

# Spark Clusters Install

## ● Install Scala ( Master )

```
# 安裝 Scala
cd /tmp; wget https://downloads.lightbend.com/scala/2.11.8/scala-2.11.8.tgz
tar zxvf /tmp/scala-2.11.8.tgz
mv /tmp/scala-2.11.8 /opt

# 建立軟連結
ln -s /opt/scala-2.11.8 /opt/scala

# 變更環境變數
vi /etc/profile
export SCALA_HOME=/opt/scala
export PATH=$SCALA_HOME/bin:$PATH

# 重啟
source /etc/profile

# 查看 Scala 版本，確認是否安裝成功
scala -version

# 複製檔案至 Slaver1, Slaver2
scp -rp /opt/scala-2.11.8/ root@slaver1:/opt/scala-2.11.8
scp -rp /opt/scala-2.11.8/ root@slaver2:/opt/scala-2.11.8
scp -rp /etc/profile root@slaver1:/etc/profile
scp -rp /etc/profile root@slaver2:/etc/profile

# 建立軟連結 ( 在 Slaver1, Slaver2 做 )
ln -s /opt/scala-2.11.8 /opt/scala
```

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## ● Install spark-2.3.1-bin-hadoop2.7 ( Master )

```
# 安裝 spark-2.3.1-bin-hadoop2.7
cd /tmp; wget https://archive.apache.org/dist/spark/spark-
2.3.1/spark-2.3.1-bin-hadoop2.7.tgz
tar zxvf /tmp/spark-2.3.1-bin-hadoop2.7.tgz
mv /tmp/spark-2.3.1-bin-hadoop2.7 /opt

# 變更環境變數
vi /etc/profile
export SPARK_HOME=/opt/spark-2.3.1-bin-hadoop2.7
export PATH=$SPARK_HOME/bin:$PATH
export PYSARK_PYTHON=python3
export PYSARK_DRIVER_PYTHON=ipython3

# 重啟
source /etc/profile

# 建立 Slaver 資訊
/opt/spark-2.3.1-bin-hadoop2.7/conf/slaves
加入
master
slaver1
slaver2

# 複製檔案至 Slaver1, Slaver2
scp -rp /opt/spark-2.3.1-bin-hadoop2.7/ root@slaver1:/opt/spark-
2.3.1-bin-hadoop2.7
scp -rp /opt/spark-2.3.1-bin-hadoop2.7/ root@slaver2:/opt/spark-
2.3.1-bin-hadoop2.7
scp -rp /etc/profile root@slaver1:/etc/profile
scp -rp /etc/profile root@slaver2:/etc/profile

# 查看 Spark 版本，確認是否安裝成功
which spark-submit
```

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## ● Other settings ( Every server )

# 建立軟連結 ( !!!在每台電腦做!!! )

```
ln -s /usr/bin/python3 /usr/bin/python
ln -s /usr/bin/pip3 /usr/bin/pip
```

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## ● Start Spark Clusters

# Start the spark cluster

```
cd /opt/spark-2.3.1-bin-hadoop2.7/sbin
./start-all.sh
```

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## ● Reboot

# 啟動 Zookeeper, Journalnode ( !!!在每台電腦做!!! )

```
/opt/zookeeper/bin/zkServer.sh start
hadoop-daemon.sh start journalnode
```

# 啟動 HDFS ( 在 Master 做 )

```
start-all.sh
```

# 啟動 Spark

```
cd /opt/spark-2.3.1-bin-hadoop2.7/sbin
./start-all.sh
```

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## ● Success

Activities Firefox Web Browser Fri 20:31 Spark Master at spark://master:7077 - Mozilla Firefox

172.17.0.2:8080

Spark Master at spark://master:7077

URL: spark://master:7077  
REST URL: spark://master:6066 (cluster mode)  
Alive Workers: 3  
Cores in use: 12 Total, 0 Used  
Memory in use: 91.2 GB Total, 0.0 B Used  
Applications: 0 Running, 0 Completed  
Drivers: 0 Running, 0 Completed  
Status: ALIVE

Workers (3)

Worker id	Address	State	Cores	Memory
worker-20190531201554-172.17.0.4-42141	172.17.0.4:42141	ALIVE	4 (0 Used)	30.4 GB (0.0 B Used)
worker-20190531201556-172.17.0.3-34201	172.17.0.3:34201	ALIVE	4 (0 Used)	30.4 GB (0.0 B Used)
worker-20190531201602-172.17.0.2-34775	172.17.0.2:34775	ALIVE	4 (0 Used)	30.4 GB (0.0 B Used)

Running Applications (0)

Application ID	Name	Cores	Memory per Executor	Submitted Time	User	State	Duration
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Completed Applications (0)

Application ID	Name	Cores	Memory per Executor	Submitted Time	User	State	Duration
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