

How to run LANS:

1. Download the following version of Spark from "<http://spark.apache.org/downloads.html>".

Download Apache Spark™

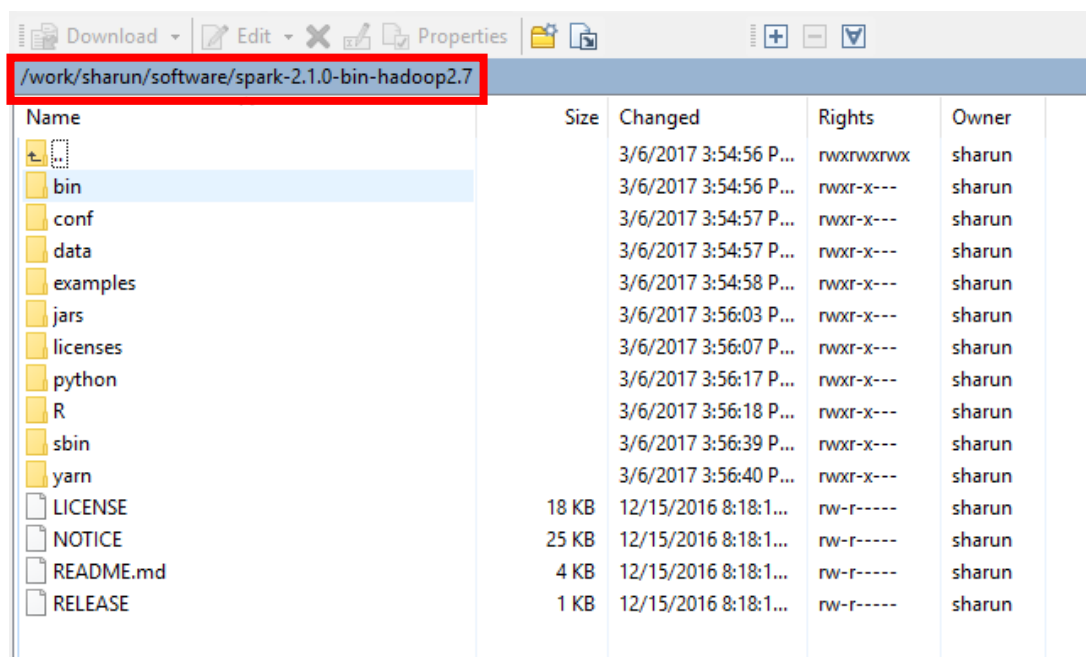
1. Choose a Spark release: 2.1.0 (Dec 28 2016) ▼

2. Choose a package type: Pre-built for Hadoop 2.7 and later ▼

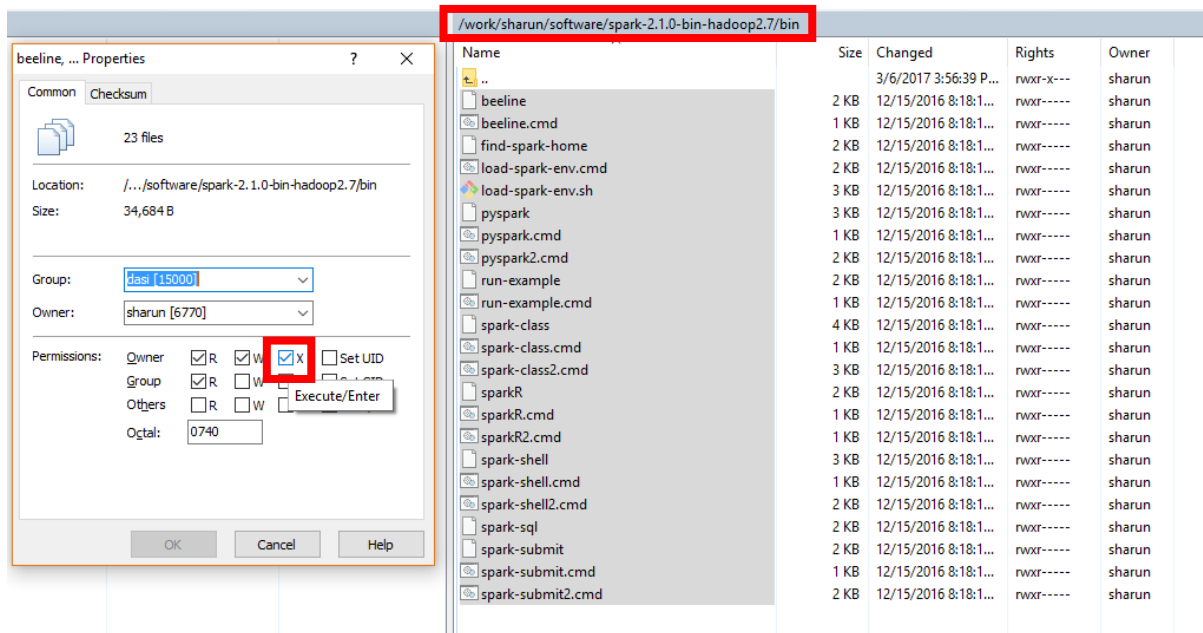
3. Choose a download type: Direct Download ▼

4. Download Spark: [spark-2.1.0-bin-hadoop2.7.tgz](#)

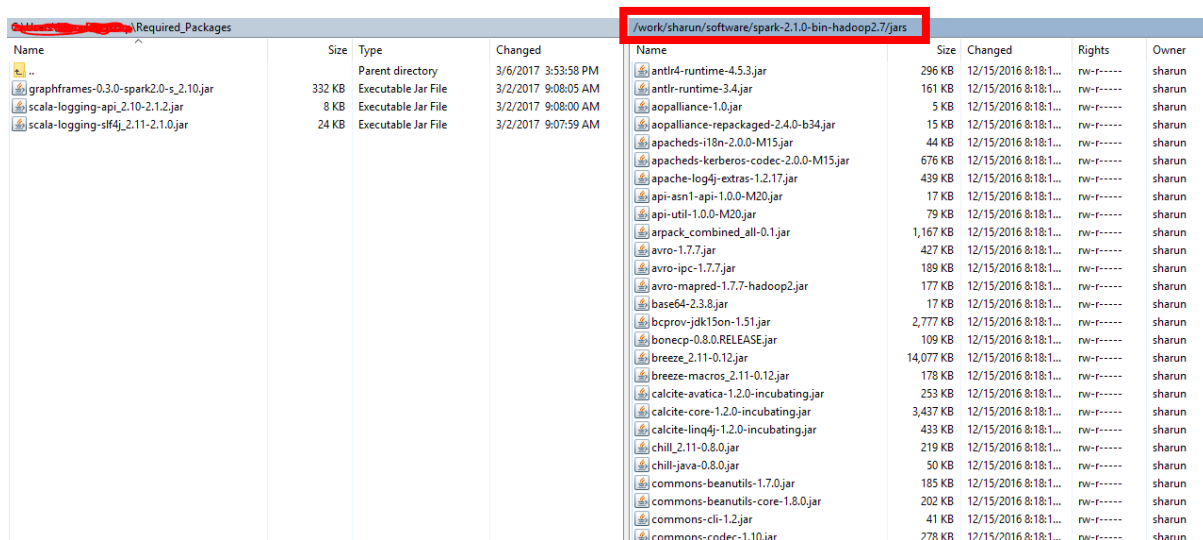
2. Unzip and copy it in a folder in working directory at Shadow.



3. Modify the properties of the files at `bin` folder and make them executable (by default they are not executable).



- Copy all the jar files from “Graph-Simulation-X-master/Required_Packages” and paste it to “/spark-2.1.0-bin-hadoop2.7/jars” folder.



- Configure SPARK_HOME, python, openmpi and R at “.bashrc” file in “/home/\$User” folder using the following commands:

```
swsetup openmpi-1.10
```

```
swsetup python
```

```
swsetup r-3.2.1
```

```
export SPARK_HOME=/work/$User /...../spark-2.1.0-bin-hadoop2.7 (provide full path)
```

/home/sharun		
Name	Size	Changed
..		3/3/2017 8:36:00
.cache		2/23/2017 1:04:00
.config		4/18/2016 6:18:00
.elinks		9/19/2016 12:03
.emacs.d		9/20/2016 11:39
.felix		12/2/2016 9:54:00
.matlab		11/11/2016 12:5
.mozilla		9/19/2016 12:03
.ssh		4/18/2016 5:58:00
.activity_log	1 KB	3/6/2017 4:54:00
.bash_history	0 KB	3/6/2017 5:01:20
.bash_profile	1 KB	1/21/2016 8:06:00
.bashrc	2 KB	3/6/2017 5:01:50
.python_history	1 KB	8/24/2016 8:01:00
.Xauthority	2 KB	1/26/2017 1:07:00

6. Create a working directory to execute all the codes. For example, we have created “**LANS**” as our working directory and copy all the files except “**Required_Packages**” from “**Graph-Simulation-X-master**” to “**LANS**”.

C:\Users\Muna\Desktop\Graph-Simulation-3-master				/work/sharun/LANS			
Name	Size	Type	Changed	Name	Size	Changed	Rights
..		Parent directory	3/8/2017	..		3/8/2017 12:35:16	rw-r--r--
Required_Packages		File folder	3/8/2017	CombineCSV.R	1 KB	3/8/2017 1:04:32 P...	rw-r--r--
CombineCSV.R	1 KB	R File	3/8/2017	create_2D_hist_edge_attributes.py	5 KB	3/8/2017 12:30:23	rw-r--r--
create_2D_hist_edge_attributes.py	5 KB	JetBrains PyCharm Co...	3/8/2017	CTU13_5.csv	15,040 KB	3/8/2017 12:30:23	rw-r--r--
CTU13_5.csv	15,040 KB	Microsoft Excel Comm...	3/8/2017	CTU13_5_Sample.csv	1,946 KB	3/8/2017 12:30:24	rw-r--r--
CTU13_5_Sample.csv	1,946 KB	Microsoft Excel Comm...	3/8/2017	parallel_parameter_estimation.py	7 KB	3/8/2017 12:30:24	rw-r--r--
How_To_Run_Project.pdf	302 KB	Font Reader PDF Docu...	3/8/2017	role_minning.py	2 KB	3/8/2017 12:30:24	rw-r--r--
interactive.pbs	1 KB	PBS File	3/8/2017	runProject.pbs	1 KB	3/8/2017 1:17:52 P...	rw-r--r--
parallel_parameter_estimation.py	7 KB	JetBrains PyCharm Co...	3/8/2017	simulation_code.py	10 KB	3/8/2017 12:30:24	rw-r--r--
README.md	1 KB	MD File	3/8/2017	Spark.jar	60 KB	3/8/2017 12:30:23	rw-r--r--
role_minning.py	2 KB	JetBrains PyCharm Co...	3/8/2017	Spark_local.sh	1 KB	3/8/2017 1:06:23 P...	rw-r--r--
simulation_code.py	10 KB	JetBrains PyCharm Co...	3/8/2017				
Spark.jar	60 KB	Executable Jar File	3/8/2017				
Spark_local.pbs	1 KB	PBS File	3/8/2017				
Spark_local.sh	1 KB	Shell Script	3/8/2017				

7. Keep all the input files inside of the “**input_files**” folder.
8. Now, using putty, log in to Shadow and change directory to “**LANS**”.
9. Submit job “**runProject.pbs**” to shadow.
10. When the job ends it will provide the simulated graph in “**SimulatedGraph**” folder.