```
    type replicated
    min_size 1
    max_size 10
    step take rack1
    step chooseleaf firstn 1 type host
    step emit
    step take default-cl260 class hdd
    step chooseleaf firstn -1 type rack
    step emit
}


# end crush map
```

With this rule, the first replica uses an OSD from `rack1` (backed by SSD storage), and the remaining replicas use OSDs backed by HDD storage from different racks.

4.4. Compile your new CRUSH map.

```
[ceph: root@clienta /]# crushtool -c ~/cm-new.txt -o ~/cm-new.bin
```

4.5. Before applying the new map to the running cluster, use the `crushtool` command with the `--show-mappings` option to verify that the first OSD is always from `rack1`.

```
[ceph: root@clienta /]# crushtool -i ~/cm-new.bin --test --show-mappings \
--rule=5 --num-rep 3
...output omitted...
CRUSH rule 5 x 1013 [5,4,7]
CRUSH rule 5 x 1014 [1,3,7]
CRUSH rule 5 x 1015 [6,2,3]
CRUSH rule 5 x 1016 [5,0,7]
CRUSH rule 5 x 1017 [6,0,8]
CRUSH rule 5 x 1018 [6,4,7]
CRUSH rule 5 x 1019 [1,8,3]
CRUSH rule 5 x 1020 [5,7,4]
CRUSH rule 5 x 1021 [5,7,4]
CRUSH rule 5 x 1022 [1,4,2]
CRUSH rule 5 x 1023 [1,7,4]
```

The first OSD is always 1, 5, or 6, which corresponds to the OSDs with SSD devices from `rack1`.

4.6. Apply the new CRUSH map to your cluster by using the `ceph osd setcrushmap` command.

```
[ceph: root@clienta /]# ceph osd setcrushmap -i ~/cm-new.bin
...output omitted...
```

4.7. Verify that the new `ssd-first` rule is now available.