SETUP Spark Cluster

# 1. Installing environments

## 1.1 Installing Java 11

Spark uses JDK 11, installs Java 11 packages and sets environment variables

Open the "edit environment variable" tool

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## 1.2 Installing Python

Download python from <https://www.python.org/downloads/> website and install them. Then open "edit environment variable" tool and declare environment variable

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# 2. Installing Spark

## 2.1 Download Spark

Download spark at the following address <https://www.apache.org/dyn/closer.lua/spark/spark-3.5.3/spark-3.5.3-bin-hadoop3.tgz>

After downloading, we unzip the folder

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## 2.2 Setup Spark

Next we need to open the "edit environment variable " tool and declare environment variables for spark



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# 3. Testing spark

Use the command cd %SPARK\_HOME% to move to the Spark directory and type the command "Spark-Shell"

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A screenshot of a computer

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# 4. Spark Cluster

## 4.1 Connecting to a common network (master and workers)

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Master's ip address

A screen shot of a computer

Description automatically generated

Slave's ip address

A screen shot of a black screen

Description automatically generated

## 4.2 Renaming the hosts

Rename the host file of the master and slave machines for easy management (perform on master and workers)

Run command prompt as admin

A screenshot of a computer command prompt

Description automatically generated

To easily manage slave machine addresses by name instead of numbers. Type the command “notepad C:\Windows\System32\drivers\etc\hosts” to name each ip

A screenshot of a computer program

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A screenshot of a computer screen

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A screenshot of a computer

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This will help us manage the machine easily when pinging or checking. Instead of pinging the machine address directly, we only need to ping the machine name.

## 4.3 Turning off the firewall

Turn off the firewall of the master and slave machines (master and workers)

Open “Control Panel”

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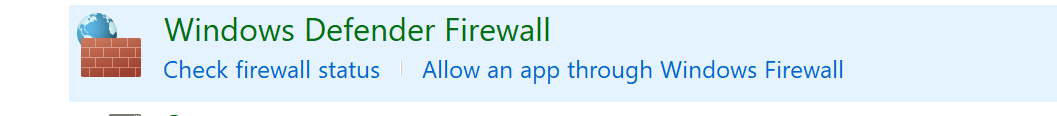
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Click “System and Security”

A close-up of a computer security message

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Click “Windows Defender Firewall”



Click “Turn Windows Defender Firewall on or off”

A screenshot of a computer

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Turn off and click ok

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## 4.4 Check connection

Use the ngocphung-master machine to ping the ngocphung-slave machine

A screenshot of a computer program

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Use the ngocphung-slave machine to ping the ngocphung-master machine

A computer screen shot of a program

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## 4.5 Deploy on the master machine (execute on the master machine)

Navigate to Spark\_Home using the following command “cd %SPARK\_HOME%\bin”

Start the master machine using the following command “spark-class2.cmd org.apache.spark.deploy.master.Master”

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A screenshot of a computer

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## 4.6 Deploy on the slave machine (execute on the slave machine)

Navigate to Spark\_Home using the following command “cd %SPARK\_HOME%\bin”

Start the master machine using the following command “spark-class2.cmd org.apache.spark.deploy.worker.Worker spark://192.168.1.129:7077”

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## 4.7 Checking on master