**Spark and Caffe on TK1 boards**

Yarn and spark are installed on each node. Spark ask for resources to yarn manager in order to launch its jobs. This document only shows some useful commands, but it doesn’t replace the official documentation. Don't hesitate if you have any questions.

* How to check Spark and Yarn are running:

on nodes and server enter the command :

**jps**

It should return oneach nodes:

**XXXX Jps**

**XXXX NodeManager →**this is for yarn

**XXXX DataNode →**this is for hadoop

and on the server:

**XXXX ResourceManager →** this is for yarn

**XXXX NameNode →**this is for hadoop

**XXXX Jps**

If some service arenot running, start them with:

**cd $HADOOP\_HOME**

**sbin/hadoop-daemon.sh start namenode**

**sbin/yarn-daemon.sh start resourcemanager**

for the server and :

**cd $HADOOP\_HOME**

**sbin/hadoop-daemon.sh start datanode**

**sbin/yarn-daemon.sh start nodemanager**

for the nodes

* How to launch a spark job

In order to launch spark application you can use the command spark-submit which will execute on the cluster pre-written application (see official spark documentation to write an application). For example:

**cd~/spark\_install/spark-2.1.1-bin-hadoop2.7/**

**./bin/spark-submit \**

**--class org.apache.spark.examples.SparkPi \**

**--master yarn \** → specify spark to useyarn

**--deploy-mode cluster \**

**--driver-memory 512m \** → memory allowed tothe spark driver

**--executor-memory 512m \** → memory allowedfor each executor

**--executor-cores 4 \** → number of v-coresfor each executor

**--num-executors 2 \** → number of executors

**--queue default \** → name of the yarnapplication queue

**examples/jars/spark-examples\_2.11-2.1.1.jar 10** → application file and its argument

* How to launch an example using caffe deap neural network:

**cd caffe-master**

**./build/examples/cpp\_classification/classification.bin models/bvlc\_reference\_caffenet/deploy.prototxt models/bvlc\_reference\_caffenet/bvlc\_reference\_caffenet.caffemodel data/ilsvrc12/imagenet\_mean.binaryproto data/ilsvrc12/synset\_words.txt examples/images/cat.jpg**

* Useful commands for debugging

See connected nodes:

**cd $HADOOP\_HOME**

**bin/hdfs dfsadmin -report**

See running yarn applications:

**cd $HADOOP\_HOME**

**bin/yarn application -list**

Use website interfaces:

To show jobs:

<http://202.120.38.28:8088/>

To use HDFS:

[http://202.120.38.28:50070](http://202.120.38.28:50070/)

1）修改edge为synapse DONE

2）baseline solution 画图 DONE

3）实验图的memory reduce改成memory requirement

4)