

4.1.

```

default-4-lab      (root bucket)
  DC01             (datacenter bucket)
    firstfloor     (room bucket)
      hostc        (host bucket)
    secondfloor    (room bucket)
      hostd        (host bucket)

```

4.2. Create the buckets.

```

[ceph: root@clienta /]# ceph osd crush add-bucket default-4-lab root
added bucket default-4-lab type root to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket DC01 datacenter
added bucket DC01 type datacenter to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket firstfloor room
added bucket firstfloor type room to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket hostc host
added bucket hostc type host to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket secondfloor room
added bucket secondfloor type room to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket hostd host
added bucket hostd type host to crush map

```

4.3. Build the hierarchy.

```

[ceph: root@clienta /]# ceph osd crush move DC01 root=default-4-lab
moved item id -10 name 'DC01' to location {root=default-4-lab} in crush map
[ceph: root@clienta /]# ceph osd crush move firstfloor datacenter=DC01
moved item id -11 name 'firstfloor' to location {datacenter=DC01} in crush map
[ceph: root@clienta /]# ceph osd crush move hostc room=firstfloor
moved item id -12 name 'hostc' to location {room=firstfloor} in crush map
[ceph: root@clienta /]# ceph osd crush move secondfloor datacenter=DC01
moved item id -13 name 'secondfloor' to location {datacenter=DC01} in crush map
[ceph: root@clienta /]# ceph osd crush move hostd room=secondfloor
moved item id -14 name 'hostd' to location {room=secondfloor} in crush map

```

4.4. Display the CRUSH map tree to verify the new hierarchy.

```

[ceph: root@clienta /]# ceph osd crush tree
ID  CLASS  WEIGHT  TYPE NAME
--  -
-9              0  root default-4-lab
-10             0      datacenter DC01
-11              0          room firstfloor
-12              0              host hostc
-13             0          room secondfloor
-14             0              host hostd
-1              0.08817  root default
-3              0.02939  host serverc
 0      hdd  0.00980      osd.0
 1      hdd  0.00980      osd.1
 2      hdd  0.00980      osd.2
-7              0.02939  host serverd

```