This README contains step by step instructions on how to install the ZFS and Ext4 file systems in two different partitions and how to run our workloads in vdbench to get the statistics.
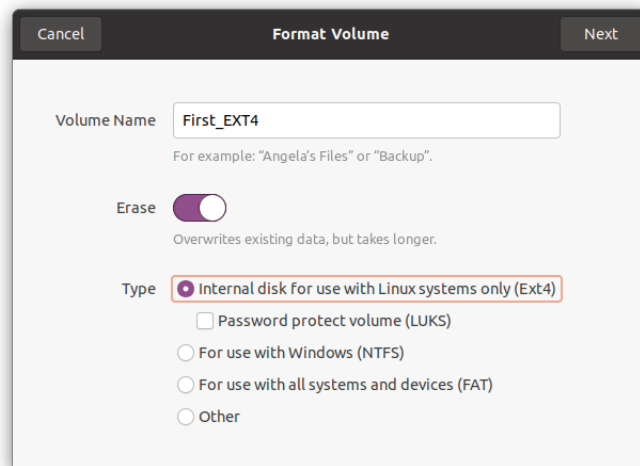
Installation:

1. **ZFS:**
   a. Install the ZFS filesystem with
      sudo apt install zfsutils-linux -y
   b. Choose a disk or a partition of a disk (preferably an empty one) to install the ZFS filesystem in.(/dev/sdb2 in our case)
      MAKE SURE THE SELECTED DISK IS OF SIZE AT LEAST 3GB.
   c. Create a ZFS pool named "zfs_pool" in the selected disk using the command
      sudo zpool create zfs_pool /dev/sdb2
   d. Switch deduplication on for the newly created ZFS pool.
      sudo zfs set dedup=on zfs_pool
   e. The ZFS pool is mounted at the folder zfs_pool in the root directory. This is the anchor for running the workloads.

2. **Ext4:**
   a. Ext4 is pre-installed for the Ubuntu system so we can use the **disks** application to easily install the filesystem in our disk.
   b. Open the **disks** application.
   c. Choose the disk/partition and click the gear icon.
   d. Choose the option format partition.
   e. Give a label to the disk, check the erase **partition,** set type as Ext4 and then click next.

   f. Select format.
   g. Now, ext4 is installed on the disk and we need to mount it.
   h. Go to the root directory and create a folder ext4_fs in it.
   i. Now to mount the disk, run the command sudo mount /dev/sda1 /ext4_fs
   j. The disk is mounted at the directory ext4_fs and this is the anchor for running the workloads.

Running the workloads on the two filesystems

1. Add the two workloads(workload1 and workload2) to the vdbench directory.
2. Navigate to the vdbench directory.
3. Run the following commands to run the workloads for both the file systems
   a. sudo ./vdbench -f workload1 anchor=/zfs_pool
      This command is used to run workload 1 on the ZFS pool. Substitute the last argument in the command with its anchor.
   b. sudo ./vdbench -f workload1 anchor=/ext4_fs
      This command runs workload2 on the ext4 partition. The last argument is the anchor of the ext4 partition.
   c. sudo ./vdbench -f workload2 anchor=/zfs_pool
      This command runs workload2 on the ZFS pool.
   d. sudo ./vdbench -f workload2 anchor=/ext4_fs
      This command runs workload2 on the ext4 partition.