Practice: Create a Block Volume

Try this hands-on lab with the Oracle Cloud Free Tier. If you do not have a free account, click here to get one.

Overview

A common usage of Block Volume is adding storage capacity to an Oracle Cloud Infrastructure Compute instance.

- Once you have created a Compute instance and set up your VCN, you can create a block storage volume through the Console or API.
- Once created, you attach the volume to an instance using a volume attachment.
- Once attached, you connect to the volume from your instance's guest OS using iSCSI or paravirtualized mode. The volume can then be mounted and used by your instance.

Tasks

1. Log into your Oracle Cloud Free Tier Account
2. Log in to OCI Console and open the navigation menu.
3. Navigate to **Menu** and click **Storage** and then click **Block Volume**.
4. Click **Create Block Volume** and enter the following details:
   - **Name:** `OCI_BV`
   - **Compartment:** *Ensure your Compartment has been selected*
   - **Availability Domain:** *It **must** be the same as the AD you chose for your instance*
   - **Size**: Set size to **50 GB**.
   - **Compartment for Backup Policies:** *Ensure your Compartment has been selected*
   - **Backup Policy:** Bronze
   - **Cross Region Replication: Off**
   - **Encryption:** Go with the default option of *Encryption using Oracle-Managed Keys*.

   Note: The size must be between **50 GB** and **32 TB**. You can choose in 1 GB increments within this range. The default is 1024 GB.

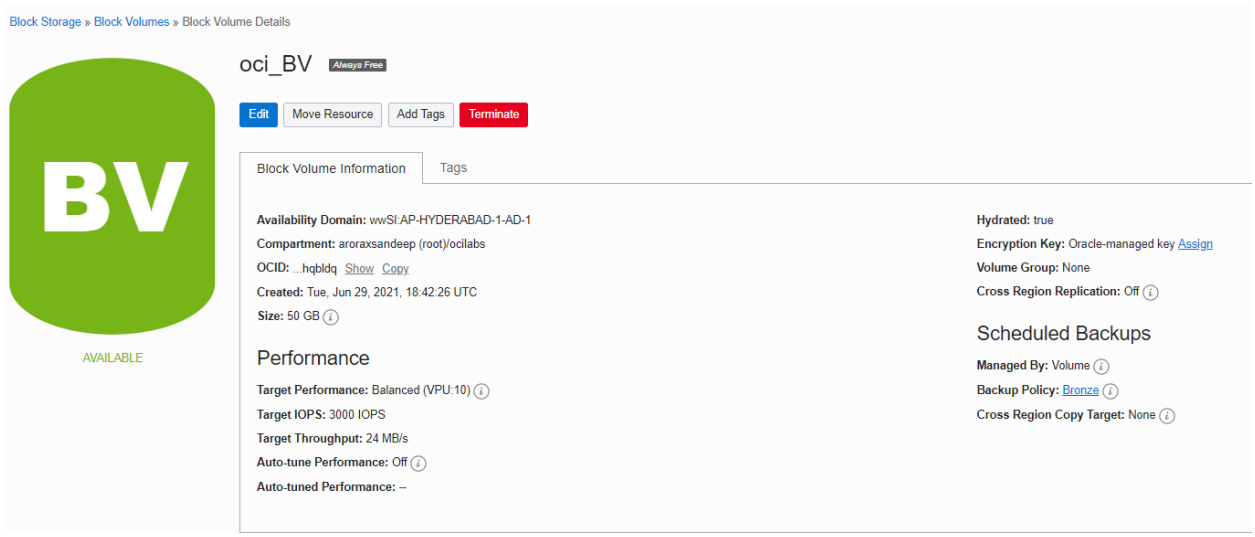
   Review the screenshots in the next page and then go to the next step, when you will create the block volume.

5. Leave the tags options as it is and click **Create Block Volume**.

   Quick recap on the block volume backup policies: There are three predefined backup policies, Bronze, Silver, and Gold. Each backup policy has a set backup frequency and retention period.

   - **Bronze Policy:** The bronze policy includes monthly incremental backups, run on the first day of the month. These backups are retained for twelve months. This policy also includes a full backup, run yearly on January 1st. Full backups are retained for five years.
   - **Silver Policy:** The silver policy includes weekly incremental backups that run on Sunday. These backups are retained for four weeks. This policy also includes monthly incremental backups, run on the first day of the month and are retained for 12 months. Also includes a full backup, run yearly on January 1st. Full backups are retained for five years.
   - **Gold Policy:** The gold policy includes daily incremental backups. These backups are retained for seven days. This policy also includes weekly incremental backups that run on Sunday and are retained for four weeks. Also includes monthly incremental backups, run on the first day of the month, retained for 12 months, and a full backup, run yearly on January 1st. Full backups are retained for five years.

6. The volume will be ready to attach once the status change from **PROVISIONING** to **AVAILABLE**.



This completes the task of creating a Block Volume, which you will be attaching to your Compute instance in the next practice.

Practice: Attaching Block Volume to a Compute Instance

Overview

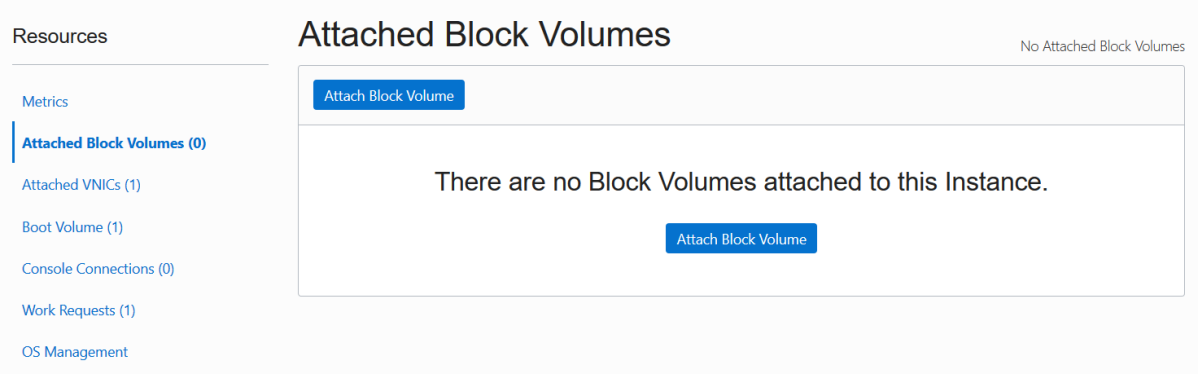
In this practice, you will attach a newly created Block Volume to a Compute instance.

Tasks

1. Once the Block Volume is created, you can attach it to your Compute instance.

   When you attach a Block volume to a Compute instance, you have two options for attachment type, iSCSI or paravirtualized.

   - **iSCSI:** iSCSI attachments are the only option when connecting Block volumes to bare metal instances. Once the volume is attached, you need to log in to the instance and use the `iscsiadm` command-line tool to configure the iSCSI connection.
   - **Paravirtualized:** Paravirtualized attachments are now an option when attaching volumes to Virtual Machine (VM) instances. For VM instances launched from Oracle-Provided Images, you can select this option for Linux-based images published. Once you attach a volume using the paravirtualized attachment type, it is ready to use. You do not need to run any additional commands. However, due to the overhead of virtualization, this reduces the maximum IOPS performance for larger Block volumes.
2. Go to **Menu** > **Compute** > click **Instances**. Ensure you Compartment is selected.
3. From the list of Compute instance, click your **oci_compute** instance.
4. On your compute instance details page, scroll down and navigate to the **Resources** section on the left side.
5. Click the **Attached Block Volumes** link. Currently, you do not have any volumes attached to your Compute instance.
6. Click **Attach Block Volume**, to add the newly created volume.

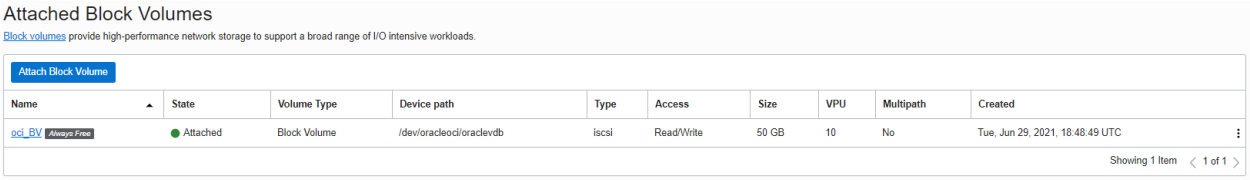


7. Select the volume created from the drop-down menu and choose the following options:
   - **Attachment mode:** Let Oracle Cloud Infrastructure choose the best attachment type
   - **Volume: Select Volume**
   - **Block Volume Compartment:** *Ensure your Compartment has been selected*
   - **Block Volume:** *Select the volume you created*
   - **Device Path:** Select `/dev/oracleoci/oraclevdb`
   - Click **Attach**
   - **Access:** Read / Write

   Note the message upon clicking Attach.

   Click **Close**.

8. Once the volume is attached, it will be displayed like this:



This completes the task of attaching Block Volume to a Compute instance.