```
[ceph: root@clienta /]# ceph osd crush rule ls
replicated_rule
onssd
ssd-first
```

4.8. Create a new replicated pool called `testcrush` with 32 placement groups and use the `ssd-first` CRUSH map rule.

```
[ceph: root@clienta /]# ceph osd pool create testcrush 32 32 ssd-first
cephpool 'testcrush' created
```

4.9. Verify that the first OSDs for the placement groups in the pool called `testcrush` are the ones from `rack1`. These OSDs are `osd.1`, `osd.5`, and `osd.6`.

```
[ceph: root@clienta /]# ceph osd lspools
...output omitted...
6 myfast
7 testcrush
[ceph: root@clienta /]# ceph pg dump pgs_brief | grep ^6
dumped pgs_brief
7.b              active+clean  [1,8,3]          1  [1,8,3]              1
7.8              active+clean  [5,3,7]          5  [5,3,7]              5
7.9              active+clean  [5,0,7]          5  [5,0,7]              5
7.e              active+clean  [1,2,4]          1  [1,2,4]              1
7.f              active+clean  [1,0,8]          1  [1,0,8]              1
7.c              active+clean  [6,0,8]          6  [6,0,8]              6
7.d              active+clean  [1,4,8]          1  [1,4,8]              1
7.2              active+clean  [6,8,0]          6  [6,8,0]              6
7.3              active+clean  [5,3,7]          5  [5,3,7]              5
7.0              active+clean  [5,0,7]          5  [5,0,7]              5
7.5              active+clean  [5,4,2]          5  [5,4,2]              5
...output omitted...
```

5. Use the pg-upmap feature to manually remap some secondary OSDs in one of the PGs in the `testcrush` pool.

5.1. Use the new pg-upmap optimization feature to manually map a PG to specific OSDs. Remap the second OSD of your PG from the previous step to another OSD of your choosing, except 1, 5 or, 6.

```
[ceph: root@clienta /]# ceph osd pg-upmap-items 7.8 3 0
set 7.8 pg_upmap_items mapping to [3->0]
```

5.2. Use the `ceph pg map` command to verify the new mapping. When done, log off from `clienta`.

```
[ceph: root@clienta /]# ceph pg map 7.8
osdmap e238 pg 7.8 (7.8) -> up [5,0,7] acting [5,0,7]
```

6. Return to `workstation` as the `student` user.