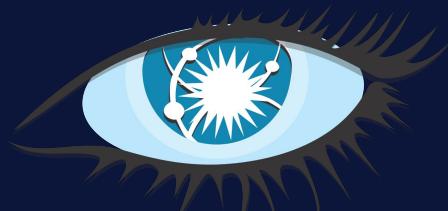




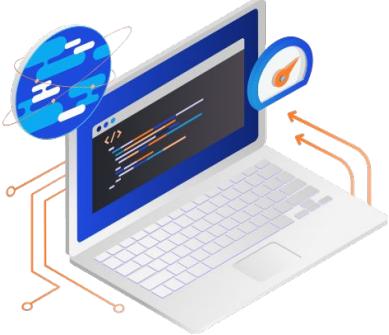
Workshop online Series

NoSQLBench with Cassandra



cassandra





Your hosts



David Jones-Gilardi



Developer Advocate



DataStax happy
Folks



Jack Fryer



Community Manager



Cédrick Lunven
Developer Advocate



Aleksandr Volochnev
Developer Advocate



NoSQLBench with Apache Cassandra™

1

Housekeeping and Setup

2

NoSQLBench What and Why

3

Executing Commands

4

Dashboarding + Grafana | Prometheus

5

Custom Workloads

6

Resources



**What we're NOT
doing today**

NoSQLBench with Apache Cassandra™

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Disclaimer

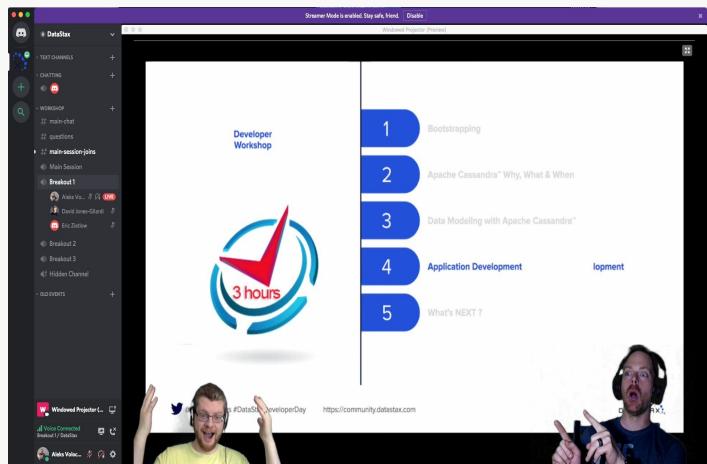
Today,

With limited time (2H), we won't introduce the basics of Apache Cassandra™ (like we do every other wednesday).

DON'T WORRY (seriously): You will be able to do the hands-on as we are showing step-by-steps.



STREAMS



YouTube



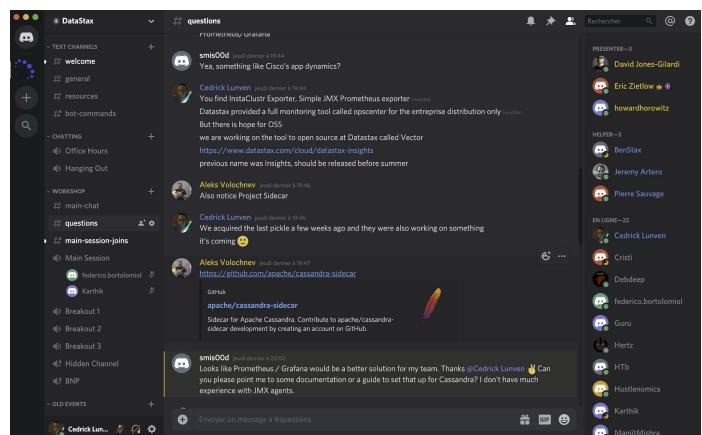
Twitch



RUNTIME



QUESTIONS



Discord

MATERIALS



Slides



Notebooks



DockerFile



Github



Katacoda

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DataStax, Learn Apache Cassandra with our Hands-on Exercises

@datastax

More scenarios coming soon at <https://datastax.com/dev> and <https://academy.datastax.com>

Share Your Success

Share

Share

3 SCENARIOS

Getting Started with Astra

Several scenarios to get started using Astra API services.

7 SCENARIOS

Apache Cassandra™ Learning Series for Developers

Hands-on introduction to Apache Cassandra™

7 SCENARIOS

Cassandra: Try It Out!

Get your first experience working with Apache Cassandra™ in just a few minutes

Start Course

Start Course

Start Course



Cassandra Developer Workshop

youtube.com/watch?v=v... | 17

PERSO ff4j DATASTAX TMP Other Bookmarks

YouTube FR

Cassandra Lightweight Transactions

```
KVUser@cqlsh> SELECT * FROM killrvideo.user_credentials WHERE email = 'new_user@gmail.com';
email          | password | userid
new_user@gmail.com | password_A | 6d8d869d-6ff4-4bd8-be66-d4334f3d2e4b
(1 rows)
KVUser@cqlsh> UPDATE killrvideo.user_credentials SET password = 'password_XYZ'
... WHERE email = 'new_user@gmail.com'
... IF password = 'password_A';
```

Here's an UPDATE LWT

Operators: =, <, <=, >, >=, != and IN

1:07:47 / 2:33:37

An online workshop using the NoSQLBench benchmarking tool

Manage topics

91 commits, 1 branch, 0 packages, 0 releases, 1 contributor

Branch: master New pull request

SonicDMG Updated links for Katacoda Latest commit 7443274 1 hour ago

0-setup Updated Katacoda link 1 hour ago

1-executing-commands Rename README.MD to README.md 2 days ago

Clone or download

#main-chat

discord.com/channels/685554030159593522/68556034541...

PERSO ff4j DATASTAX TMP wks-k8s Content

Fellowship of the (Cas... Apache Cassandra

main-chat

/home/ubuntu/node1/resources/cassandra/conf/cassandra-rackdc.properties , only then Start node1. Once it is up, start node2. if more explanation and create a thread to troubleshoot open a question on community.datastax.com

Jack Fryer Aujourd'hui à 12:16

@Jack Fryer Thanks for the vouchers
I was able to pass both exams Cassandra Developer and Cassandra Administrator!
@IO Epic congrats!!

Envoyer un message à #main-chat

~/nosqlbench (zsh)

```
drwxr-xr-x  17 davidgilardi staff      544 Jun  1 20:45 .
drwxr-xr-x+ 40 davidgilardi staff     1280 Jun  2 11:35 ..
-rw-r--r--  1 davidgilardi staff    4250 May 29 11:43 cql-iot-allow-filter
-rw-r--r--@ 1 davidgilardi staff   2587 May 29 15:52 cql-iot-basic-all
-rw-r--r--@ 1 davidgilardi staff   537 May 29 15:45 cql-iot-basic-main
-rw-r--r--@ 1 davidgilardi staff  1024 May 29 15:44 cql-iot-basic-ramp
-rw-r--r--@ 1 davidgilardi staff  3358 Jun  1 17:17 cql-iot-basic-scenario
-rw-r--r--@ 1 davidgilardi staff  2633 May 29 20:23 cql-iot-basic-scenario
-rw-r--r--@ 1 davidgilardi staff  1169 May 29 15:44 cql-iot-basic-schedule
-rw-r--r--  1 davidgilardi staff  2621 May 29 15:36 cql-iot-basic.yaml
-rw-r--r--  1 davidgilardi staff  4256 May 27 09:39 cql-iot-modify.yaml
-rw-r--r--  1 davidgilardi staff  4256 May 31 15:06 cql-iot.yaml
-rw-r--r--  1 davidgilardi staff  2483 May 27 10:09 cql-keyvalue.yaml
-rw-r--r--  1 davidgilardi staff  2919 May 27 10:08 cql-tabular.yaml
drwxr-xr-x  32 davidgilardi staff   1024 May 28 10:55 csv
drwxr-xr-x  456 davidgilardi staff  14592 Jun  2 10:45 logs
-rw-r--r--@ 1 davidgilardi staff 107559649 Jun  1 08:18 nb.jar
+ nosqlbench
```

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NoSQLBench with Apache Cassandra™

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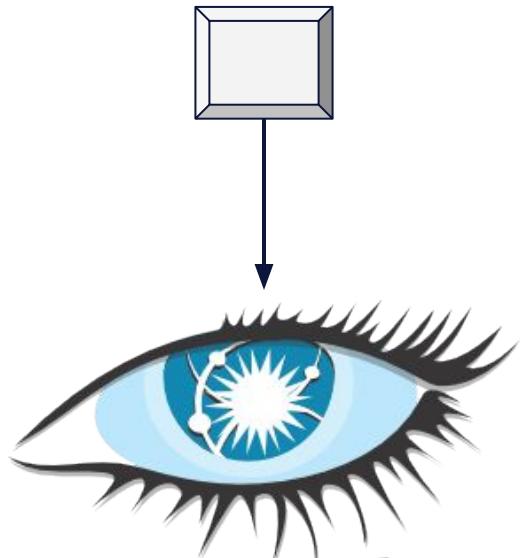
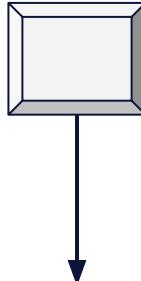
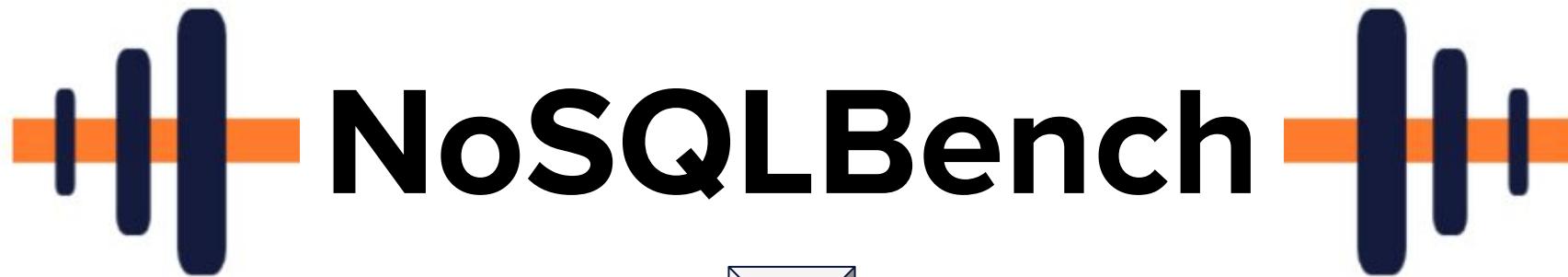
Custom Workloads

6

Resources



*"...is a serious **performance testing tool** for the
NoSQL ecosystem"*



cassandra

DATASTAX

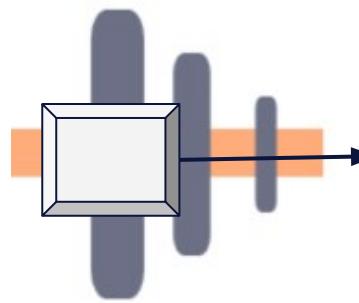
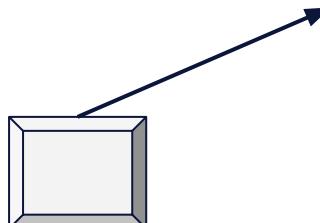
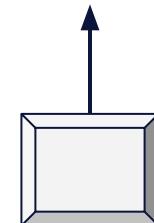
ASTRA

TCP/IP

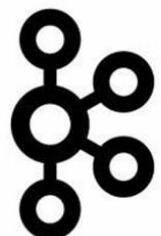
...etc

HTTP

NoSQLBench



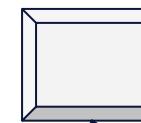
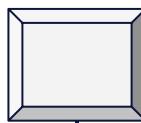
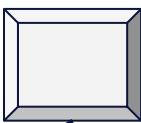
mongoDB



kafka



cassandra



DATASTAX®

(9 panels)

ful Ops



Error Counts



Why Benchmark?

head



p99 client overhead



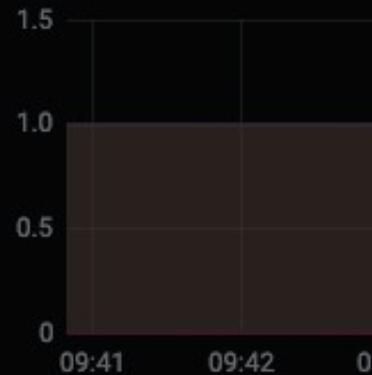
service time distribution



service time range



op tries



Why Benchmark?

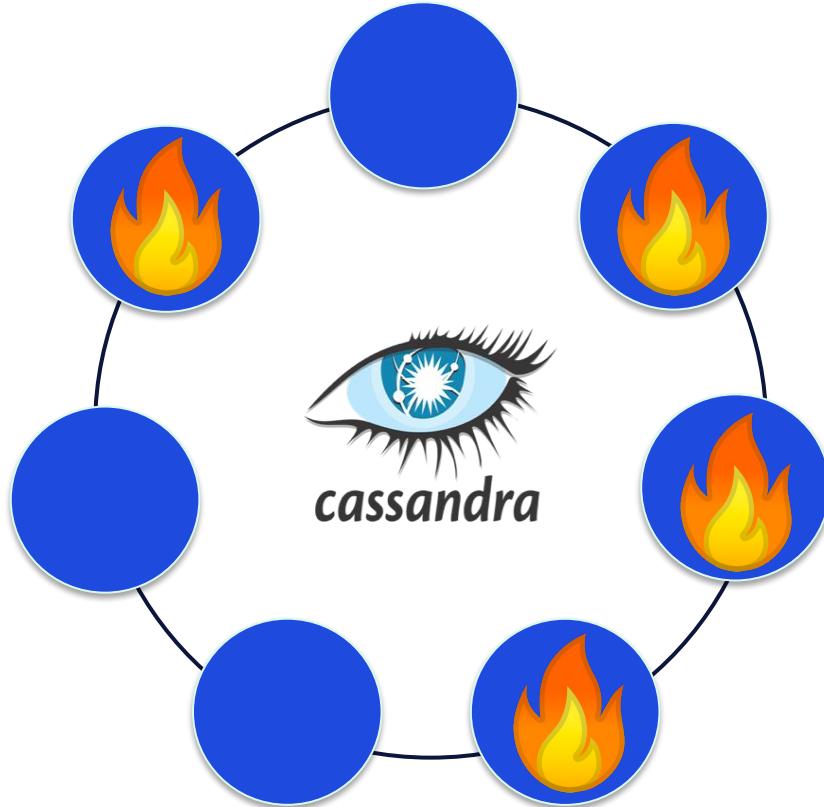
comments_by_user			
userid	UUID	K	
commentid	TIMEUUID	C	↓
videoid	UUID		
comment	TEXT		

comments_by_video			
videoid	UUID	K	
commentid	TIMEUUID	C	↓
userid	UUID		
comment	TEXT		

Why Benchmark?

comments_by_user			
userid	UUID	K	C ↓
commentid	TIMEUUID	C	↓
videoid	UUID		
comment	TEXT		

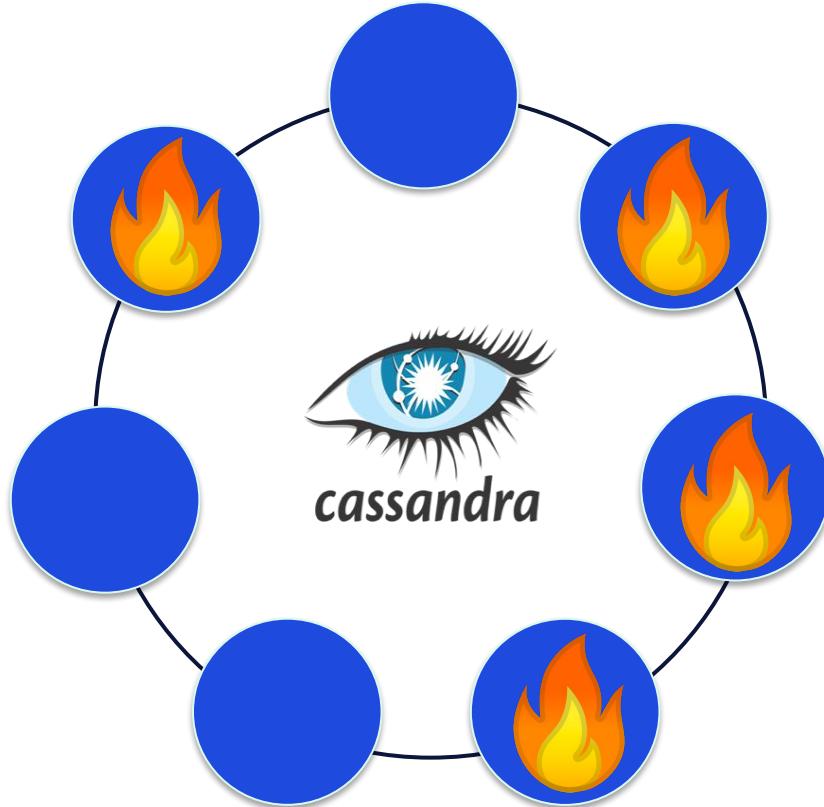
comments_by_video			
videoid	UUID	K	C ↓
commentid	TIMEUUID	C	↓
userid	UUID		
comment	TEXT		



Why Benchmark?

comments_by_user			
userid	UUID	K	C ↓
commentid	TIMEUUID	C	↓
videoid	UUID		
comment	TEXT		

comments_by_video			
videoid	UUID	K	C ↓
commentid	TIMEUUID	C	↓
userid	UUID		
comment	TEXT		



$$2I = (A + \eta)^2 + \kappa^2 \text{ and } I =$$

$$\left(\frac{4K(I+K)}{P_{SP} - P_0} \right)$$

$$\sum a_k$$

1-7

Support

bench Showcase

art Example

g Workloads

Workloads

Types

e

Functions

Welcome to NoSQLBench

Welcome to the documentation for NoSQLBench. This is a power tool that emulates real application track performance, sizing and data model testing without writing your own testing harness.

To get started right away, jump to the [Quick Start Example](#) from the menu on the left.

To see the ways you can get NoSQLBench, check out the project site [DOWNLOADS.md](#).

What is NoSQLBench?

NoSQLBench is a serious performance testing tool for the NoSQL ecosystem.

NoSQLBench brings advanced testing capabilities into one tool that are not found in other testing tools.

- You can run common testing workloads directly from the command line. You can start doing this now.
- You can generate virtual data sets of arbitrary size, with deterministic data and statistically shaped data.
- You can design custom workloads that emulate your application, contained in a single file, based on your needs.
- You can immediately plot your results in a docker and grafana stack on Linux with a single command.
- When needed, you can open the access panels and rewire the runtime behavior of NoSQLBench to script in a simple scripting environment with Javascript.



```
→ nosqlbench java -jar nb.jar ./cql-iot --progress console:1s --docker-metrics
10:13:35.286 [main] WARN io.nosqlbench.engine.cli.NBCLI - Docker Containers are started,
in your browser: http://<host>:3000 and http://<host>:9090
Logging to logs/scenario_20200602_101335_305.log
cqliot_default_000: 100.00%/Running (details: min=0 cycle=3 max=3) (last report)
cqliot_default_001: 0.01%/Running (details: min=0 cycle=1277 max=10000000)
cqliot_default_001: 0.05%/Running (details: min=0 cycle=5147 max=10000000)
cqliot_default_001: 0.09%/Running (details: min=0 cycle=9361 max=10000000)
cqliot_default_001: 0.14%/Running (details: min=0 cycle=14370 max=10000000)
cqliot default 001: 0.21%/Running (details: min=0 cycle=20508 max=10000000)
```

NoSQLBench with Apache Cassandra™

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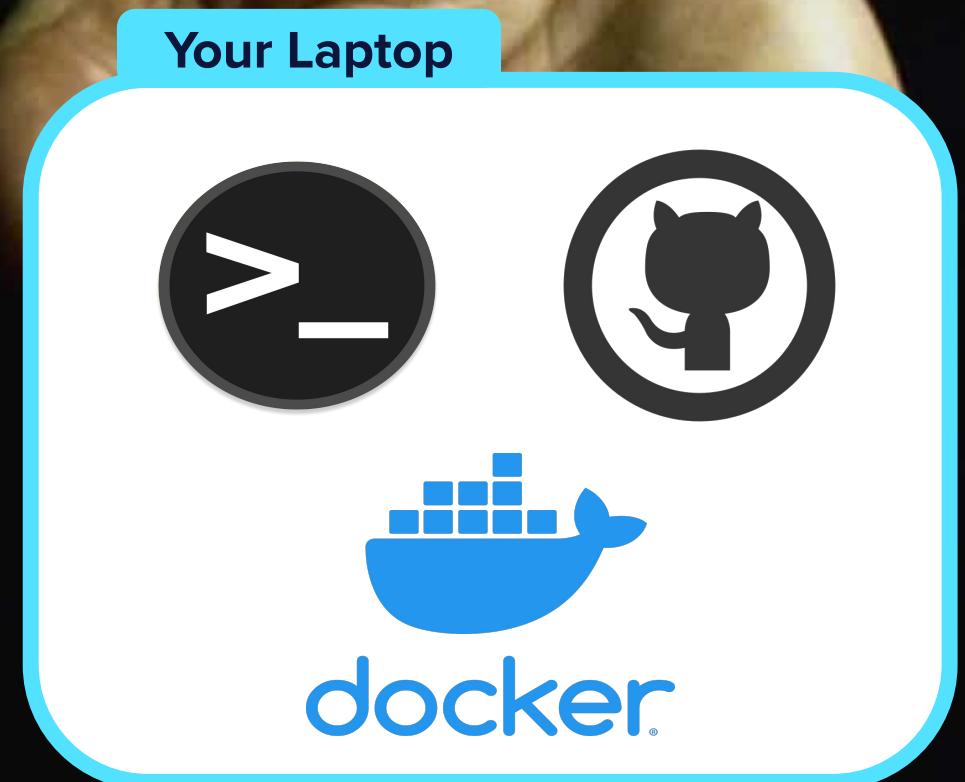
Custom Workloads

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YOUR LAPTOP



CLOUD INSTANCE



Online Workshops



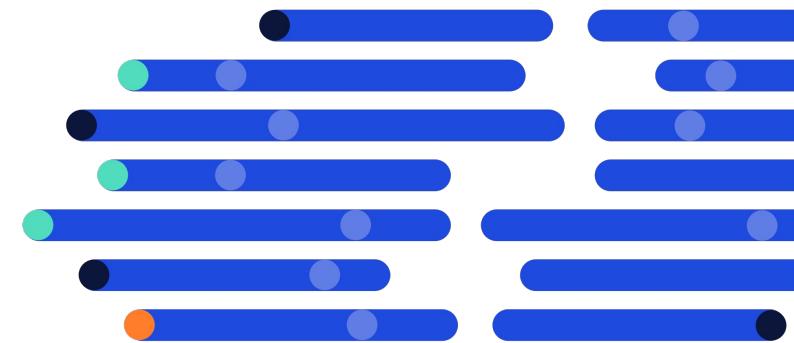
Exercise #1 : NoSQLBench Intro



<https://katacoda.com/datastax/courses/nosqlbench-intro/nosqlbench>



<https://github.com/DataStax-Academy/nosqlbench-workshop-online/tree/master/1-executing-commands>



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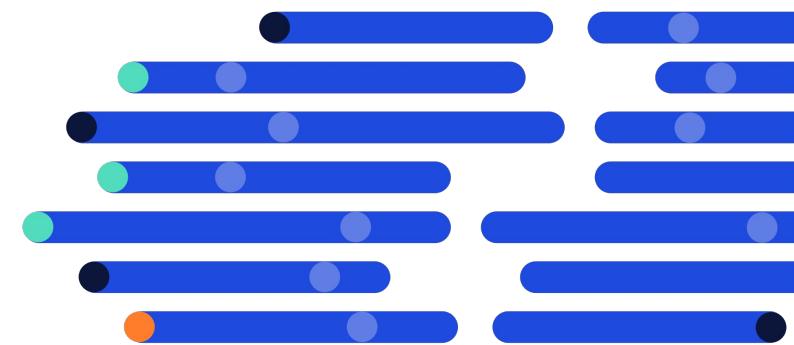
Exercise #2 : Metrics with Grafana



<https://katacoda.com/datastax/courses/nosqlbench-intro/nosqlbench-grafana>



<https://github.com/DataStax-Academy/nosqlbench-workshop-online/tree/master/2-grafana-metrics>



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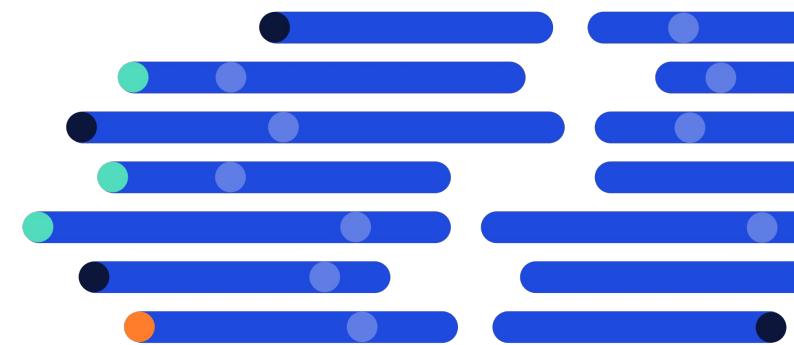
Exercise #3 : Custom workloads



<https://katacoda.com/datastax/courses/nosqlbench-intro/nosqlbench-modify-workload>



<https://github.com/DataStax-Academy/nosqlbench-workshop-online/tree/master/3-custom-workloads>



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Developer Resources

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Join community.datastax.com
Ask/answer community user questions - share your expertise

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We are on Twitter - Youtube - Twitch!

Slides and code for this course are available at
<https://academy.datastax.com/resources/cassandra-developer-workshop>

REVIEW

Accelerate
<https://www.datastax.com/accelerate/why-tomorrows-cassandra-deployments-will-be-on-kubernetes>



Training Courses at DataStax Academy

- Free self-paced DSE 6 courses
 - [DS201: DataStax Enterprise 6 Foundations of Apache Cassandra™](#)
 - [DS210: DataStax Enterprise 6 Operations with Apache Cassandra™](#)
 - [DS220: DataStax Enterprise 6 Practical Application Data Modeling with Apache Cassandra™](#)
 - [DS330: DataStax Enterprise 6 Graph](#)
 - [DS332: DataStax Enterprise 6 Graph Analytics \(NEW\)](#)



Cassandra The Definitive Guide

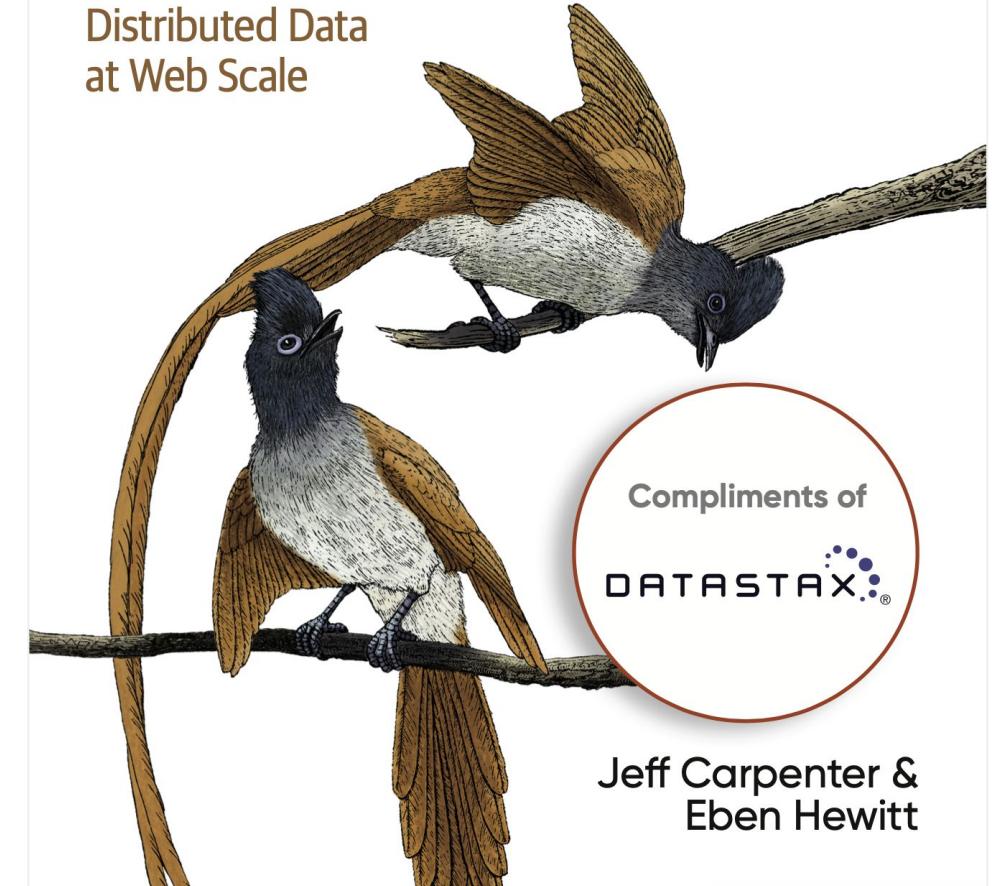
<https://www.datastax.com/resources/ebook/oreilly-cassandra-definitive-guide>

O'REILLY®

Third
Edition

Cassandra The Definitive Guide

Distributed Data
at Web Scale



Jeff Carpenter &
Eben Hewitt

Upcoming events

Date	Time	Content	Type
5/18	12pm IST	Cassandra Developer Workshop	WORKSHOP = HANDS-ON
5/19	12EDT	Accelerate Kubernetes Panel	Questions to Panel
5/20	12pm PT	Astra BetterBoz	WORKSHOP = HANDS-ON
5/26	12BST	Cassandra Developer Workshop	WORKSHOP = HANDS-ON
5/27	12pm EDT	OSS Fallout	WORKSHOP = HANDS-ON
6/3	12pm EDT	NoSQLBench : Benchmark Your Data Models	WORKSHOP = HANDS-ON



@DataStaxDevs #DataStaxDeveloperDay

<https://community.datastax.com>



What's NEXT ?

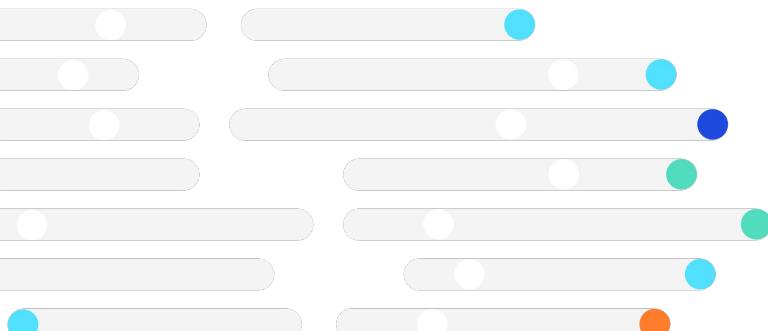
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Thank you

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