



APACHE CASSANDRA™ QUERY LANGUAGE (CQL) REFERENCE

What is Cassandra?

Apache Cassandra is a high performance, extremely scalable, fault tolerant (i.e. no single point of failure), distributed post-relational database solution. Cassandra combines all the benefits of Google Bigtable and Amazon Dynamo to handle the types of database management needs that traditional RDBMS vendors cannot support. DataStax is the leading worldwide commercial provider of Cassandra products, services, support, and training.

How do I install Cassandra?

Downloading and installing Cassandra is very easy. Downloads of Cassandra are available via the DataStax web site at: www.datastax.com/download.

For installation guidance, please see our online documentation at: www.datastax.com/docs/1.0/getting_started/index and www.datastax.com/docs/1.0/install/index. You can also view a guided video tutorial for installing a simple Cassandra and DataStax OpsCenter setup at: www.datastax.com/resources/tutorials.

What client libraries/drivers can I use with Cassandra?

There are a number of CQL (Cassandra Query Language) drivers and native client libraries available for most all popular development languages (e.g. Java, Ruby, etc.) All drivers and client libraries can be downloaded from: www.datastax.com/download/clientdrivers.

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ALTER COLUMNFAMILY Modifies a column family

```
ALTER COLUMNFAMILY <column family> ADD
<column> <validator>;
ALTER COLUMNFAMILY <column family> ALTER
<column> TYPE <validator>;
ALTER COLUMNFAMILY <column family> DROP
<column>;
```

BATCH Applies a single consistency level to many DML statements

```
BEGIN BATCH [USING <consistency> [AND
TIMESTAMP <timestamp>] [AND TTL <timetolive>]] <DML statements>;
APPLY BATCH;
```

CREATE COLUMN FAMILY Creates a new column family

```
CREATE COLUMNFAMILY <column family name>
(<key name> <type> PRIMARY KEY [, <name2>
<type2> [, <name3> <type3>, ...]) [WITH
<option name> = <value> [AND <option name>
= <value> [...]];
```

CREATE INDEX Creates a new index on a column family

```
CREATE INDEX <index name> ON <column family> [(column name)];
```

CREATE KEYSPACE Creates a new keyspace

```
CREATE KEYSPACE <name> WITH strategy_
class = <strategy name> [AND strategy_
options:<option> = <value> [...]];
```

DELETE Deletes columns and/or rows from a column family

```
DELETE [<colname> [, <colname2> [, ...]]
FROM <column family> [USING <consistency>
[AND TIMESTAMP <timestamp>]] WHERE <key
name> IN (<key1> [, <key2> [, ...]]);
```

DROP COLUMNFAMILY Drops/removes a column family

```
DROP COLUMNFAMILY <column family>;
```

DROP INDEX Drops/removes a column family index

```
drop index <index name>;
```

DROP KEYSPACE Drops/removes a keyspace

```
DROP KEYSPACE <keyspace>;
```

SELECT Retrieves data based on criteria

```
SELECT [FIRST <n>] [REVERSED] <select
expr> FROM <column family> [USING <consistency>] [WHERE <clause>] [LIMIT <n>];
```

UPDATE Updates data in a column family

```
UPDATE <column family> [USING <consistency> [AND TIMESTAMP <timestamp>] [AND
TTL <timetolive>]] SET <column name 1> =
<value1> [, <column name 2> = <value2>
[, ...]] WHERE <key name> IN (<key1> [,
<key2> [, ...]]);
```

TRUNCATE Removes all data in a column family

```
TRUNCATE <column family>;
```

USE Switch to a keyspace to perform work

```
USE <keyspace name>;
```

Supported Consistency Levels

- CONSISTENCY ONE (default)
- CONSISTENCY QUORUM
- CONSISTENCY ALL
- CONSISTENCY EACH_QUORUM
- CONSISTENCY LOCAL_QUORUM

SUPPORTED DATATYPES

TYPE	DESCRIPTION
ascii	ASCII character string
bigint	8-byte long
blob	Arbitrary bytes (no validation)
boolean	true or false
counter	Counter column (8-byte long)
decimal	Variable-precision decimal
double	8-byte floating point
float	4-byte floating point
int	4-byte integer
text	UTF8 encoded string
timestamp	Date plus time, encoded as 8 bytes since epoch
uuid	Type 1, or type 4 UUID
varchar	UTF8 encoded string
varint	Arbitrary-precision integer

ABOUT DATASTAX

DataStax is the primary developer of and worldwide leader in Apache Cassandra. DataStax provides free and commercial software products including DataStax Enterprise, a distributed, scalable, and highly available database platform, based on Apache Cassandra, that is designed for the management of both real-time and analytic workloads. The company has over 100 customers, including leaders such as Netflix, Cisco, Rackspace and Constant Contact, and spanning verticals including web, financial services, telecommunications, logistics and government.

DataStax is backed by industry leading investors, including Lightspeed Venture Partners and Crosslink Capital and is based in Burlingame, CA with offices in Austin, TX and Stamford, CT.

For more information and software downloads, visit www.datastax.com.