CHULALONGKORN
BUSINESS SCHOOL
FLAGSHIP FOR LIFE

Apache Pig

Thaveewat Khanan

2603615 Organization Data Management

Introduction

CHULALONGKORN BUSINESS SCHOOL
FLAGSHIP FOR LIFE

A high-level platform for creating MapReduce programs Using Hadoop

Pig is a platform for analyzing large data sets that consists of a high-level language for expressing data analysis programs, coupled with infrastructure for evaluating these programs. The salient property of Pig programs is that their structure is amenable to substantial parallelization, which in turns enables them to handle very large data sets.

Pig Components

CHULALONGKORN BUSINESS SCHOOL
FLAGSHIP FOR LIFE

Two Compnents

- Language (Pig Latin)
- Compiler

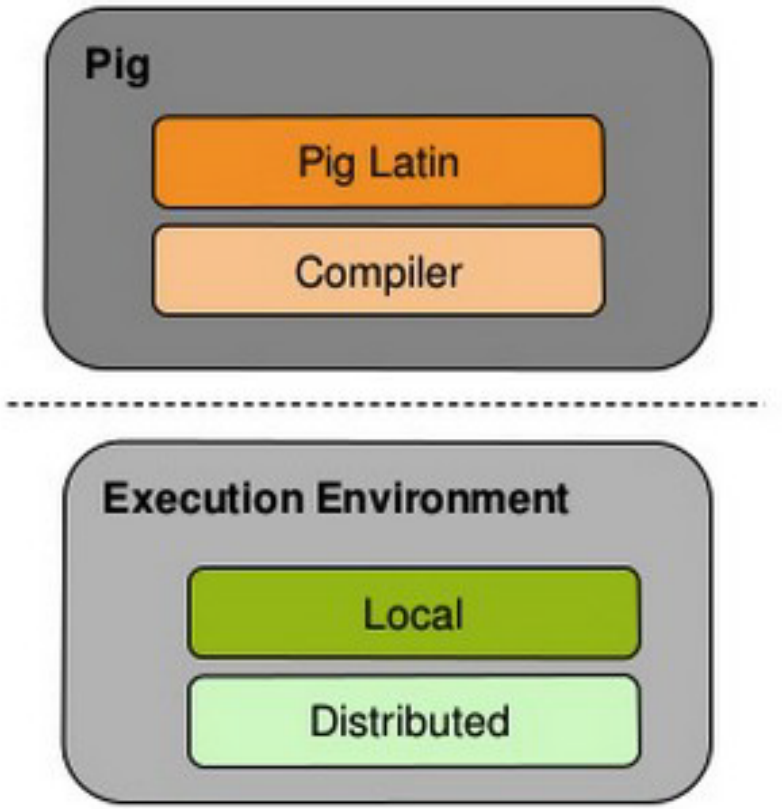
Two Execution Environments

Local

- pig -x local

Distributed

- pig -x mapreduce



Running Pig

CHULALONGKORN BUSINESS SCHOOL
FLAGSHIP FOR LIFE

Script

- pig myscript

Command line (Grunt)

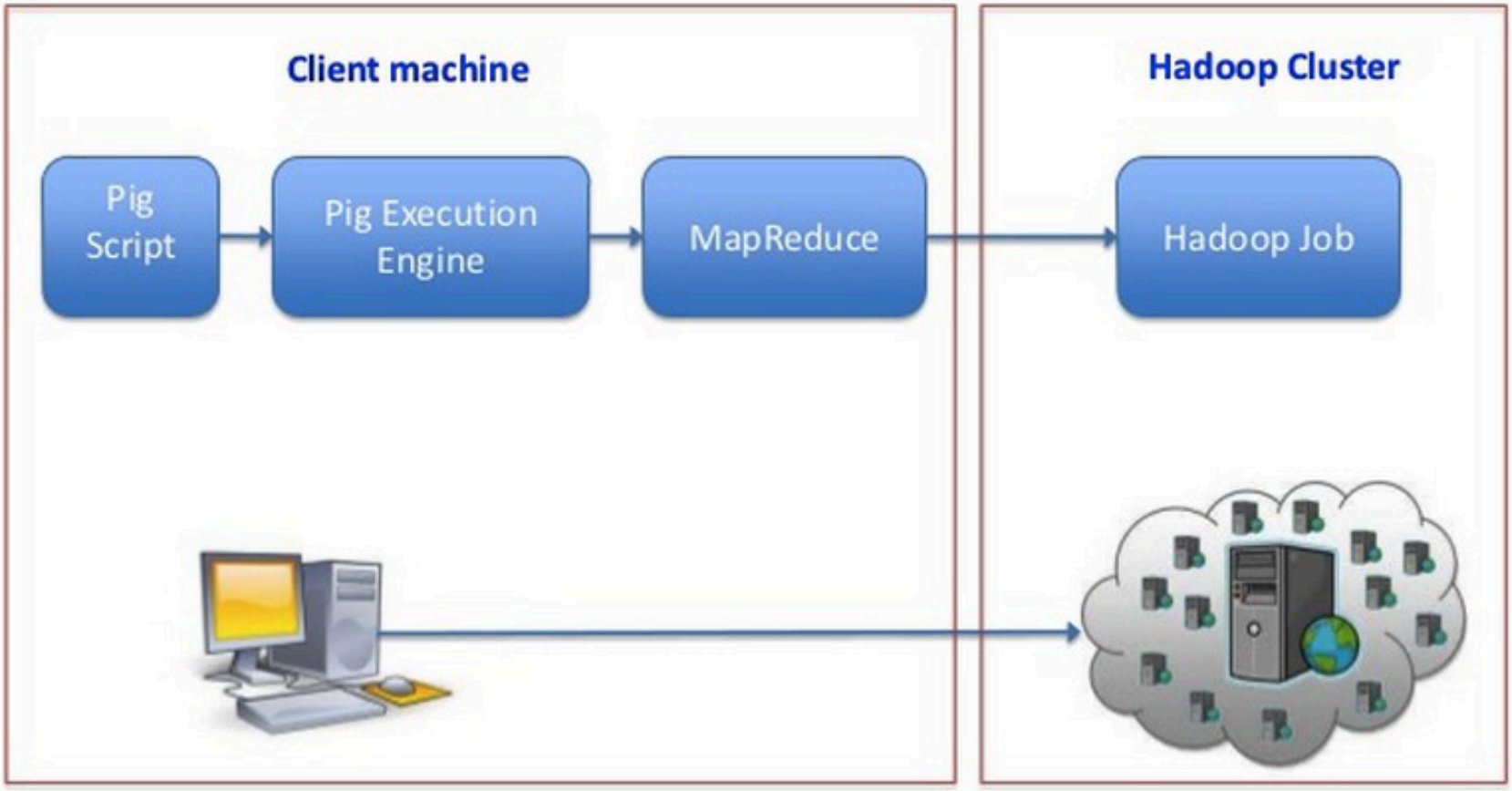
- pig

Embedded

- Writing a java program

```
Users = load'users'as (name, age);
Fltrd = filter Users by
        age >= 18 and age <= 25;
Pages = load 'pages' as (user, url);
Jnd = joinFltrdby name, Pages by user;
Grpd = groupJndbyurl;
Smmd = foreachGrpdgenerate group,
COUNT(Jnd) as clicks;
Srtd = orderSmmdby clicks desc;
Top5 = limitSrtd 5;
store Top5 into'top5sites';
```

Pig Execution Stages



Source Introduction to Apache Hadoop-Pig: PrashantKommireddi

Why Pig?

CHULALONGKORN BUSINESS SCHOOL
FLAGSHIP FOR LIFE

Makes writing Hadoop jobs easier

5% of the code, 5% of the time

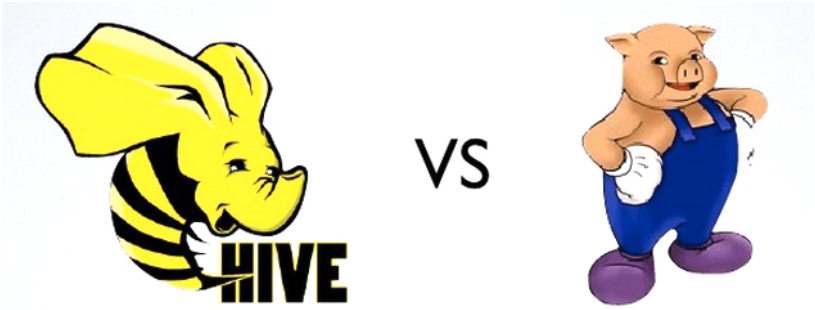
You don't need to be a programmer to write Pig scripts

Provide major functionality required for DatawareHouse and Analytics

Load, Filter, Join, Group By, Order, Transform

User can write custom UDFs (User Defined Function)

Pig v.s. Hive



CHULALONGKORN BUSINESS SCHOOL
FLAGSHIP FOR LIFE

Characteristic	Pig	Hive
Developed by	Yahoo!	Facebook
Language name	Pig Latin	HiveQL
Type of language	Data flow	Declarative (SQL dialect)
Data structures it operates on	Complex, nested	
Schema optional?	Yes	No, but data can have many schemas
Relational complete?	Yes	Yes
Turing complete?	Yes when extended with Java UDFs	Yes when extended with Java UDFs

Running a Pig script

CHULALONGKORN BUSINESS SCHOOL
FLAGSHIP FOR LIFE

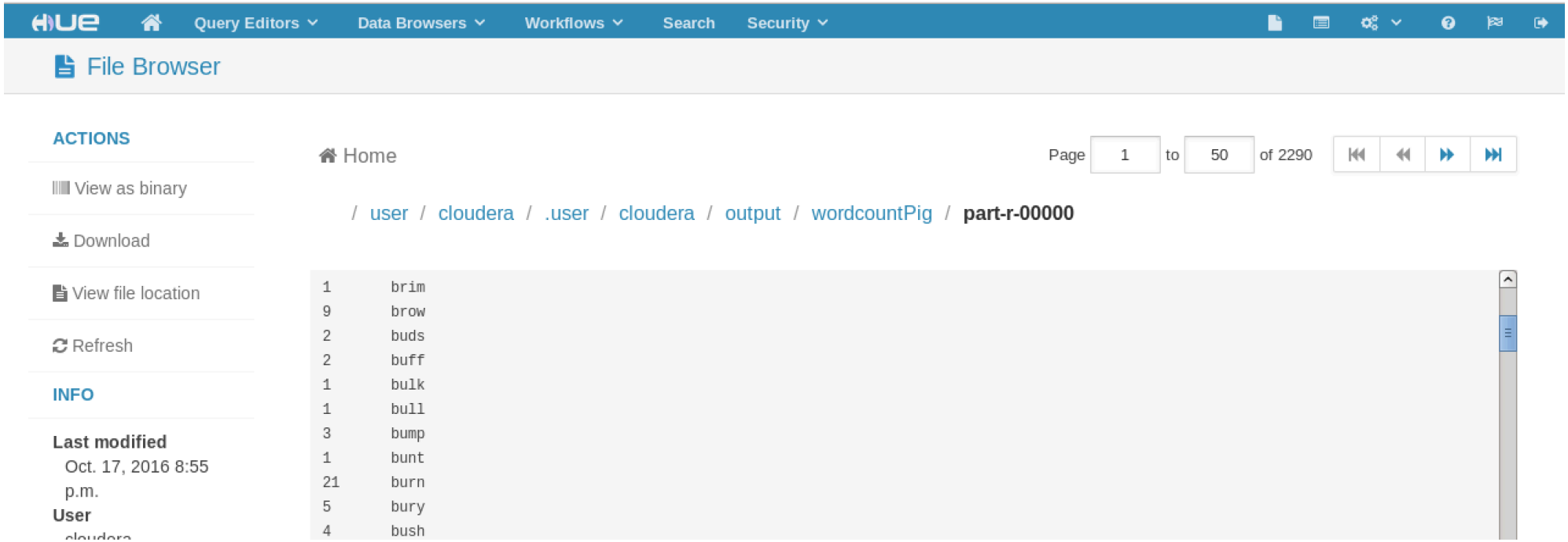
$ pig -x mapreduce

Writing a Pig Script for wordcount

```
A = load '/user/cloudera/input/*';
B = foreach A generate flatten(TOKENIZE((chararray)$0)) as word;
C = group B by word;
D = foreach C generate COUNT(B), group;
store D into '.user/cloudera/output/wordcountPig';
```

```
Job DAG:
job_1476756857620_0001


2016-10-17 20:55:22,977 [main] INFO  org.apache.pig.backend.hadoop.executionengi
ne.mapReduceLayer.MapReduceLauncher - Success!
```


HUE
Query Editors
Data Browsers
Workflows
Search
Security
File Browser
ACTIONS
View as binary
Download
View file location
Refresh
INFO
Last modified
Oct. 17, 2016 8:55 p.m.
User
cloudera
Home
Page 1 to 50 of 2290
/ user / cloudera / .user / cloudera / output / wordcountPig / part-r-00000
1 brim
9 brow
2 buds
2 buff
1 bulk
1 bull
3 bump
1 bunt
21 burn
5 bury
4 bush