



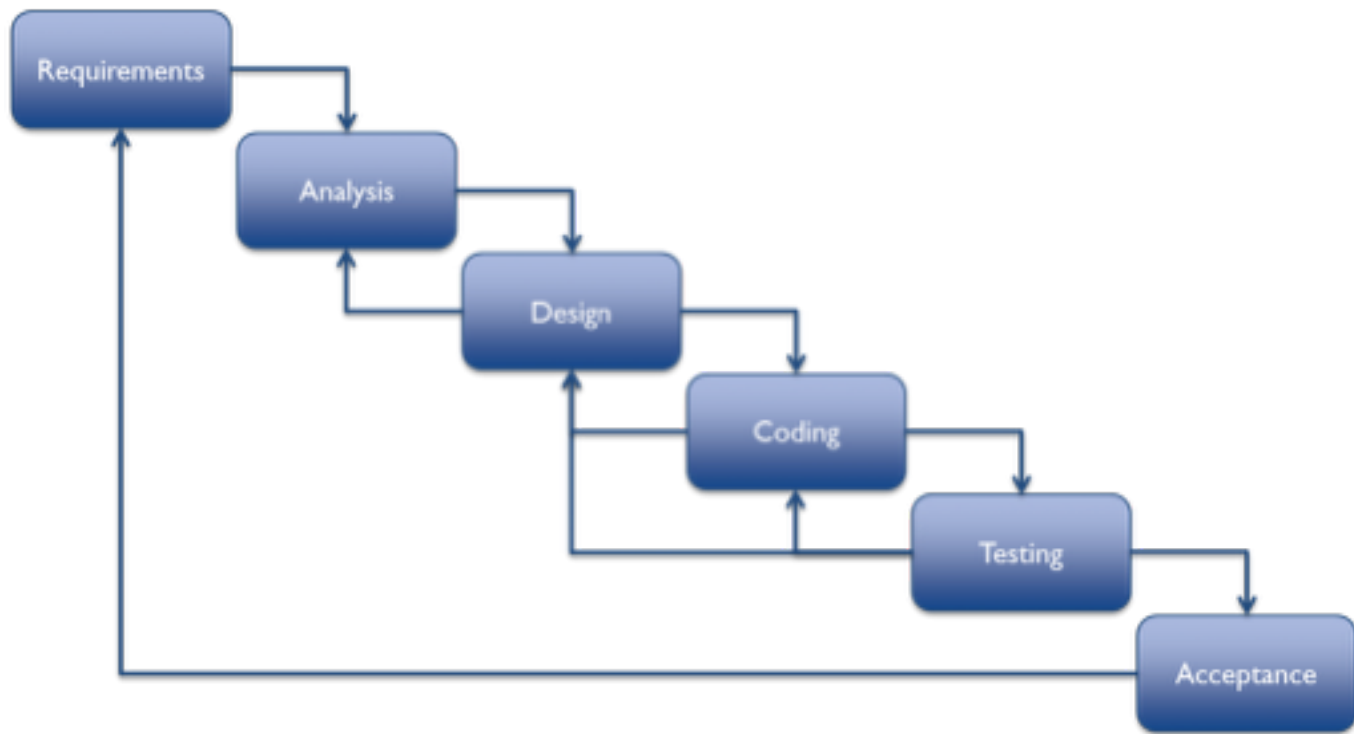
Developers, Developers,... DataStax Tools for Developers

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|---|-----------------------------|
| 1 | End to end development |
| 2 | Tools for Analysis & Design |
| 3 | Tools for Data loading |
| 4 | Tools for Development |

Development process





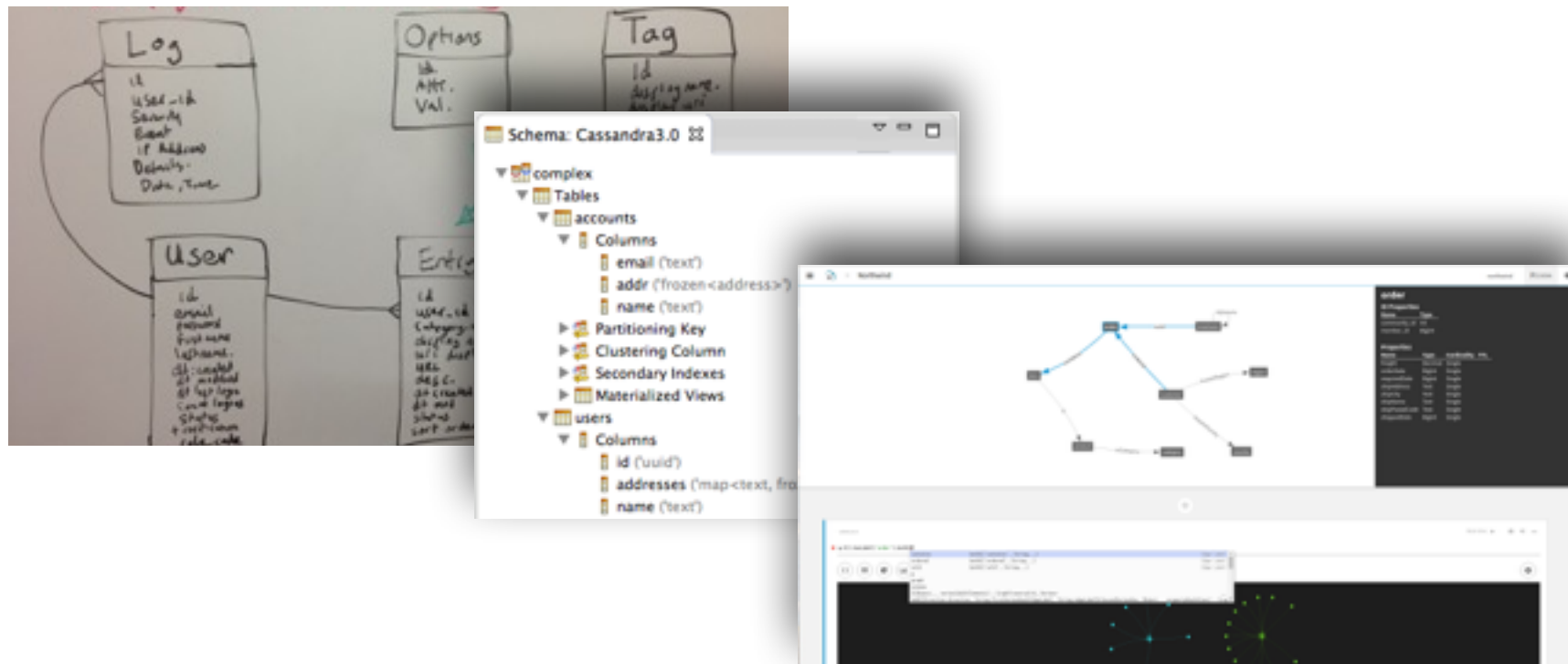
Analysis & Design

Starting on the right foot

Analysis & Design

- Architecture discussions and decisions
 - Frameworks, libraries, and tools
- Data modeling
 - Model validation
- Prototyping or proof of concepts
 - Sample data

Data modeling



Working with schemas

The screenshots show the 'New Table' wizard in the Cassandra GUI, illustrating the steps to create a new table:

- Basic Settings:** Defines the table's basic structure. Connection: `Cassandra 3.0`. Keyspace: `test`. Table name: `user`. Columns:

Name	Type	Primary Key	Index
<code>id</code>	<code>int</code>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<code>username</code>	<code>text</code>	<input type="checkbox"/>	<input type="checkbox"/>
<code>points</code>	<code>int</code>	<input type="checkbox"/>	<input type="checkbox"/>
- Primary Key Settings:** Defines the table's primary key structure. Available columns: `id`, `username`, `points`. Partition key: `id`. Clustering columns:

Name	Order
<code>username</code>	<code>Asc</code>
<code>points</code>	<code>Desc</code>
- Advanced Settings:** Defines advanced properties for the table. Table options:

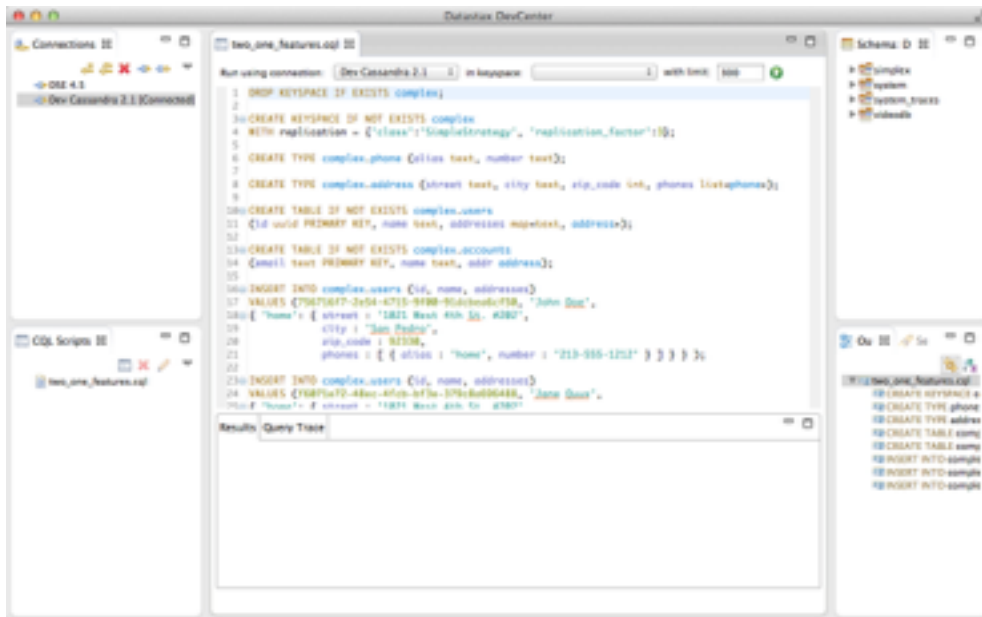
Option	Value
<code>Compression</code>	<code>snappy</code>
<code>Read repair threshold</code>	<code>1.0</code>
<code>GC threshold</code>	<code>1.0</code>
<code>Read repair threshold</code>	<code>1.0</code>
<code>Default time to live</code>	<code>0</code>
<code>Max value</code>	<code>1000000000</code>
<code>Minimum value interval</code>	<code>1000000000</code>
<code>Maximum value interval</code>	
<code>Maximum flush period</code>	
<code>Replicate to</code>	<code>all</code>

 Compression: ☒ `snappy`. `Read repair threshold`: `1.0`. `GC threshold`: `1.0`. `Read repair threshold`: `1.0`.
- Summary:** Review the generated statements below and choose the appropriate actions to perform. ☒ Execute the generated statements using connection `Cassandra 3.0`. ☐ Insert the generated statements into: `test` (new CQL editor) or `test` (existing CQL editor).

The final CQL statement generated is:

```
CREATE TABLE test.user (
  id int,
  username text,
  points int,
  PRIMARY KEY (id, username, points))
WITH CLUSTERING ORDER BY (username ASC, points DESC);
```


Introducing DataStax DevCenter



- Free visual schema and query IDE
- Manage connections
- Visualize schemas
- Schema wizards
- Best CQL editor
 - syntactic and semantic auto-completion
 - real-time validations and quick fixes

Data loading for PoC/Prototypes

- Professional ETL tools

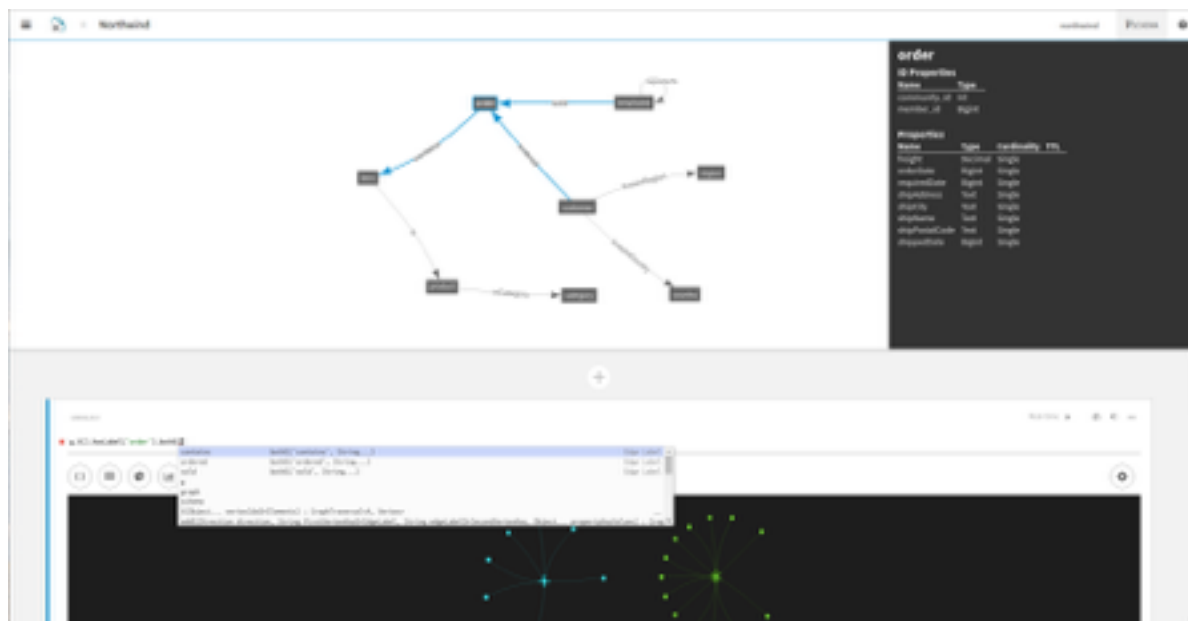
- Cassandra Loader

<<https://github.com/brianmhess/cassandra-loader>>

- DSE Graph Loader

<https://docs.datastax.com/en/latest-dse/datastax_enterprise/graph/dgl/graphloaderTOC.html>

Introducing DataStax Studio for DSE Graph



- Intuitive web-based developer tool DSE Graph
 - querying
 - exploring
 - analyzing
 - visualizing
- Notebook style
- Advanced Gremlin editor
- Various result type representations
- Pre-packaged visualization

What we got with the right tools

- Data model satisfying your requirements
- Schema scripts
 - Easily recreate development or testing environments
- Test data
- CQL scripts of DataStax Studio Notebooks for validating & demoing



Development

The alchemy of coding, debugging, testing, tuning

DataStax Drivers



Goals of DataStax Drivers

- Consistent set of features across languages
 - Asynchronous execution
 - Automatic cluster discovery
 - Connection pools and automatic reconnection
 - Load balancing
 - Fault tolerant
 - Address resolution
- Flexible to the core
- Consistent terminology
 - Cluster -> Session -> PreparedStatement & Statement -> Future or ResultSet

Other connectors

- ODBC driver with CQL connector
- ODBC & JDBC drivers for Spark
- Spark connector
- Kafka sink connector

How to choose a connector

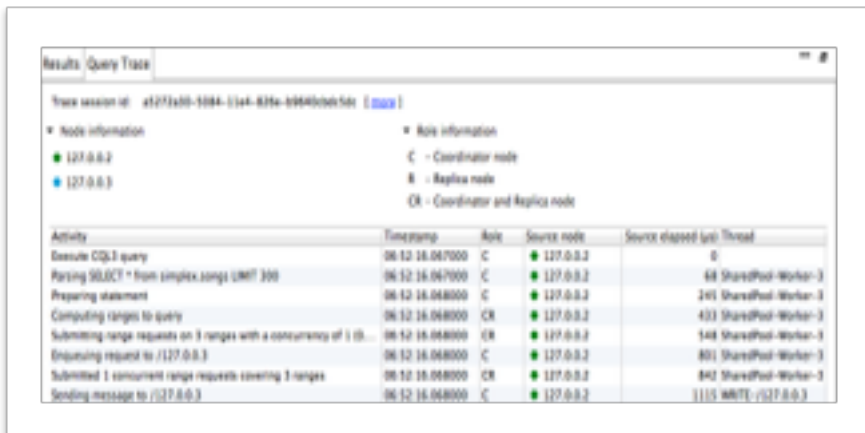
- Native CQL connectors for application development
- Extracting data and/or aggregations
 - ODBC driver with CQL connector for small aggregations on highly selective queries
 - ODBC/JDBC for Spark for large aggregations or large extractions

Testing

- CCM
 - set up local clusters
 - CLI
- Docker images
 - quickly test specific versions
- cassandra-unit
 - embedded Apache Cassandra
- scassandra
 - mock Apache Cassandra server
 - admin REST API

Query debugging & profiling

DataStax DevCenter



DataStax Studio for DSE Graph

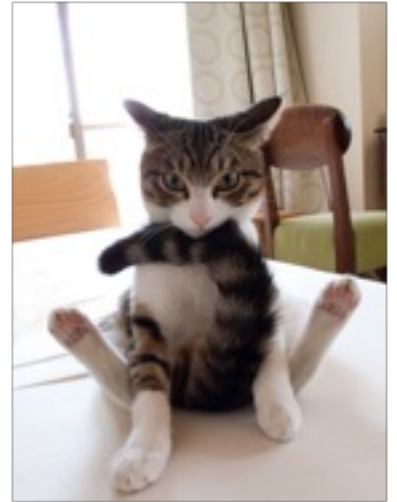


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Q&A

Thank you!



DataStax

Community