A WEB APPLICATION FOR INTERACTIVE DATA ANALYSIS WITH SPARK

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Spark Summit, Jul 1, 2014

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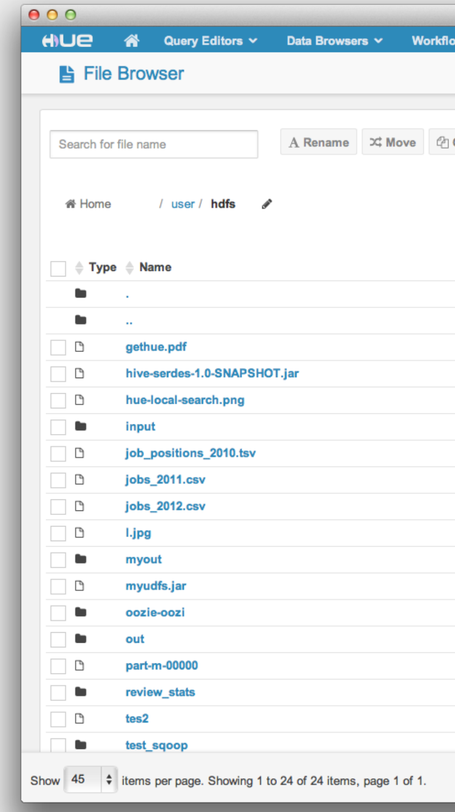
GOAL OF HUE

WEB INTERFACE FOR ANALYZING DATA WITH APACHE HADOOP

SIMPLIFY AND INTEGRATE

FREE AND OPEN SOURCE

—> OPEN UP BIG DATA



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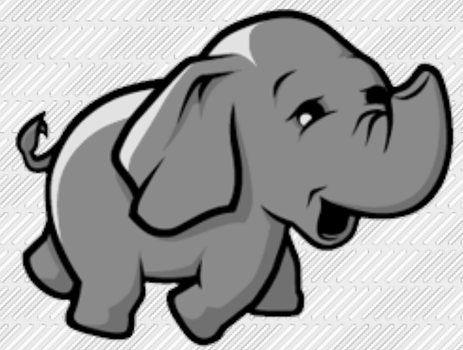
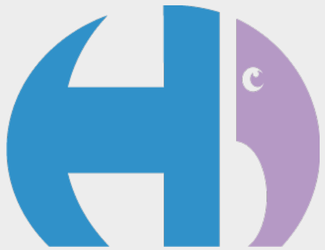
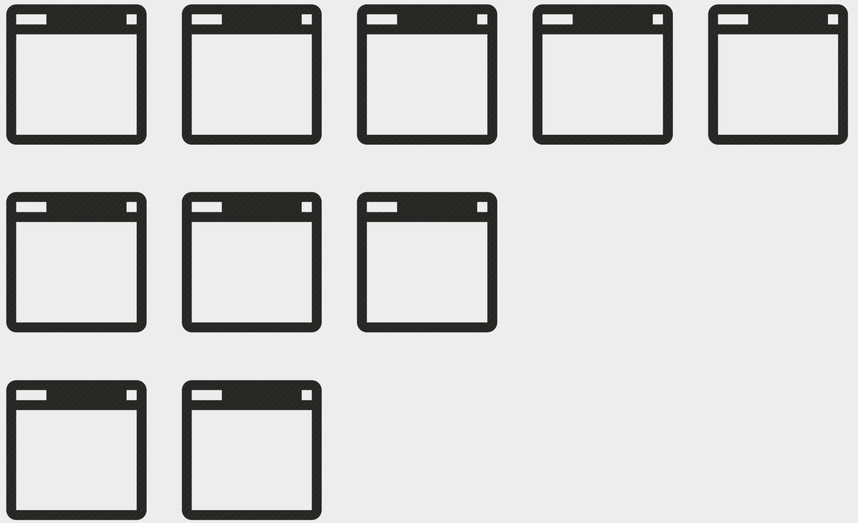
VIEW FROM 30K FEET



Hadoop



Web Server

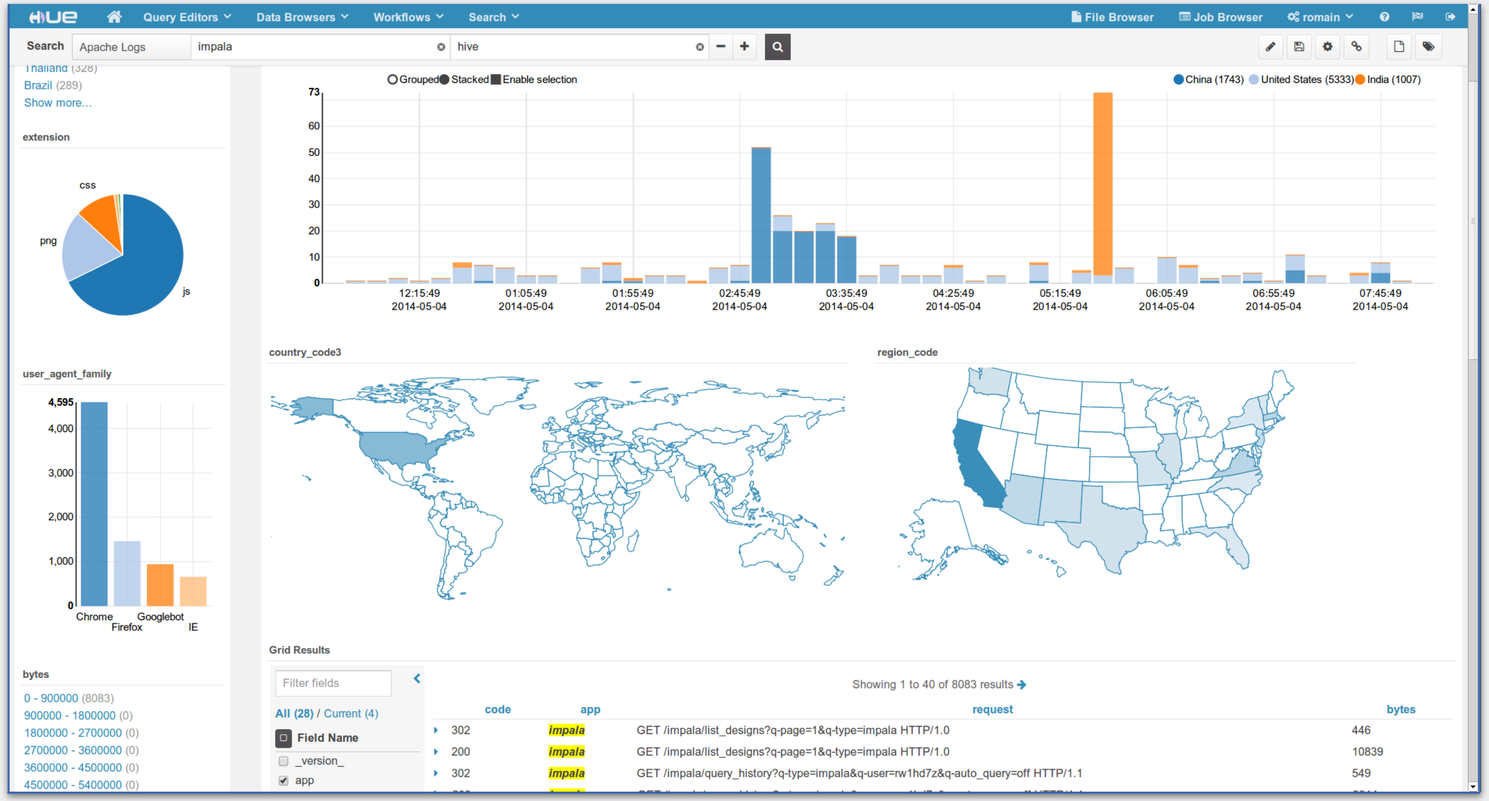


You, your colleagues and even that friend that uses IE9 ;)

LATEST HUE

HUE 3.6+

Where we are now, a brand new way to search and explore your data.



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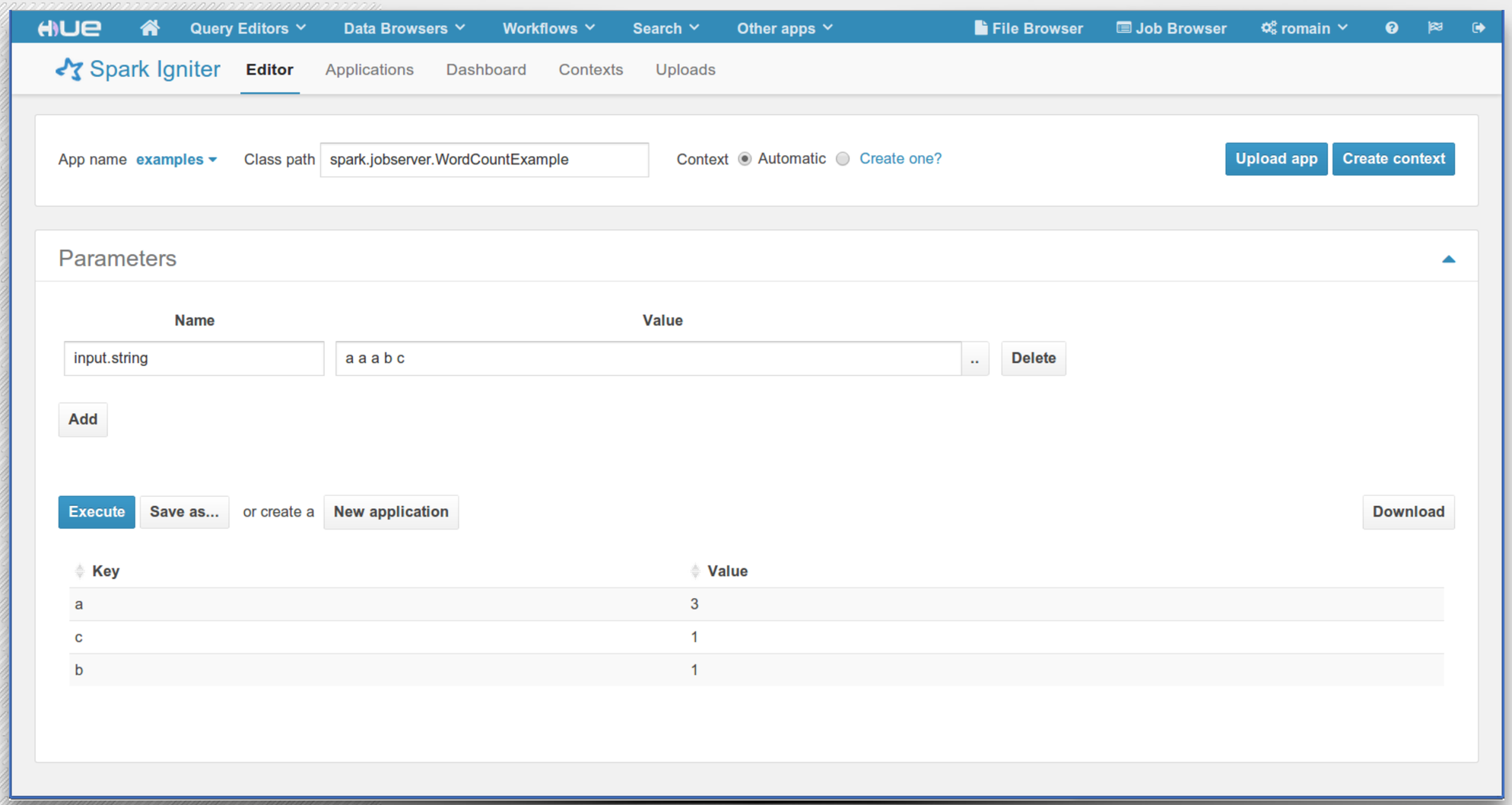
SPARK IGNITER



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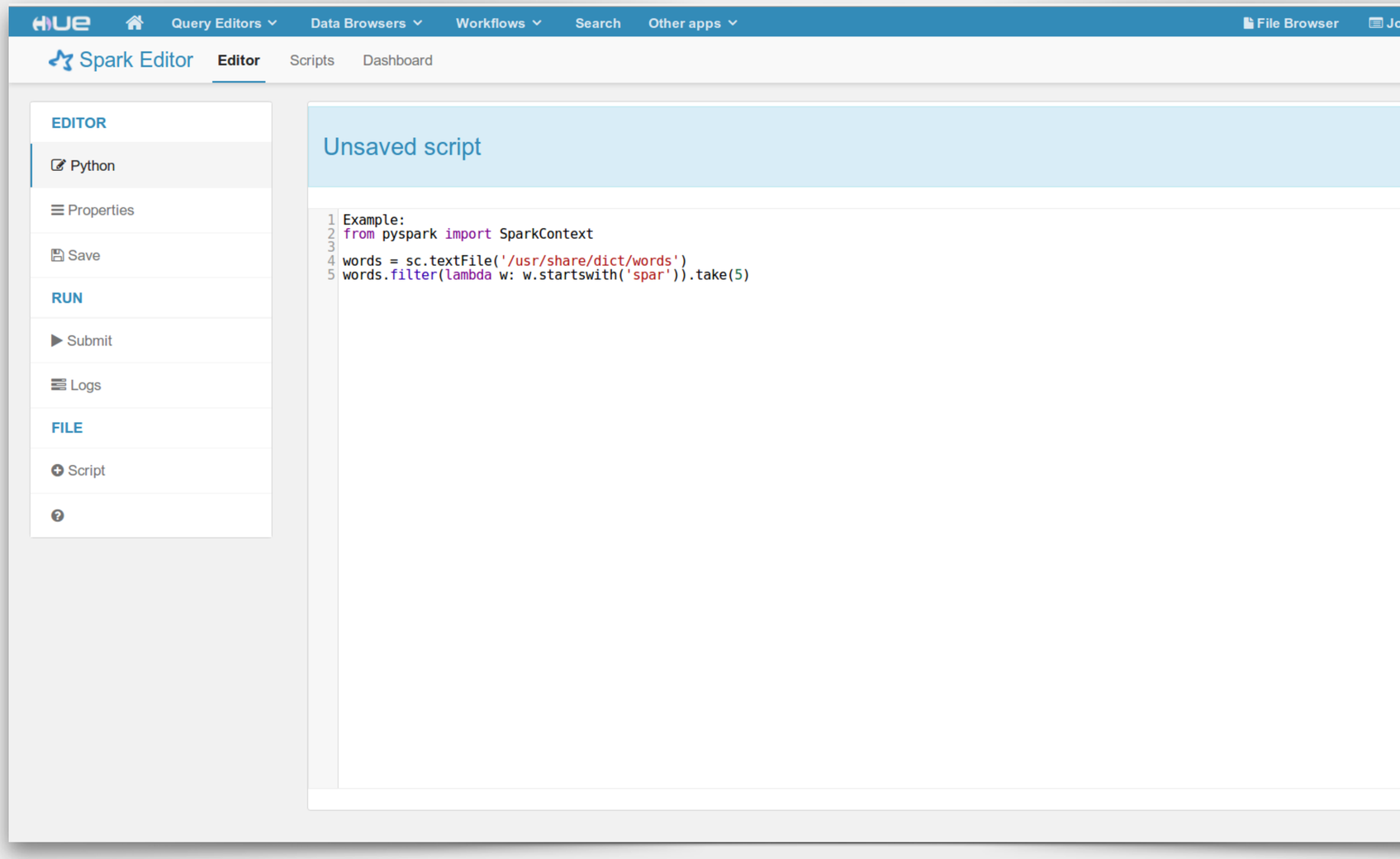
HISTORY

OCT 2013

Submit through Oozie

Shell like for Java, Scala, Python



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HISTORY

JAN 2014

V2 Spark Igniter

Spark 0.8

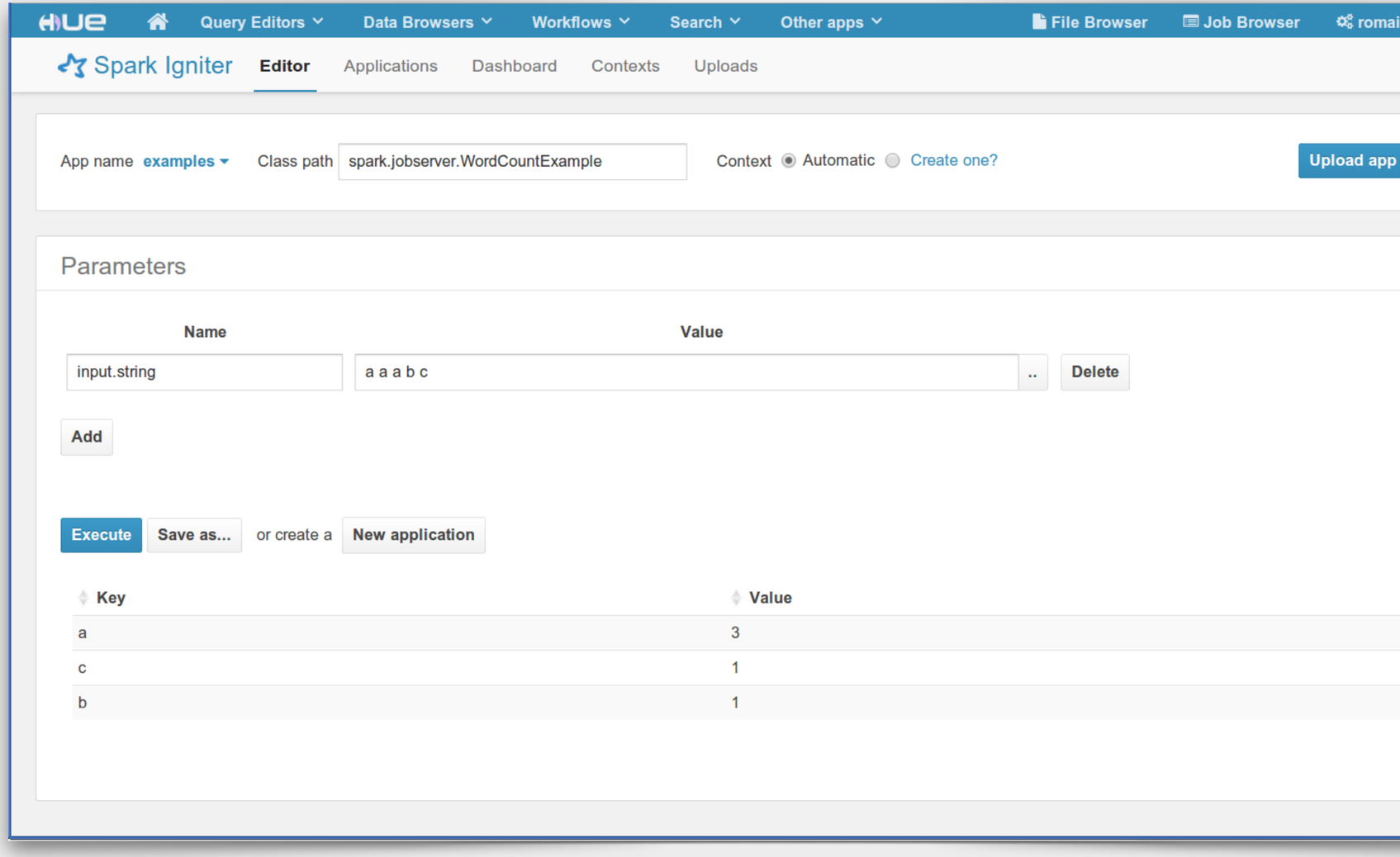
Java, Scala with Spark Job Server

APR 2014

Spark 0.9

JUN 2014

Ironing + How to deploy



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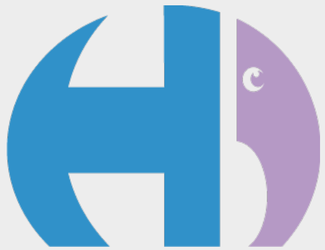
“JUST A VIEW” ON TOP OF SPARK

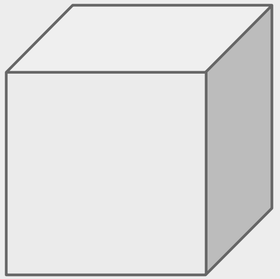
Saved script metadata

eg. name, args, classname, jar name…



Hue

submit
list apps
list jobs
list contexts



Job Server

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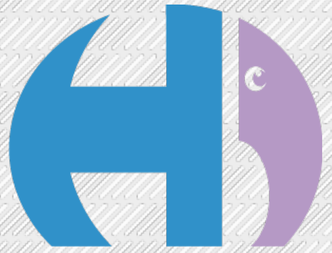
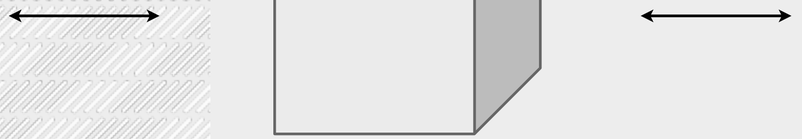
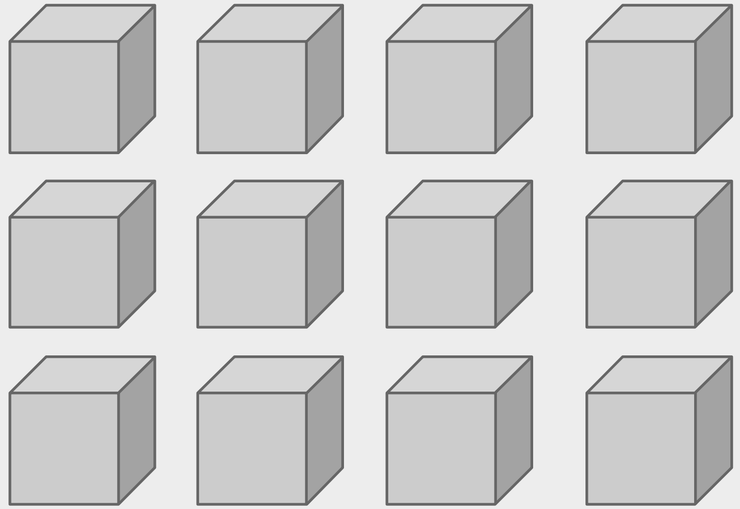
HOW TO TALK TO SPARK?



Hue

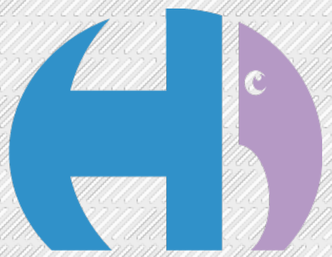


Spark Job Server

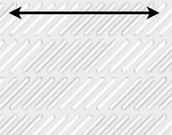


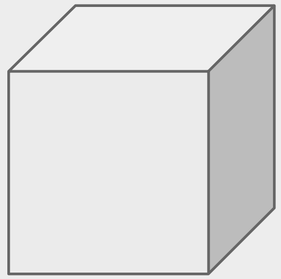
Spark

APP LIFE CYCLE

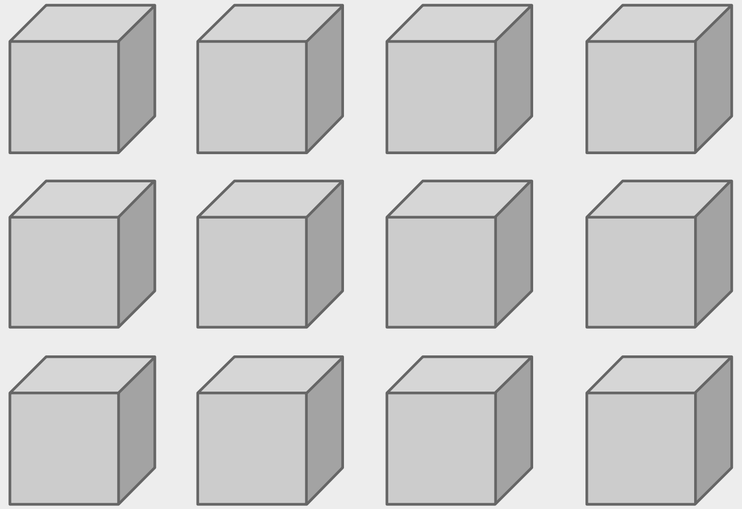


Hue





Spark Job Server



Spark

APP LIFE CYCLE

```scala
package spark.jobserver

import com.typesafe.config.{Config, ConfigFactory}
import org.apache.spark._
import scala.util.Try
import java.util.{Random, Date}

/**
 * A long job for stress tests purpose.
 * Iterative and randomized algorithm to compute Pi.
 * Imagine a square centered at (1,1) of length 2 units.
 * It tightly encloses a circle centered also at (1,1) of radius 1 unit.
 * Randomly throw darts to them.
 * We can use the ratio of darts inside the square and circle to approximate the Pi.
 *
 * stress.test.longpijob.duration controls how long it run in seconds.
 * Longer duration increases precision.
 *
 */
object LongPiJob extends SparkJob {
  private val rand = new Random(now)

  def main(args: Array[String]) {
    val sc = new SparkContext("local[4]", "LongPiJob")
    val config = ConfigFactory.parseString("")
    val results = runJob(sc, config)
    println("Result is " + results)
  }

  override def validate(sc: SparkContext, config: Config): SparkJobValidation = {
    SparkJobValid
  }

  override def runJob(sc: SparkContext, config: Config): Any = {
    val duration = Try(config.getInt("stress.test.longpijob.duration")).getOrElse(5)
    var hit:Long = 0
    var total:Long = 0
```

… extend SparkJob

.scala

sbt _/package

JAR

Upload

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APP LIFE CYCLE

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.scala

sbt _/package

JAR

Upload

Context

create context: auto or manual

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SPARK JOB SERVER

WHERE

https://github.com/ooyala/spark-jobserver

WHAT

REST job server for Spark

WHEN

Spark Summit talk Monday 5:45pm:
Spark Job Server: Easy Spark Job Management by Ooyala

```
curl -d "input.string = a b c a b see" 'localhost:8090/jobs?
appName=test&classPath=spark.jobserver.WordCountExample'
{
  "status": "STARTED",
  "result": {
    "jobId": "5453779a-f004-45fc-a11d-a39dae0f9bf4",
    "context": "b7ea0eb5-spark.jobserver.WordCountExample"
  }
}
```

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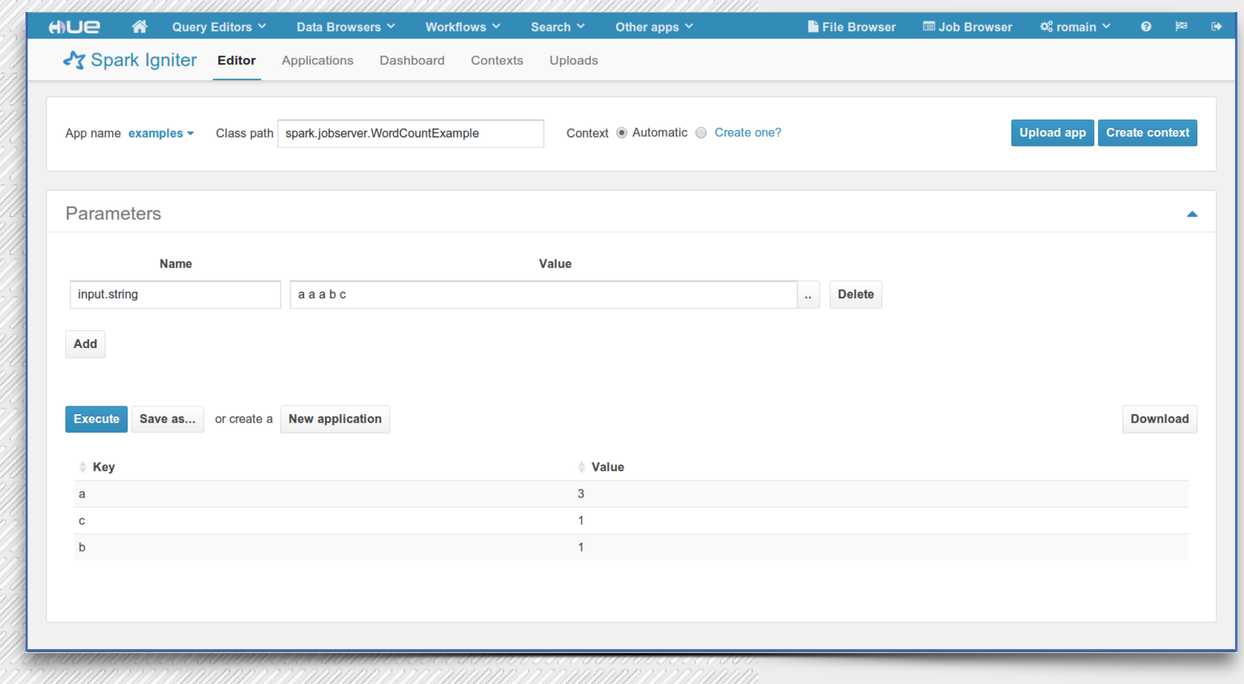
FOCUS ON UX



VS

```
curl -d "input.string = a b c a b see" 'localhost:8090/jobs?
appName=test&classPath=spark.jobserver.WordCountExample'
{
  "status": "STARTED",
  "result": {
    "jobId": "5453779a-f004-45fc-a11d-a39dae0f9bf4",
    "context": "b7ea0eb5-spark.jobserver.WordCountExample"
  }
}
```

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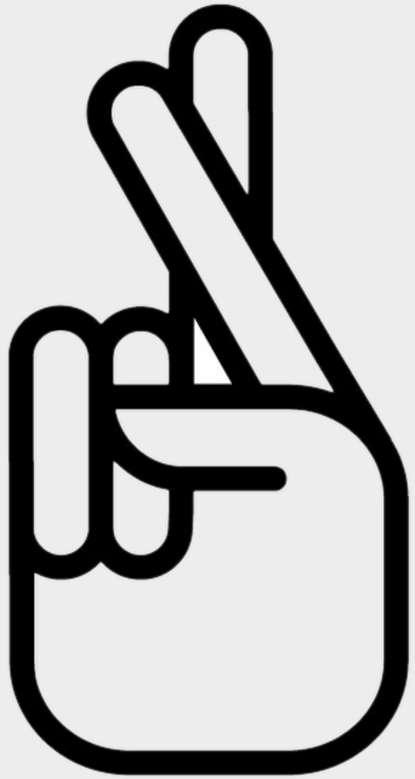
TRAIT SPARKJOB

```
/**
*  This trait is the main API for Spark jobs submitted to the Job Server.
*/
trait SparkJob {
  /**
  * This is the entry point for a Spark Job Server to execute Spark jobs.
  * */
  def runJob(sc: SparkContext, jobConfig: Config): Any

  /**
  * This method is called by the job server to allow jobs to validate their input and reject
  * invalid job requests.  */
  def validate(sc: SparkContext, config: Config): SparkJobValidation
}
```


DEMO TIME



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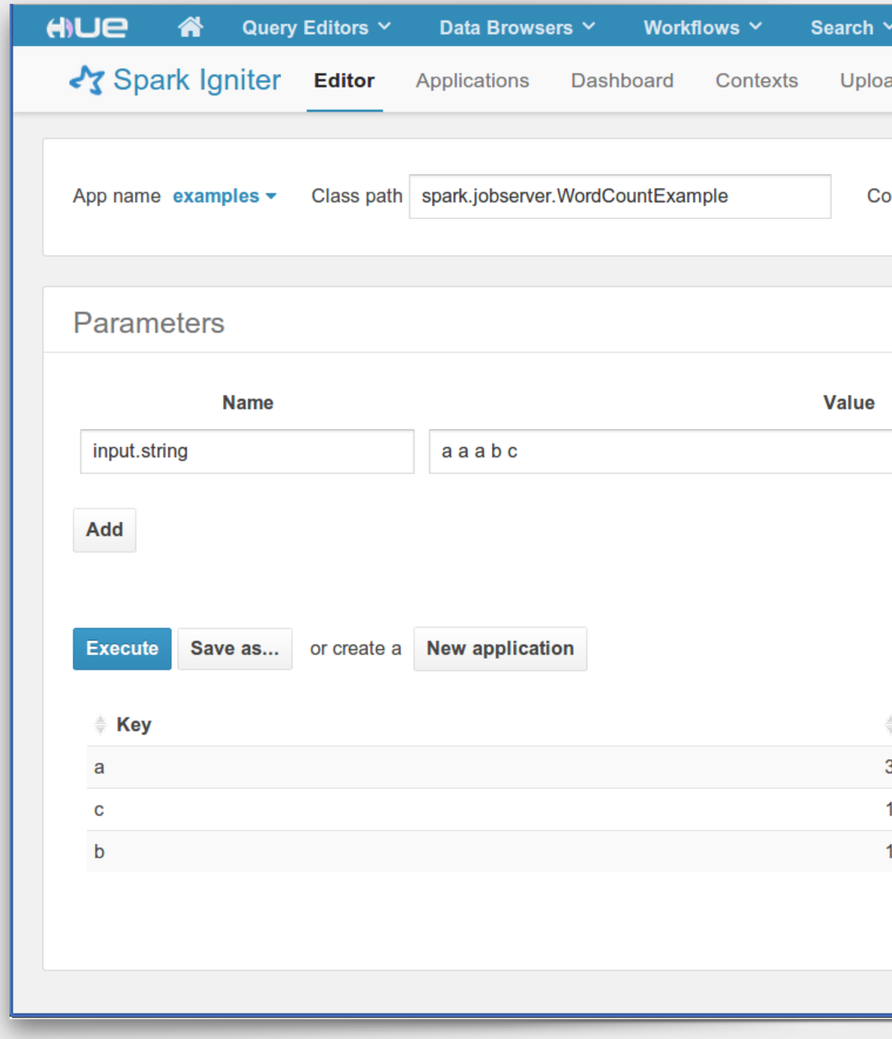
LIVE DEMO

demo.gethue.com/spark



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CURRENT TECH
SUM-UP

STANDALONE APP

SCALA 2.10

SPARK 0.9

HUE C5+

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ROADMAP

WHAT

- **YARN**
- HUE-2134 [spark] App revamp and Job Server needs
  - Impersonation
  - Status report
  - Fetch N from result set
  - Python?
- Full Hue integration with HDFS, JobBrowser, Hive, charts…
- On the fly compile of Scala, Java?
- ?

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THANK YOU!

WEBSITE

http://gethue.com

LEARN

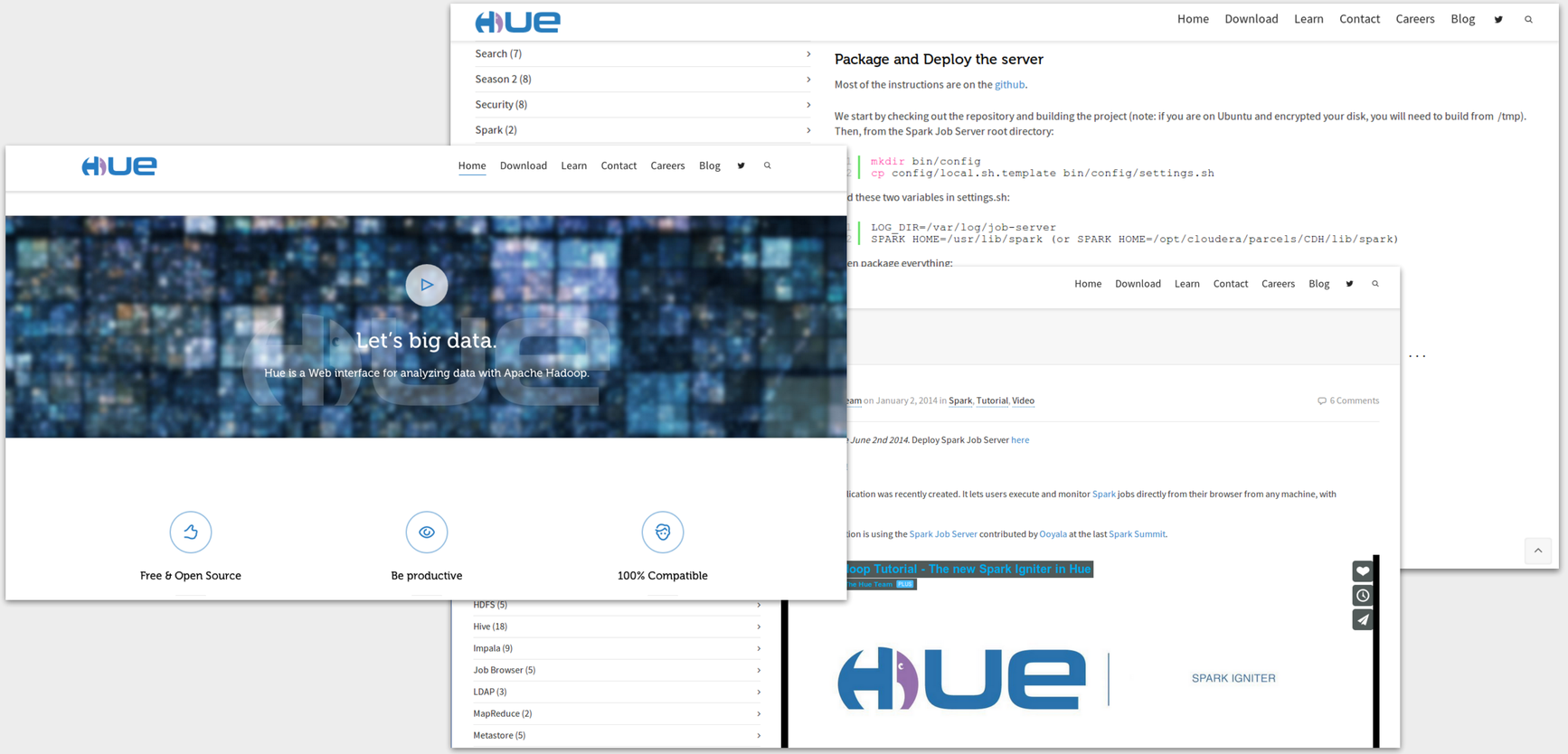
http://gethue.com/category/spark/

TWITTER

@gethue

USER GROUP

hue-user@



http://gethue.com/get-started-with-spark-deploy-spark-server-and-compute-pi-from-your-web-browser/

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