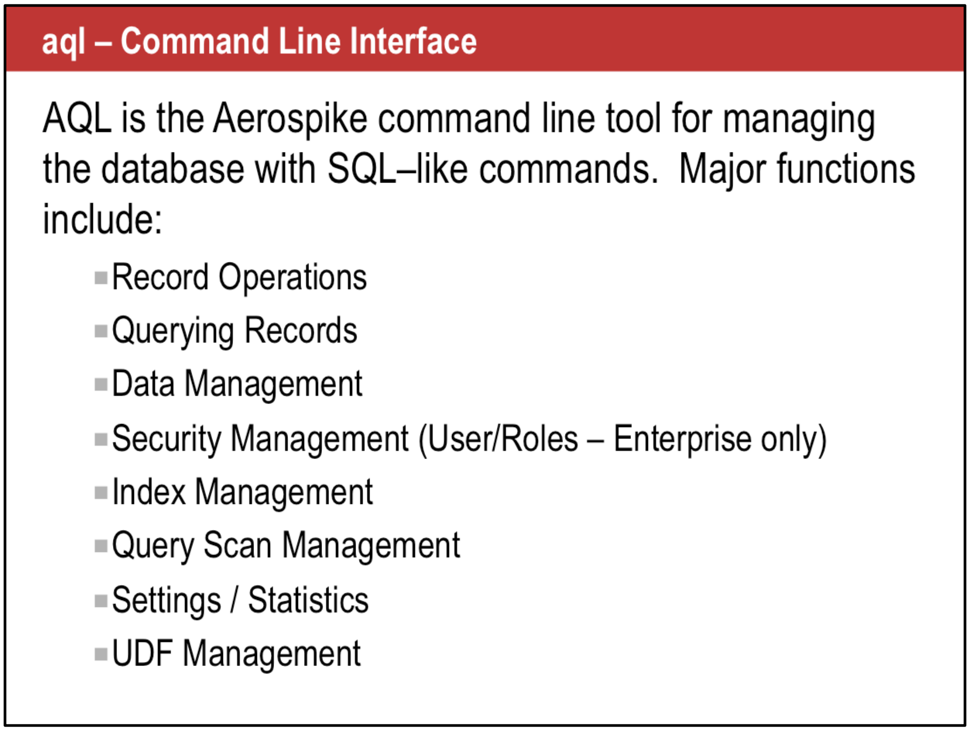
AQL

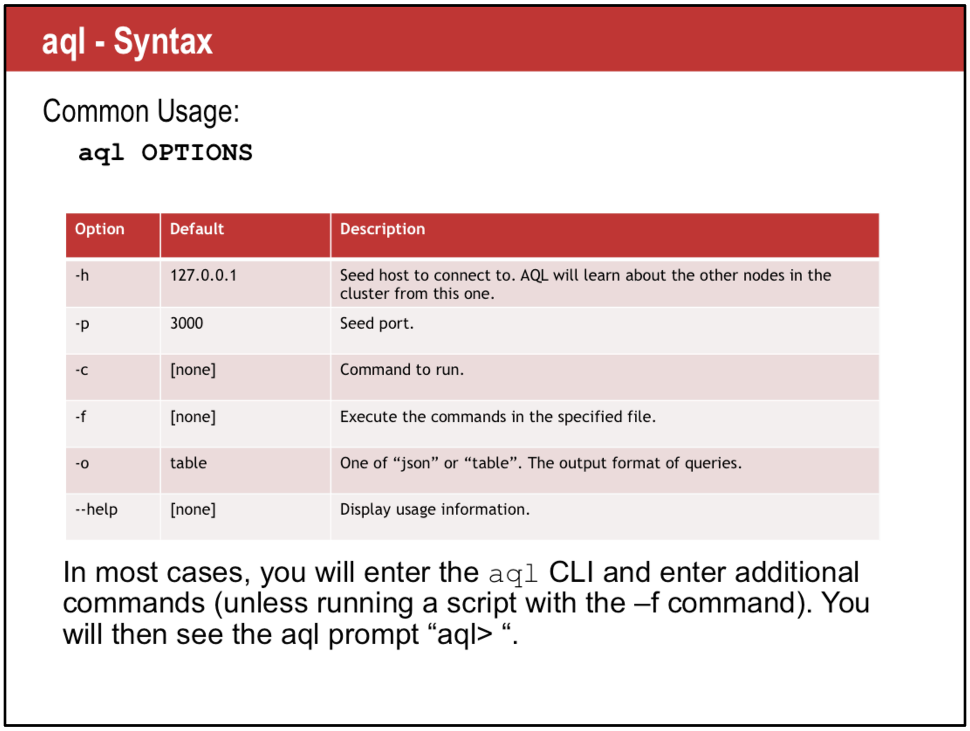


aql – Command Line Interface

AQL is the Aerospike command line tool for managing the database with SQL–like commands. Major functions include:

- Record Operations
- Querying Records
- Data Management
- Security Management (User/Roles – Enterprise only)
- Index Management
- Query Scan Management
- Settings / Statistics
- UDF Management

Documentation on Aerospike’s doc site: http://www.aerospike.com/docs/tools/aql/



aql - Syntax

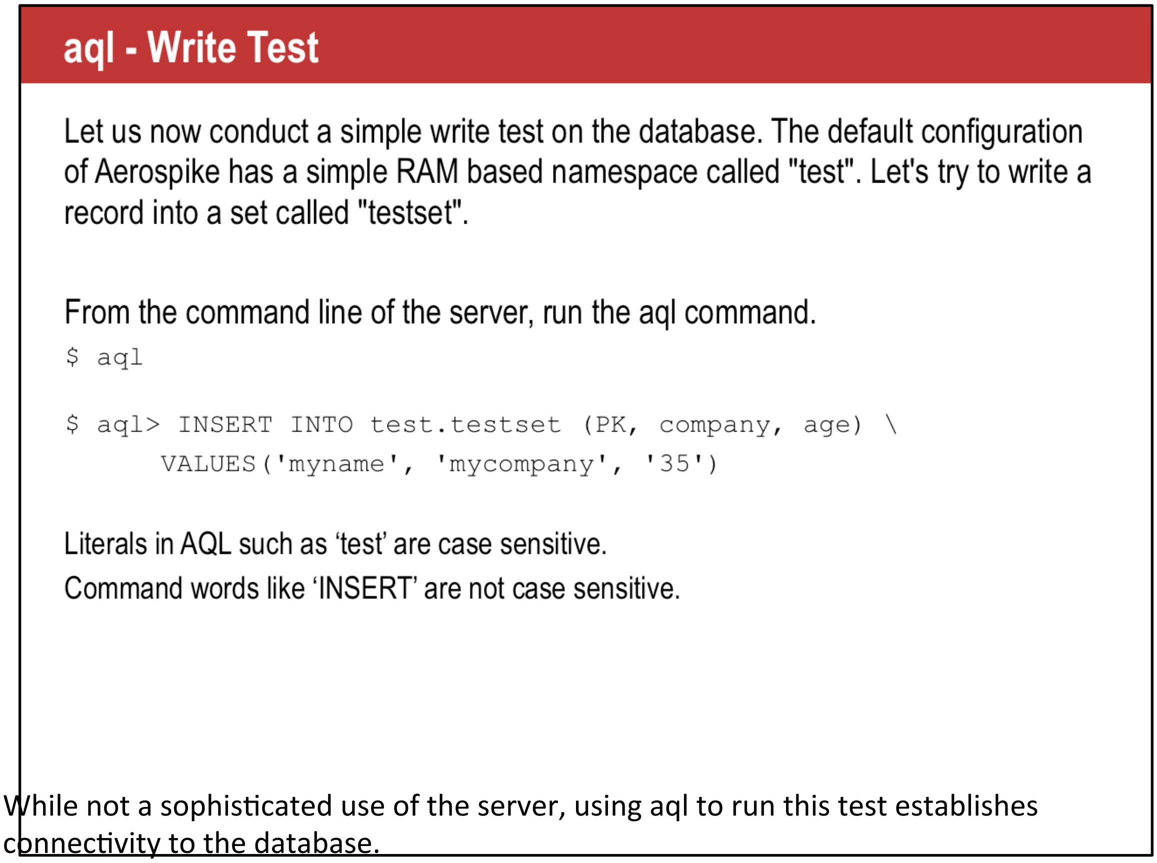
Common Usage:

```
aql OPTIONS
```

Option	Default	Description
-h	127.0.0.1	Seed host to connect to. AQL will learn about the other nodes in the cluster from this one.
-p	3000	Seed port.
-c	[none]	Command to run.
-f	[none]	Execute the commands in the specified file.
-o	table	One of “json” or “table”. The output format of queries.
--help	[none]	Display usage information.

In most cases, you will enter the `aql` CLI and enter additional commands (unless running a script with the –f command). You will then see the aql prompt “aql> “.

The –h parameter is used to connect to any server in the cluster. This is referred to as the “seed node.” AQL will learn about the other nodes from this one, so you do not need to know about any of the others.
The –p parameter gives the service port for the Aerospike cluster. It is 3000 by default.
The –c parameter allows you to run a command and immediately exit. This can be used if you want to use aql in a shell script.
The –f parameter allows you to run commands from a file, similar to a SQL script.
The –o parameter will allow for output to look like json rather than tabular format.
For this class, since you are on the database node, you can simply enter “aql”.



aql - Write Test

Let us now conduct a simple write test on the database. The default configuration of Aerospike has a simple RAM based namespace called "test". Let's try to write a record into a set called "testset".

From the command line of the server, run the aql command.

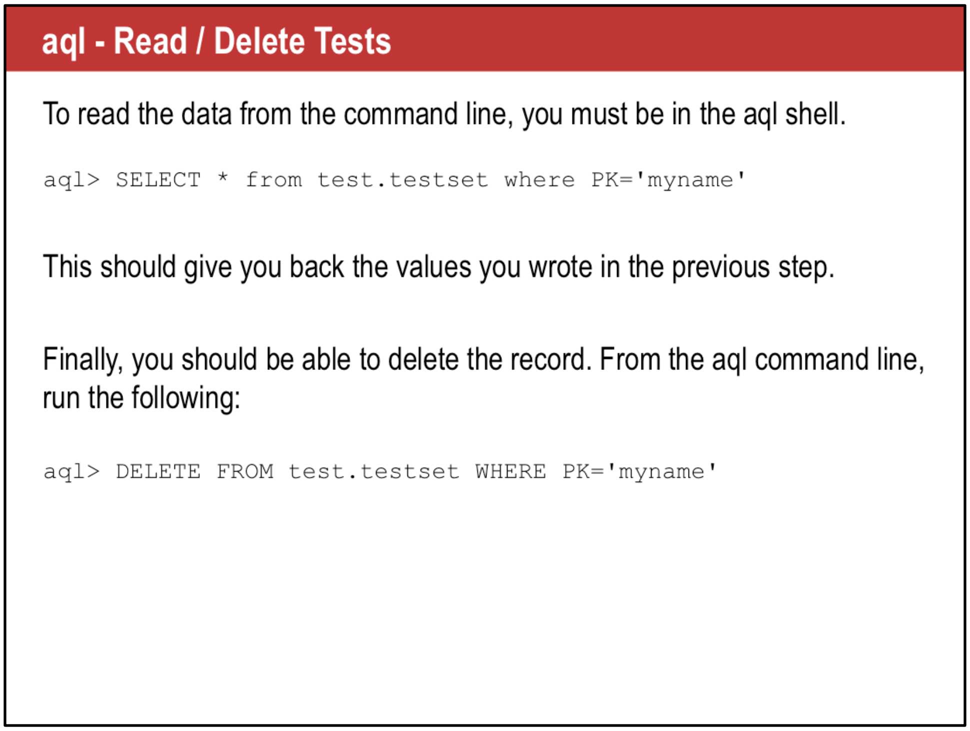
```
$ aql

$ aql> INSERT INTO test.testset (PK, company, age) \
      VALUES('myname', 'mycompany', '35')
```

Literals in AQL such as ‘test’ are case sensitive.

Command words like ‘INSERT’ are not case sensitive.

While not a sophisticated use of the server, using aql to run this test establishes connectivity to the database.



aql - Read / Delete Tests

To read the data from the command line, you must be in the aql shell.

```
aql> SELECT * from test.testset where PK='myname'
```

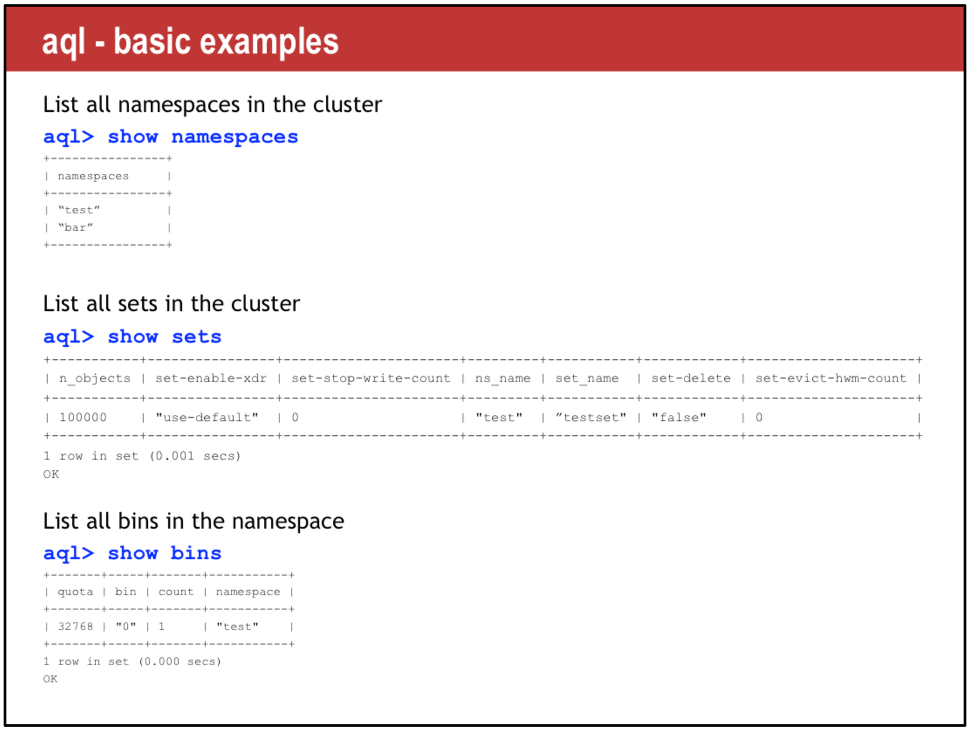
This should give you back the values you wrote in the previous step.

Finally, you should be able to delete the record. From the aql command line, run the following:

```
aql> DELETE FROM test.testset WHERE PK='myname'
```

Note very carefully that the key is not visible here. Aerospike does NOT store the key in the database by default.

If having the key itself is necessary for your application, you should make sure that it is stored as a value.



aql - basic examples

List all namespaces in the cluster

```
aql> show namespaces
+----------------+
| namespaces     |
+----------------+
| “test”         |
| “bar”          |
+----------------+
```

List all sets in the cluster

```
aql> show sets
+-----------+----------------+----------------------+---------+-----------+------------+---------------------+
| n_objects | set-enable-xdr | set-stop-write-count | ns_name | set_name  | set-delete | set-evict-hwm-count |
+-----------+----------------+----------------------+---------+-----------+------------+---------------------+
| 100000    | "use-default"  | 0                    | "test"  | ”testset" | "false"    | 0                   |
+-----------+----------------+----------------------+---------+-----------+------------+---------------------+
1 row in set (0.001 secs)
OK
```

List all bins in the namespace

```
aql> show bins
+-------+-----+-------+-----------+
| quota | bin | count | namespace |
+-------+-----+-------+-----------+
| 32768 | "0" | 1     | "test"    |
+-------+-----+-------+-----------+
1 row in set (0.000 secs)
OK
```

These simple commands will be useful in determining whether or not data was loaded into the system.

For namespaces, you cannot add or remove namespaces from an Aerospike cluster without restarting the whole cluster. So this set should be static once the cluster has started.

For sets, you can see

- A count on the number of objects (n_objects).
- Whether or not this set will be synchronized with another cluster.
- A counter on the number of times the set has hit the “stop-write” (read-only) mode. If this increments constantly, this generally means the database is very full and a danger sign.
- The namespace for the set.
- The set name.
- Determines whether or not the set has been marked for deletion.
- How many times the sets has evicted data. If this keeps incrementing, this is another sign the cluster is having space issues.

For bins:

- The total number of bins possible
- The bin name
- The total count of bins
- The namespace for the bins