standard `mount` command, for example:

```
# mount appliance-ip:share-path destination path
```

For more information about mounting file systems, see http://docs.oracle.com/cd/E52668_01/E54669/html/index.html#.

The Oracle Linux 7 Update 3 installation image does not install NFS packages by default. To mount NFS shares on this release, you must install the `nfs-utils` package on the client:

```
# yum install -y nfs-utils
```

**Note**

If you want to make automount directories available, such as `/net`, you must first install the `autofs` package.