

Experiment – 11

Schema design using HBase

```
[cloudera@quickstart ~]$ hbase shell
2021-07-31 12:43:55,060 INFO [main] Configuration.deprecation: hadoop.native.lib
is deprecated. Instead, use io.native.lib.available
HBase Shell; enter 'help<RETURN>' for list of supported commands.
Type "exit<RETURN>" to leave the HBase Shell
Version 1.0.0-cdh5.4.2, rUnknown, Tue May 19 17:07:29 PDT 2015
```

```
hbase(main):001:0> list
TABLE
0 row(s) in 1.2980 seconds
```

```
=> []
hbase(main):002:0> create 'customer','address','order'
0 row(s) in 2.9210 seconds
```

```
=> Hbase::Table - customer
hbase(main):003:0> list
TABLE
customer
1 row(s) in 0.0250 seconds
```

```
=> ["customer"]
hbase(main):004:0> █
```

```
=> ["customer"]
hbase(main):004:0> put 'customer','Manoj','address:city','Mumbai'
0 row(s) in 0.7580 seconds

hbase(main):005:0> put 'customer','Manoj','address:state','Maharashtra'
0 row(s) in 0.0450 seconds

hbase(main):006:0> put 'customer','Manoj','address:street','street1'
0 row(s) in 0.0290 seconds
```

```
hbase(main):007:0> put 'customer','Manoj','order:number','ORD-15'
0 row(s) in 0.0600 seconds

hbase(main):008:0> put 'customer','Manoj','order:amount','50'
0 row(s) in 0.0250 seconds

hbase(main):009:0> put 'customer','Tom','address:city','Pune'
0 row(s) in 0.1020 seconds

hbase(main):010:0> put 'customer','Tom','address:state','Maharashtra'
0 row(s) in 0.0470 seconds

hbase(main):011:0> put 'customer','Tom','address:street','street2'
0 row(s) in 0.1900 seconds
```

```
hbase(main):012:0> put 'customer','Tom','order:number','ORD-16'  
0 row(s) in 0.0340 seconds
```

```
hbase(main):013:0> put 'customer','Tom','order:amount','60'  
0 row(s) in 0.0370 seconds
```

```
hbase(main):014:0> █
```

```
hbase(main):014:0> get 'customer','Manoj'  
COLUMN                                CELL  
address:city                          timestamp=1627760971243, value=Mumbai  
address:state                          timestamp=1627761010812, value=Maharashtra  
address:street                         timestamp=1627761033154, value=street1  
order:amount                           timestamp=1627761241127, value=50  
order:number                           timestamp=1627761223592, value=ORD-15  
5 row(s) in 0.1290 seconds
```

```
hbase(main):015:0> █
```

```
hbase(main):015:0> get 'customer','Manoj','address'  
COLUMN                                CELL  
address:city                          timestamp=1627760971243, value=Mumbai  
address:state                          timestamp=1627761010812, value=Maharashtra  
address:street                         timestamp=1627761033154, value=street1  
3 row(s) in 0.0410 seconds
```

```
hbase(main):016:0> get 'customer','Manoj','address:city'  
COLUMN                                CELL  
address:city                          timestamp=1627760971243, value=Mumbai  
1 row(s) in 0.0730 seconds
```

```
hbase(main):017:0> get 'customer','Manoj','address:state'  
COLUMN                                CELL  
address:state                          timestamp=1627761010812, value=Maharashtra  
1 row(s) in 0.0180 seconds
```

```
hbase(main):018:0> █
```

```
hbase(main):018:0> scan 'customer'  
ROW                                    COLUMN+CELL  
Manoj                                column=address:city, timestamp=1627760971243, value=Mumbai  
Manoj                                column=address:state, timestamp=1627761010812, value=Maharashtra  
Manoj                                column=address:street, timestamp=1627761033154, value=street1  
Manoj                                column=order:amount, timestamp=1627761241127, value=50  
Manoj                                column=order:number, timestamp=1627761223592, value=ORD-15  
Tom                                  column=address:city, timestamp=1627761280413, value=Pune  
Tom                                  column=address:state, timestamp=1627761309987, value=Maharashtra  
Tom                                  column=address:street, timestamp=1627761337770, value=street2  
Tom                                  column=order:amount, timestamp=1627761419045, value=60  
Tom                                  column=order:number, timestamp=1627761404450, value=ORD-16  
2 row(s) in 0.3870 seconds
```

```
hbase(main):019:0> █
```

```

hbase(main):019:0> delete 'customer','Tom','address:street'
0 row(s) in 0.7250 seconds

hbase(main):020:0> scan 'customer'
ROW COLUMN+CELL
Manoj column=address:city, timestamp=1627760971243, value=Mumbai
Manoj column=address:state, timestamp=1627761010812, value=Maharashtra
Manoj column=address:street, timestamp=1627761033154, value=street1
Manoj column=order:amount, timestamp=1627761241127, value=50
Manoj column=order:number, timestamp=1627761223592, value=ORD-15
Tom column=address:city, timestamp=1627761280413, value=Pune
Tom column=address:state, timestamp=1627761309987, value=Maharashtra
Tom column=order:amount, timestamp=1627761419045, value=60
Tom column=order:number, timestamp=1627761404450, value=ORD-16
2 row(s) in 0.2280 seconds

hbase(main):021:0> █

```

```

hbase(main):021:0> alter 'customer','delete'=> 'address'
Updating all regions with the new schema...
0/1 regions updated.
0/1 regions updated.
0/1 regions updated.
1/1 regions updated.
Done.
0 row(s) in 5.7220 seconds

hbase(main):022:0> scan 'customer'
ROW COLUMN+CELL
Manoj column=order:amount, timestamp=1627761241127, value=50
Manoj column=order:number, timestamp=1627761223592, value=ORD-15
Tom column=order:amount, timestamp=1627761419045, value=60
Tom column=order:number, timestamp=1627761404450, value=ORD-16
2 row(s) in 0.0830 seconds

hbase(main):023:0> █

```

```

hbase(main):025:0> desc 'customer'
Table customer is ENABLED
customer
COLUMN FAMILIES DESCRIPTION
{NAME => 'order', DATA_BLOCK_ENCODING => 'NONE', BLOOMFILTER => 'ROW', REPLICATION_SCOPE => '0', VERSIONS => '1', COMPRESSION => 'NONE', MIN_VERSIONS => '0', TTL => 'FOREVER', KEEP_DELETED_CELLS => 'FALSE', BLOCKSIZE => '65536', IN_MEMORY => 'false', BLOCKCACHE => 'true'}
1 row(s) in 0.4100 seconds

hbase(main):026:0> █

```

```

hbase(main):004:0> create 'customer1', {NAME => 'address', VERSIONS => 3}
0 row(s) in 0.7820 seconds

=> Hbase::Table - customer1
hbase(main):005:0> list
TABLE
customer
customer1
2 row(s) in 0.0250 seconds

=> ["customer", "customer1"]
hbase(main):006:0> count 'customer1'
0 row(s) in 0.0770 seconds

=> 0
hbase(main):007:0> count 'customer'
2 row(s) in 0.0480 seconds

=> 2
hbase(main):008:0> █

```

```

hbase(main):006:0> count 'customer1'
0 row(s) in 0.0770 seconds

=> 0
hbase(main):007:0> count 'customer'
2 row(s) in 0.0480 seconds

=> 2
hbase(main):008:0> alter 'customer', NAME => 'address',VERSIONS =>5
Updating all regions with the new schema...
0/1 regions updated.
1/1 regions updated.
Done.
0 row(s) in 2.6530 seconds

hbase(main):009:0> desc 'customer'
Table customer is ENABLED
customer
COLUMN FAMILIES DESCRIPTION
{NAME => 'address', DATA_BLOCK_ENCODING => 'NONE', BLOOMFILTER => 'ROW', REPLICATION_SCOPE => '0', COMPRESSION => 'NONE', VERSIONS => '5', TTL => 'FOREVER', MIN_VERSIONS => '0', KEEP_DELETED_CELLS => 'FALSE', BLOCKSIZE => '65536', IN_MEMORY => 'false', BLOCKCACHE => 'true'}
{NAME => 'order', DATA_BLOCK_ENCODING => 'NONE', BLOOMFILTER => 'ROW', REPLICATION_SCOPE => '0', VERSIONS => '1', COMPRESSION => 'NONE', MIN_VERSIONS => '0', TTL => 'FOREVER', KEEP_DELETED_CELLS => 'FALSE', BLOCKSIZE => '65536', IN_MEMORY => 'false', BLOCKCACHE => 'true'}
2 row(s) in 0.0580 seconds

hbase(main):010:0> █

hbase(main):011:0> put 'customer','Tom','address:city','Thane'
0 row(s) in 0.3660 seconds

hbase(main):012:0> put 'customer','Tom','address:city','Bangalore'
0 row(s) in 0.0130 seconds

hbase(main):013:0> put 'customer','Tom','address:city','Delhi'
0 row(s) in 0.0160 seconds

hbase(main):014:0> scan 'customer'
ROW COLUMN+CELL
Manoj column=address:city, timestamp=1627760971243, value=Mumbai
Manoj column=address:state, timestamp=1627761010812, value=Maharashtra
Manoj column=address:street, timestamp=1627761033154, value=street1
Manoj column=order:amount, timestamp=1627761241127, value=50
Manoj column=order:number, timestamp=1627761223592, value=ORD-15
Tom column=address:city, timestamp=1627763291678, value=Delhi
Tom column=address:state, timestamp=1627761309987, value=Maharashtra
Tom column=order:amount, timestamp=1627761419045, value=60
Tom column=order:number, timestamp=1627761404450, value=ORD-16
2 row(s) in 0.1640 seconds

```

```
hbase(main):015:0> scan 'customer', {COLUMN => 'address:city',VERSIONS =>2}
ROW          COLUMN+CELL
Manoj        column=address:city, timestamp=1627760971243, value=Mumbai
Tom          column=address:city, timestamp=1627763291678, value=Delhi
Tom          column=address:city, timestamp=1627763249851, value=Bangalore
2 row(s) in 0.0550 seconds

hbase(main):016:0> scan 'customer', {COLUMN => 'address:city',VERSIONS =>3}
ROW          COLUMN+CELL
Manoj        column=address:city, timestamp=1627760971243, value=Mumbai
Tom          column=address:city, timestamp=1627763291678, value=Delhi
Tom          column=address:city, timestamp=1627763249851, value=Bangalore
Tom          column=address:city, timestamp=1627763232886, value=Thane
2 row(s) in 0.0500 seconds

hbase(main):017:0> scan 'customer', {COLUMN => 'address:city',VERSIONS =>4}
ROW          COLUMN+CELL
Manoj        column=address:city, timestamp=1627760971243, value=Mumbai
Tom          column=address:city, timestamp=1627763291678, value=Delhi
Tom          column=address:city, timestamp=1627763249851, value=Bangalore
Tom          column=address:city, timestamp=1627763232886, value=Thane
Tom          column=address:city, timestamp=1627761280413, value=Pune
2 row(s) in 0.1110 seconds

hbase(main):018:0> scan 'customer', {COLUMN => 'address:city',VERSIONS =>5}
ROW          COLUMN+CELL
Manoj        column=address:city, timestamp=1627760971243, value=Mumbai
Tom          column=address:city, timestamp=1627763291678, value=Delhi
Tom          column=address:city, timestamp=1627763249851, value=Bangalore
Tom          column=address:city, timestamp=1627763232886, value=Thane
Tom          column=address:city, timestamp=1627761280413, value=Pune
2 row(s) in 0.0480 seconds

hbase(main):019:0> █

hbase(main):019:0> scan 'customer', {VERSIONS =>5}
ROW          COLUMN+CELL
Manoj        column=address:city, timestamp=1627760971243, value=Mumbai
Manoj        column=address:state, timestamp=1627761010812, value=Maharashtra
Manoj        column=address:street, timestamp=1627761033154, value=street1
Manoj        column=order:amount, timestamp=1627761241127, value=50
Manoj        column=order:number, timestamp=1627761223592, value=ORD-15
Tom          column=address:city, timestamp=1627763291678, value=Delhi
Tom          column=address:city, timestamp=1627763249851, value=Bangalore
Tom          column=address:city, timestamp=1627763232886, value=Thane
Tom          column=address:city, timestamp=1627761280413, value=Pune
Tom          column=address:state, timestamp=1627761309987, value=Maharashtra
Tom          column=order:amount, timestamp=1627761419045, value=60
Tom          column=order:number, timestamp=1627761404450, value=ORD-16
2 row(s) in 0.1260 seconds

hbase(main):020:0> █
```

```
hbase(main):020:0> disable 'customer'  
0 row(s) in 1.5750 seconds
```

```
hbase(main):021:0> list  
TABLE  
customer  
customer1  
2 row(s) in 0.0370 seconds
```

```
=> ["customer", "customer1"]  
hbase(main):022:0> scan 'customer'  
ROW                                COLUMN+CELL
```

```
ERROR: customer is disabled.
```

Here is some help for this command:

Scan a table; pass table name and optionally a dictionary of scanner specifications. Scanner specifications may include one or more of: TIMERANGE, FILTER, LIMIT, STARTROW, STOPROW, TIMESTAMP, MAXLENGTH, or COLUMNS, CACHE or RAW, VERSIONS

If no columns are specified, all columns will be scanned.

To scan all members of a column family, leave the qualifier empty as in 'col_family:'.

The filter can be specified in two ways:
