

Assignment - Introduction to ETCD

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Screenshot 1(a)

```
pes2ug22cs607_sushmitha@sushmitha:~$ /tmp/etcd-download-test/etcd --version
etcd Version: 3.5.12
Git SHA: e7b3bb6cc
Go Version: go1.20.13
Go OS/Arch: linux/amd64
pes2ug22cs607_sushmitha@sushmitha:~$ /tmp/etcd-download-test/etcdctl version
etcdctl version: 3.5.12
API version: 3.5
pes2ug22cs607_sushmitha@sushmitha:~$ /tmp/etcd-download-test/etcdutl version
etcdutl version: 3.5.12
API version: 3.5
```

Screenshot 2(a)

```
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcd-download-test/etcd
{"level":"warn","ts":"2025-03-17T09:39:59.459791Z","caller":"embed/config.go:679","msg":"Running http and grpc server on single port. This is not recommended for production."}
{"level":"info","ts":"2025-03-17T09:39:59.461977Z","caller":"etcdmain/etcd.go:73","msg":"Running: ", "args":["etcd-download-test/etcd"]}
{"level":"warn","ts":"2025-03-17T09:39:59.462041Z","caller":"etcdmain/etcd.go:105","msg":"'data-dir' was empty; using default","data-dir":"default.etcd"}
{"level":"warn","ts":"2025-03-17T09:39:59.462523Z","caller":"embed/config.go:679","msg":"Running http and grpc server on single port. This is not recommended for production."}
{"level":"info","ts":"2025-03-17T09:39:59.462579Z","caller":"embed/etcd.go:127","msg":"configuring peer listeners","listen-peer-urls":["http://localhost:2380"]}
{"level":"info","ts":"2025-03-17T09:39:59.466455Z","caller":"embed/etcd.go:135","msg":"configuring client listeners","listen-client-urls":["http://localhost:2379"]}
{"level":"info","ts":"2025-03-17T09:39:59.466629Z","caller":"embed/etcd.go:308","msg":"starting an etcd server","etcd-version":"3.5.12","git-sha":"e7b3bb6cc","go-version":"go1.20.13","go-os":"linux","go-arch":"amd64","max-cpu-set":12,"max-cpu-available":12,"member-initialized":false,"name":"default","data-dir":"default.etcd","wal-dir":"","wal-dir-dedicated":"","member-dir":"default.etcd/member","force-new-cluster":false,"heartbeat-interval":100ms,"election-timeout":1s,"initial-election-tick-advance":true,"snapshot-count":100000,"max-wals":5,"max-snapshots":5,"snapshot-catchup-entries":5000,"initial-advertise-peer-urls":["http://localhost:2380"],"listen-peer-urls":["http://localhost:2380"],"advertise-client-urls":["http://localhost:2379"],"listen-client-urls":["http://localhost:2379"],"listen-metrics-urls":[],"cors":["*"],"host-whitelist":["*"],"initial-cluster":"default=http://localhost:2380","initial-cluster-state":"new","initial-cluster-token":"etcd-cluster","quota-backend-bytes":2147483648,"max-request-bytes":1572864,"max-concurrent-streams":4294967295,"pre-vote":true,"initial-corrupt-check":false,"corrupt-check-time-interval":0s,"compact-check-time-enabled":false,"compact-check-time-interval":1m0s,"auto-compaction-mode":"periodic","auto-compaction-retention":0s,"auto-compaction-interval":0s,"discovery-url":"","discovery-proxy":"","downgrade-check-interval":5s}
{"level":"info","ts":"2025-03-17T09:39:59.47724Z","caller":"etcdserver/backend.go:81","msg":"opened backend db","path":"default.etcd/member/snap/db","took":"5.458381ms"}
{"level":"info","ts":"2025-03-17T09:39:59.49258Z","caller":"etcdserver/raft.go:495","msg":"starting local member","local-member-id":"8e9e05c52164694d","cluster-id":"cdf818194e3a8c32"}
```

```
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl watch srn
PUT
srn
pes2ug22cs607_Sushmitha_S
DELETE
srn

pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=localhost:2379 put srn pes2ug22cs607
OK
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=localhost:2379 get srn
srn
pes2ug22cs607

pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=localhost:2379 put srn pes2ug22cs607_Sushmitha_S
OK
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl del srn
pes2ug22cs607_sushmitha@sushmitha:/tmp$
pes2ug22cs607_sushmitha@sushmitha:/tmp$
```

The screenshot displays three terminal windows running on a Windows desktop. The desktop background is a blue and white abstract pattern. The taskbar at the bottom shows icons for 'sushmithas', 'CMD', 'This PC', 'coding', 'Network', and 'docs'. The terminal windows show logs for a Raft cluster with nodes 'c852cdad90' and '5471a43cc6e9c'. The logs include messages about connection refused, failed to reach peer URL, failed to get version, and successful cluster updates.

```

{"level":"warn","ts":"2025-03-17T10:26:02.771027Z","caller":"raft
http/probing_status.go:68","msg":"prober detected unhealthy statu
s","round-tripper-name":"ROUND_TRIPPER_SNAPSHOT","remote-peer-id"
:"f42c8c852cdad90","rtt":"0s","error":"dial tcp 127.0.0.2:2392:
connect: connection refused"}
{"level":"warn","ts":"2025-03-17T10:26:03.801772Z","caller":"etcd
server/cluster_util.go:294","msg":"failed to reach the peer URL",
"address":"http://127.0.0.2:2392/version","remote-member-id":"f42
c8c852cdad90","error":"Get \"http://127.0.0.2:2392/version\": dial
tcp 127.0.0.2:2392: connect: connection refused"}
{"level":"warn","ts":"2025-03-17T10:26:03.801847Z","caller":"etcd
server/cluster_util.go:158","msg":"failed to get version","remote
-member-id":"f42c8c852cdad90","error":"Get \"http://127.0.0.2:23
92/version\": dial tcp 127.0.0.2:2392: connect: connection refuse
d"}
{"level":"warn","ts":"2025-03-17T10:26:04.497877Z","caller":"raftht
t/probing_status.go:68","msg":"prober detected unhealthy status","ro
und-tripper-name":"ROUND_TRIPPER_SNAPSHOT","remote-peer-id":"f42c8c85
2cdad90","rtt":"0s","error":"dial tcp 127.0.0.2:2392: connect: conne
tion refused"}
{"level":"warn","ts":"2025-03-17T10:26:49.506162Z","caller":"raftht
t/probing_status.go:68","msg":"prober detected unhealthy status","ro
und-tripper-name":"ROUND_TRIPPER_RAFT_MESSAGE","remote-peer-id":"f42c8c85
2cdad90","rtt":"0s","error":"dial tcp 127.0.0.2:2392: connect: c
onnection refused"}
{"level":"info","ts":"2025-03-17T10:26:47.311319Z","caller":"members
hip/cluster.go:584","msg":"set initial cluster version","cluster-id":"12c5471a43cc6e9c","local-member-id":"f42c8c852cdad90","cluster-version":"3.0"}
{"level":"info","ts":"2025-03-17T10:26:47.311484Z","caller":"api/capability.go:75","msg":"enabled capabilities for version","cluster-version":"3.0"}
{"level":"info","ts":"2025-03-17T10:26:47.311625Z","caller":"etcdserver/server.go:2068","msg":"published local member to cluster through raft","local-member-id":"f42c8c852cdad90","local-member-attributes":{"Name":"etcd-3 ClientURLs":["http://127.0.0.2:2389"]},"request-path":"/0/members/f42c8c852cdad90/attributes","cluster-id":"12c5471a43cc6e9c","publish-timeout":"7s"}
{"level":"info","ts":"2025-03-17T10:26:47.311729Z","caller":"embed/serve.go:103","msg":"ready to serve client requests"}
{"level":"info","ts":"2025-03-17T10:26:47.311761Z","caller":"embed/serve.go:103","msg":"ready to serve client requests"}
{"level":"info","ts":"2025-03-17T10:26:47.312305Z","caller":"etcdmain/main.go:44","msg":"notifying init daemon"}
{"level":"info","ts":"2025-03-17T10:26:47.312373Z","caller":"etcdmain/main.go:50","msg":"successfully notified init daemon"}
{"level":"info","ts":"2025-03-17T10:26:47.313141Z","caller":"embed/serve.go:187","msg":"serving client traffic insecurely; this is strongly discouraged!","traffic":{"grpc+http","address":"127.0.0.1"}

```

Screenshot 4(a)

```
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=http://127.0.0.2:2359 endpoint status --write-out=table
+-----+
| ENDPOINT | ID | VERSION | DB SIZE | IS LEADER | IS LEARNER | RAFT TERM | RAFT INDEX | RAFT APPLIED INDEX |
| ERRORS |
+-----+
| http://127.0.0.2:2359 | 366952c5ece74e7c | 3.5.12 | 20 kB | true | false | 2 | 9 |
| 9 |
+-----+
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=http://127.0.0.2:2369 endpoint status --write-out=table
+-----+
| ENDPOINT | ID | VERSION | DB SIZE | IS LEADER | IS LEARNER | RAFT TERM | RAFT INDEX | RAFT APPLIED INDEX |
| ERRORS |
+-----+
| http://127.0.0.2:2369 | 80f0dfea5ea0c542 | 3.5.12 | 20 kB | false | false | 2 | 9 |
| 9 |
+-----+
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=http://127.0.0.2:2389 endpoint status --write-out=table
+-----+
| ENDPOINT | ID | VERSION | DB SIZE | IS LEADER | IS LEARNER | RAFT TERM | RAFT INDEX | RAFT APPLIED INDEX |
| ERRORS |
+-----+
| http://127.0.0.2:2389 | f42c8c852ecdaa90 | 3.5.12 | 20 kB | false | false | 2 | 9 |
| 9 |
+-----+
pes2ug22cs607_sushmitha@sushmitha:/tmp$
```

Screenshot 4(b)

```
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=http://127.0.0.2:2389 endpoint status --write-out=table
+-----+
| ENDPOINT | ID | VERSION | DB SIZE | IS LEADER | IS LEARNER | RAFT TERM | RAFT INDEX | RAFT APPLIED INDEX |
| ERRORS |
+-----+
| http://127.0.0.2:2389 | f42c8c852ecdaa90 | 3.5.12 | 20 kB | false | false | 2 | 9 |
| |
+-----+
pes2ug22cs607_sushmitha@sushmitha:/tmp$ etcdctl --endpoints=http://127.0.0.2:2359 endpoint status --write-out=table
+-----+
| ENDPOINT | ID | VERSION | DB SIZE | IS LEADER | IS LEARNER | RAFT TERM | RAFT INDEX | RAFT APPLIED INDEX |
| ERRORS |
+-----+
| http://127.0.0.2:2359 | 366952c5ece74e7c | 3.5.12 | 20 kB | true | false | 2 | 9 |
| |
+-----+
```