

Server running on 5 ports which starts coordinator internally in 1099 port:

```
achennak@Akshayas-MacBook-Air src % javac KeyValueStoreServerImpl.java
achennak@Akshayas-MacBook-Air src % java KeyValueStoreServerImpl 3000 3001 3002 3003 3004
Server 1 ready...
Server 2 ready...
Server 3 ready...
Server 4 ready...
Server 5 ready...
12:43:35.455 [INFO] Server 1: Received PUT request from client
12:43:35.473 [INFO] Initiating prepare phase for all servers...
12:43:35.483 [INFO] Server 4: Prepare phase initiated for PUT request on key 0
12:43:35.483 [INFO] Server 1: Prepare phase initiated for PUT request on key 0
12:43:35.485 [INFO] Server 5: Prepare phase initiated for PUT request on key 0
12:43:35.485 [INFO] Server 2: Prepare phase initiated for PUT request on key 0
12:43:35.485 [INFO] Server 3: Prepare phase initiated for PUT request on key 0
12:43:35.485 [INFO] Initiating commit phase for all servers...
12:43:35.491 [INFO] Server 3: Commit phase initiated for PUT request on 0 key
12:43:35.491 [INFO] Server 1: Commit phase initiated for PUT request on 0 key
12:43:35.491 [INFO] Server 5: Commit phase initiated for PUT request on 0 key
12:43:35.491 [INFO] Server 4: Commit phase initiated for PUT request on 0 key
12:43:35.491 [INFO] Server 2: Commit phase initiated for PUT request on 0 key
12:43:35.494 [INFO] Server 1: Received GET request from client
12:43:35.494 [INFO] Initiating prepare phase for all servers...
12:43:35.494 [INFO] Server 2: Prepare phase initiated for GET request on key 0
12:43:35.494 [INFO] Server 1: Prepare phase initiated for GET request on key 0
12:43:35.494 [INFO] Server 4: Prepare phase initiated for GET request on key 0
12:43:35.494 [INFO] Server 3: Prepare phase initiated for GET request on key 0
12:43:35.494 [INFO] Server 5: Prepare phase initiated for GET request on key 0
12:43:35.494 [INFO] Initiating commit phase for all servers...
12:43:35.495 [INFO] Server 2: Commit phase initiated for GET request on 0 key
12:43:35.495 [INFO] Server 1: Commit phase initiated for GET request on 0 key
12:43:35.495 [INFO] Server 4: Commit phase initiated for GET request on 0 key
12:43:35.495 [INFO] Server 3: Commit phase initiated for GET request on 0 key
12:43:35.495 [INFO] Server 5: Commit phase initiated for GET request on 0 key
12:43:35.496 [INFO] Server 1: Received DELETE request from client
12:43:35.496 [INFO] Initiating prepare phase for all servers...
12:43:35.496 [INFO] Server 2: Prepare phase initiated for DELETE request on key 0
12:43:35.496 [INFO] Server 3: Prepare phase initiated for DELETE request on key 0
12:43:35.496 [INFO] Server 1: Prepare phase initiated for DELETE request on key 0
12:43:35.496 [INFO] Server 4: Prepare phase initiated for DELETE request on key 0
12:43:35.496 [INFO] Server 5: Prepare phase initiated for DELETE request on key 0
12:43:35.497 [INFO] Initiating commit phase for all servers...
```

Client connecting to Server 2:

```

achennak@Akshayas-MacBook-Air src % java Client
12:50:31.258 [INFO] sending message :PUT key0 v1
12:50:31.278 [INFO] sending message :GET key0
12:50:31.279 [INFO] sending message :DELETE key0
12:50:31.280 [INFO] sending message :PUT key1 v2
12:50:31.281 [INFO] sending message :GET key1
12:50:31.282 [INFO] sending message :DELETE key1
12:50:31.283 [INFO] sending message :PUT key2 v3
12:50:31.283 [INFO] sending message :GET key2
12:50:31.284 [INFO] sending message :DELETE key2
12:50:31.285 [INFO] sending message :PUT key3 v4
12:50:31.286 [INFO] sending message :GET key3
12:50:31.286 [INFO] sending message :DELETE key3
12:50:31.287 [INFO] sending message :PUT key4 v5
12:50:31.288 [INFO] sending message :GET key4
12:50:31.289 [INFO] sending message :DELETE key4
Enter the server you want to connect to (1-5):
2
  Connected to server 2
12:50:34.654 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
PUT 4 5
12:50:39.624 [INFO] Server response :Key 4 was successfully inserted
12:50:39.624 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 4
12:50:41.205 [INFO] Server response :5
12:50:41.205 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
delet 4
Invalid Input.
12:50:45.151 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
delete 4
12:50:49.730 [INFO] Server response :Key 4 successfully deleted
12:50:49.731 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 4
12:50:53.267 [INFO] Server response :Key 4 not found. GET request aborted.
12:50:53.267 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:

```

Client exits gracefully

```

Enter the server you want to connect to (1-5):
2
  Connected to server 2
12:50:34.654 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
PUT 4 5
12:50:39.624 [INFO] Server response :Key 4 was successfully inserted
12:50:39.624 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 4
12:50:41.205 [INFO] Server response :5
12:50:41.205 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
delet 4
Invalid Input.
12:50:45.151 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
delete 4
12:50:49.730 [INFO] Server response :Key 4 successfully deleted
12:50:49.731 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 4
12:50:53.267 [INFO] Server response :Key 4 not found. GET request aborted.
12:50:53.267 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
shutdown
Client shutting down gracefully.
achennak@Akshayas-MacBook-Air src %

```

Server fails when 5 ports are not provided:

```

[achennak@Akshayas-MacBook-Air src % javac KeyValueStoreServerImpl.java
[achennak@Akshayas-MacBook-Air src % java KeyValueStoreServerImpl
Insufficient number of ports provided. Please provide 5 ports.
achennak@Akshayas-MacBook-Air src %

```

Clients talking to multiple servers:

```

[achennak@Akshayas-MacBook-Air src % java Client
13:16:57.866 [INFO] sending message :PUT key0 v1
13:16:57.922 [INFO] sending message :GET key0
13:16:57.926 [INFO] sending message :DELETE key0
13:16:57.928 [INFO] sending message :PUT key1 v2
13:16:57.929 [INFO] sending message :GET key1
13:16:57.930 [INFO] sending message :DELETE key1
13:16:57.932 [INFO] sending message :PUT key2 v3
13:16:57.933 [INFO] sending message :GET key2
13:16:57.935 [INFO] sending message :DELETE key2
13:16:57.936 [INFO] sending message :PUT key3 v4
13:16:57.938 [INFO] sending message :GET key3
13:16:57.940 [INFO] sending message :DELETE key3
13:16:57.941 [INFO] sending message :PUT key4 v5
13:16:57.942 [INFO] sending message :GET key4
13:16:57.943 [INFO] sending message :DELETE key4
Enter the server you want to connect to (1-5):
2
  Connected to server 2
13:17:14.433 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 5
13:17:26.890 [INFO] Server response :6
13:17:26.891 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 5
13:17:39.829 [INFO] Server response :Key 5 not found. GET request aborted.
13:17:39.829 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 1
13:17:43.291 [INFO] Server response :2
13:17:43.291 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:

```

```

achennak@Akshayas-MacBook-Air src % java Client
13:17:09.526 [INFO] sending message :PUT key0 v1
13:17:09.547 [INFO] sending message :GET key0
13:17:09.548 [INFO] sending message :DELETE key0
13:17:09.549 [INFO] sending message :PUT key1 v2
13:17:09.551 [INFO] sending message :GET key1
13:17:09.552 [INFO] sending message :DELETE key1
13:17:09.553 [INFO] sending message :PUT key2 v3
13:17:09.554 [INFO] sending message :GET key2
13:17:09.555 [INFO] sending message :DELETE key2
13:17:09.556 [INFO] sending message :PUT key3 v4
13:17:09.557 [INFO] sending message :GET key3
13:17:09.558 [INFO] sending message :DELETE key3
13:17:09.559 [INFO] sending message :PUT key4 v5
13:17:09.560 [INFO] sending message :GET key4
13:17:09.561 [INFO] sending message :DELETE key4
Enter the server you want to connect to (1-5):
3
  Connected to server 3
13:17:17.793 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
delete 5
13:17:33.883 [INFO] Server response :Key 5 successfully deleted
13:17:33.884 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
put 1 2
13:17:36.531 [INFO] Server response :Key 1 was successfully inserted
13:17:36.532 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
delete 5
13:18:08.363 [INFO] Server response :Key 5 not found. DELETE request aborted.
13:18:08.364 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:

```



```
[achennak@Akshayas-MacBook-Air src % java Client
13:17:15.898 [INFO] sending message :PUT key0 v1
13:17:15.918 [INFO] sending message :GET key0
13:17:15.919 [INFO] sending message :DELETE key0
13:17:15.920 [INFO] sending message :PUT key1 v2
13:17:15.921 [INFO] sending message :GET key1
13:17:15.921 [INFO] sending message :DELETE key1
13:17:15.923 [INFO] sending message :PUT key2 v3
13:17:15.924 [INFO] sending message :GET key2
13:17:15.924 [INFO] sending message :DELETE key2
13:17:15.925 [INFO] sending message :PUT key3 v4
13:17:15.926 [INFO] sending message :GET key3
13:17:15.927 [INFO] sending message :DELETE key3
13:17:15.928 [INFO] sending message :PUT key4 v5
13:17:15.928 [INFO] sending message :GET key4
13:17:15.929 [INFO] sending message :DELETE key4
Enter the server you want to connect to (1-5):
4
Connected to server 4
13:17:20.611 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
put 5 6
13:17:23.307 [INFO] Server response :Key 5 was successfully inserted
13:17:23.307 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
get 1
13:17:52.256 [INFO] Server response :2
13:17:52.257 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
delete 1
13:18:01.136 [INFO] Server response :Key 1 successfully deleted
13:18:01.136 [INFO] Enter operation: PUT <key> <value> or GET <key> or DELETE <key> or SHUTDOWN:
█
```

[illegible]

