# DEV-CDM Insight Services Installation

June-29-17 10:23 AM

## Zeppelin on Master spark01 (binary download)

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| [administrator@dev-cdm-spark01 ~]$ **cd $HOME**<br>[administrator@dev-cdm-spark01 ~]$ **pwd**<br>/home/administrator | Set HOME |
| [administrator@dev-cdm-spark01 ~]$ **wget http://mirror.dsrg.utoronto.ca/apache/zeppelin/zeppelin-0.7.2/zeppelin-0.7.2-bin-all.tgz**<br>Saving to: 'scala-2.10.6.rpm'<br>100%[==========>] 26,067,733 3.02MB/s in 7.3s<br>2017-06-27 12:23:05 (3.40 MB/s) - 'scala-2.10.6.rpm' saved [26067733/26067733] | Get the 2-10-6 |
| [administrator@dev-cdm-spark01 ~]$ **sudo mkdir /usr/local/zeppelin**<br>[administrator@dev-cdm-spark01 ~]$ **ls -al /usr/local/ \| grep zeppelin**<br>drwxr-xr-x 2 root root 4096 Jun 29 11:41 zeppelin | Target folder |
| [administrator@dev-cdm-spark01 ~]$ **sudo tar xzf zeppelin-0.7.2-bin-all.tgz -C /usr/local/zeppelin --strip-components 1** | Unpack without leading folder |
| [administrator@dev-cdm-spark01 spark]$ **sudo useradd hadoop** | Create hadoop user if needed |
| [administrator@dev-cdm-spark01 spark]$ **cd /usr/local/zeppelin**<br>[administrator@dev-cdm-spark01 spark]$ **sudo chown hadoop.hadoop . -R** | Chown root.root ownership |
| [administrator@dev-cdm-spark01 ~]$ **ll /usr/local/zeppelin/**<br>total 28044<br>drwxr-xr-x 2 hadoop hadoop 4096 Jun 29 11:42 bin<br>drwxr-xr-x 2 hadoop hadoop 4096 Jun 29 11:42 conf<br>drwxr-xr-x 23 hadoop hadoop 4096 Jun 29 11:42 interpreter<br>drwxr-xr-x 4 hadoop hadoop 12288 Jun 29 11:42 lib<br>-rw-r--r-- 1 hadoop hadoop 59610 Jun 8 22:20 LICENSE<br>drwxr-xr-x 2 hadoop hadoop 4096 Jun 29 11:42 licenses<br>drwxr-xr-x 8 hadoop hadoop 4096 Jun 29 11:42 notebook<br>-rw-r--r-- 1 hadoop hadoop 5620 Jun 8 22:20 NOTICE<br>-rw-r--r-- 1 hadoop hadoop 1324 Jun 8 22:13 README.md<br>-rw-r--r-- 1 hadoop hadoop 28609568 Jun 8 22:19 zeppelin-web-0.7.2.war | Verify |
| [administrator@dev-cdm-spark02 ~]$ **cd /usr/local/share/dsLab/ && pwd**<br>**mkdir zeppelin && mkdir zeppelin/logs && mkdir zeppelin/notebooks**<br>**sudo chown dslab.dsuser zeppelin -R**<br>**ls -alR /usr/local/share/dsLab/zeppelin/**<br>zeppelin/:<br>total 16<br>drwxrwxr-x 4 dslab dsuser 4096 Nov 7 11:59 .<br>drwxrwxr-x 6 dslab dsuser 4096 Nov 7 12:00 ..<br>drwxrwxr-x 2 dslab dsuser 4096 Nov 7 11:59 logs<br>drwxrwxr-x 2 dslab dsuser 4096 Nov 7 11:59 notebooks | Setup folder struccture |
| **vi $HOME/.bashrc**<br><<append>><br>**# Zeppelin HOME**<br>**export ZEPPELIN_HOME=/usr/local/zeppelin**<br><br>**# Spark PATH**<br>**PATH=$PATH:$ZEPPELIN_HOME/bin**<br>**export PATH** | Add variables |
| [administrator@dev-cdm-spark01 ~]$ . **.bashrc**<br>[administrator@dev-cdm-spark01 ~]$ **echo $PATH**<br>/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/administrator/.local/bin:/home/administrator/bin:/home/administrator/.local/bin:/home/administrator/bin:/usr/local/spark/bin | Check |
| [administrator@dev-cdm-spark01 ~]$ **cd $ZEPPELIN_HOME/conf**<br>[administrator@dev-cdm-spark01 conf]$ **sudo cp zeppelin-env.sh.template zeppelin-env.sh**<br>[administrator@dev-cdm-spark01 conf]$ **ls -al zeppelin-env.sh**<br>-rw-r--r-- 1 root root 6385 Jun 29 12:29 zeppelin-env.sh | Copy the template shell |

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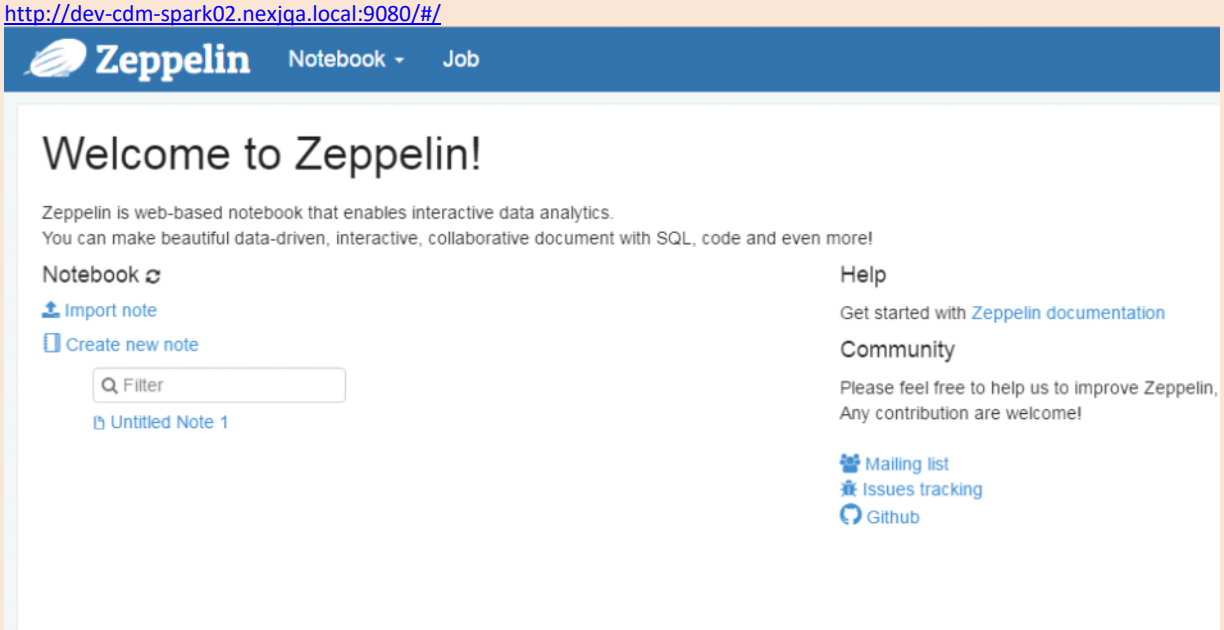
| <http://zeppelin.apache.org/docs/snapshot/install/configuration.html#zeppelin-properties> | Available properties |
| [administrator@dev-cdm-spark01 ~]$ **sudo vi $ZEPPELIN_HOME/conf/ZEPPELIN-env.sh**<br><<update>><br>**export MASTER=spark://cdm-dev-spark01.nexjqa.local:7077**<br>**export ZEPPELIN_NOTEBOOK_DIR=/usr/local/share/dsLab/zeppelin/notebooks**<br>**export ZEPPELIN_LOG_DIR=/usr/local/share/dsLab/zeppelin/logs**<br>**export SPARK_HOME=/usr/local/spark**<br>**export ZEPPELIN_PORT=9080** | Edit the conf shell and add the Master variable |
| [administrator@dev-cdm-spark01 ~]$ **. $ZEPPELIN_HOME/conf/zeppelin-env.sh**<br>[administrator@dev-cdm-spark01 ~]$ **echo $MASTER**<br>dev-cdm-spark01.nexjqa.local:7077 | Register the variable |
| [administrator@dev-cdm-spark01 logs]$ **sudo /usr/local/zeppelin/bin/zeppelin-daemon.sh start**<br>Zeppelin start [ OK ] | Start the zeppelin service |
| http://dev-cdm-spark01.nexjqa.local:9080/<br>http://dev-cdm-spark02.nexjqa.local:9080/#/<br>  | Check URL - you should see the zeppelin home page |

## Zeppelin on Master spark01 - Python and R Support

By default, only spark support is enabled (which is good) but we also should consider Python and R

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| Extra Packages for Enterprise Linux (or EPEL) is a Fedora Special Interest Group that creates, maintains, and manages a high quality set of additional packages for Enterprise Linux, including, but not limited to, Red Hat Enterprise Linux (RHEL), CentOS and Scientific Linux (SL), Oracle Linux (OL)<br><br>From <https://fedoraproject.org/wiki/EPEL> | Install EPEL Support |
| [administrator@dev-cdm-spark01 logs]$ **sudo yum install epel-release**<br>[sudo] password for administrator:<br>Loaded plugins: fastestmirror, langpacks<br>Loading mirror speeds from cached hostfile<br>* base: mirror.gpmidi.net<br>* extras: centos.mirror.netelligent.ca<br>* updates: centos.mirror.globo.tech<br>Resolving Dependencies<br>--> Running transaction check<br>---> Package epel-release.noarch 0:7-9 will be installed<br>--> Finished Dependency Resolution<br><br>Dependencies Resolved<br><br>==========<br>Package Arch Version Repository Size | Yum package |

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| ================================================================================<br>Installing:<br>epel-release noarch 7-9 extras 14 k<br><br>Transaction Summary<br>================================================================================<br>Install 1 Package<br><br>Total download size: 14 k<br>Installed size: 24 k<br>Is this ok [y/d/N]: y<br>Downloading packages:<br>epel-release-7-9.noarch.rpm \| 14 kB 00:00:00<br>Running transaction check<br>Running transaction test<br>Transaction test succeeded<br>Running transaction<br>Installing : epel-release-7-9.noarch 1/1<br>Verifying : epel-release-7-9.noarch 1/1<br><br>Installed:<br>epel-release.noarch 0:7-9<br><br>Complete! | |
| [administrator@dev-cdm-spark01 logs]$ **python --version**<br>Python 2.7.5 | Which pip? Depends on python version |
| [administrator@dev-cdm-spark01 logs]$ **sudo yum -y install python2-pip**<br>Dependency Installed:<br>python-backports.x86_64 0:1.0-8.el7<br>python-backports-ssl_match_hostname.noarch 0:3.4.0.2-4.el7<br>python-setuptools.noarch 0:0.9.8-4.el7<br><br>Complete! | Install pip2 |
| [administrator@dev-cdm-spark01 logs]$ **pip --version**<br>pip 8.1.2 from /usr/lib/python2.7/site-packages (python 2.7) | Validate |
| [administrator@dev-cdm-spark01 logs]$ **sudo yum install gcc**<br>[administrator@dev-cdm-spark01 logs]$ **sudo yum install python-devel**<br>[administrator@dev-cdm-spark01 logs]$ **sudo yum install tinker** | matlib Dependencies |
| [administrator@dev-cdm-spark01 logs]$ **pip install matlib** | Install matlib |
| https://zeppelin.apache.org/docs/0.6.2/interpreter/r.html | R |
| [administrator@dev-cdm-spark01 zeppelin]$ **sudo yum install R R-devel libcurl-devel openssl-devel**<br>Install 4 Packages (+283 Dependent packages)<br>Total download size: 223 M<br>Installed size: 483 M | Install R |
| [administrator@dev-cdm-spark01 zeppelin]$ **R -e "print(1+1)"**<br><br>R version 3.4.0 (2017-04-21) -- "You Stupid Darkness"<br>Copyright (C) 2017 The R Foundation for Statistical Computing<br>Platform: x86_64-redhat-linux-gnu (64-bit)<br><br>R is free software and comes with ABSOLUTELY NO WARRANTY.<br>You are welcome to redistribute it under certain conditions.<br>Type 'license()' or 'licence()' for distribution details.<br><br>Natural language support but running in an English locale<br><br>R is a collaborative project with many contributors.<br>Type 'contributors()' for more information and<br>'citation()' on how to cite R or R packages in publications.<br><br>Type 'demo()' for some demos, 'help()' for on-line help, or<br>'help.start()' for an HTML browser interface to help.<br>Type 'q()' to quit R. | Validate |

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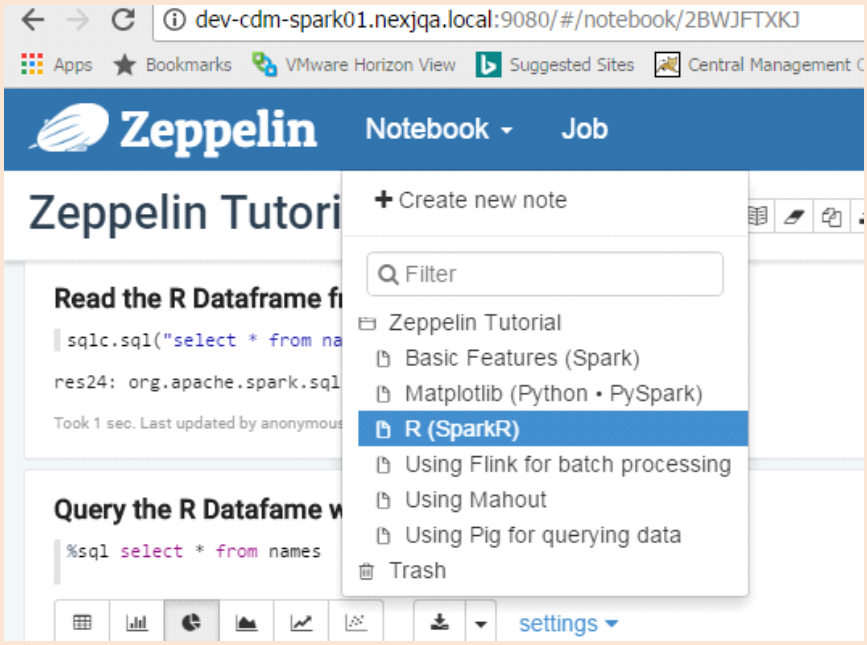
|---|---|
| > print(1+1)<br>[1] 2<br>> | |
| [administrator@dev-cdm-spark01 zeppelin]$ sudo R -e "install.packages('devtools', repos = 'http://cran.us.r-project.org')"<br>[administrator@dev-cdm-spark01 zeppelin]$ sudo R -e "install.packages('knitr', repos = 'http://cran.us.r-project.org')"<br>[administrator@dev-cdm-spark01 zeppelin]$ sudo R -e "install.packages('ggplot2', repos = 'http://cran.us.r-project.org')"<br>[administrator@dev-cdm-spark01 zeppelin]$ sudo R -e "install.packages(c('devtools','mplot', 'googleVis'), repos = 'http://cran.us.r-project.org'); require(devtools); install_github('ramnathv/rCharts')" | Install R Packages |
| Validate with the tutorial notebooks<br>• Basic Features needs spark & md & sh<br>• Matplotlib needs python<br>• SparkR needs R (some graphing failures related to python2)<br>• Flink<br>• *DON'T Mahout (no interpreter)*<br>• *DON'T PIG (no interpreter)*<br>  | Validate |

## Jupyter on Worker spark02

### Dependencies

Syncing notebooks is best done with JupyterHub, sadly that needs python 3.4 - so this node is going python3.4

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| Extra Packages for Enterprise Linux (or EPEL) is a Fedora Special Interest Group that creates, maintains, and manages a high quality set of additional packages for Enterprise Linux, including, but not limited to, Red Hat Enterprise Linux (RHEL), CentOS and Scientific Linux (SL), Oracle Linux (OL)<br><br>From <https://fedoraproject.org/wiki/EPEL> | Install EPEL Support |
| [administrator@dev-cdm-spark02 logs]$ **sudo yum install epel-release**<br>[sudo] password for administrator:<br>Loaded plugins: fastestmirror, langpacks<br>Loading mirror speeds from cached hostfile<br>* base: mirror.gpmidi.net<br>* extras: centos.mirror.netelligent.ca<br>* updates: centos.mirror.globo.tech<br>Resolving Dependencies<br>--> Running transaction check<br>---> Package epel-release.noarch 0:7-9 will be installed<br>--> Finished Dependency Resolution<br><br>Dependencies Resolved<br><br>==========<br>Package Arch Version Repository Size<br>==========<br>Installing:<br>epel-release noarch 7-9 extras 14 k | Yum package |

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| Transaction Summary<br>==========<br>Install 1 Package<br><br>Total download size: 14 k<br>Installed size: 24 k<br>Is this ok [y/d/N]: y<br>Downloading packages:<br>epel-release-7-9.noarch.rpm \| 14 kB 00:00:00<br>Running transaction check<br>Running transaction test<br>Transaction test succeeded<br>Running transaction<br>Installing : epel-release-7-9.noarch 1/1<br>Verifying : epel-release-7-9.noarch 1/1<br><br>Installed:<br>epel-release.noarch 0:7-9<br><br>Complete! | |
| [administrator@dev-cdm-spark02 ~]$ **sudo yum install python34**<br>[administrator@dev-cdm-spark02 ~]$ **sudo pip3 install -U ipython**<br>[administrator@dev-cdm-spark02 ~]$ **sudo ipython3 kernelspec install-self**<br>[administrator@dev-cdm-spark02 ~]$ **sudo python3 -m ipykernel install --user** | Bump python |
| [administrator@dev-cdm-spark02 logs]$ **python --version**<br>Python 2.7.5 | Which pip? Depends on python version |
| [administrator@dev-cdm-spark02 logs]$ **sudo yum -y install python34-pip**<br>Dependency Installed:<br>python-backports.x86_64 0:1.0-8.el7<br>python-backports-ssl_match_hostname.noarch 0:3.4.0.2-4.el7<br>python-setuptools.noarch 0:0.9.8-4.el7<br><br>Complete! | Install pip3 |
| [administrator@dev-cdm-spark02 logs]$ **sudo pip3 install --upgrade pip** | Upgrade it |
| [administrator@dev-cdm-spark02 logs]$ **pip3 --version**<br>pip 9.0.1 from /usr/lib/python3.4/site-packages (python 3.4) | Validate |
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## JupyterHub & Notebooks

https://jupyterhub.readthedocs.io/en/latest/quickstart.html

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| [administrator@dev-cdm-spark02 ~]$ **sudo yum install npm**<br>[administrator@dev-cdm-spark02 ~]$ **npm install -g configurable-http-proxy** | Install http proxy |
| [administrator@dev-cdm-spark02 ~]$ **sudo pip3 install jupyter**<br>[administrator@dev-cdm-spark02 ~]$ **sudo python3 -m pip install notebook**<br>[administrator@dev-cdm-spark02 ~]$ **sudo pip3.4 install jupyterhub** | Install the notebook & hub |
| [administrator@dev-cdm-spark02 ~]$<br>**sudo mkdir /usr/local/share/dsLab**<br>**sudo mv /home/administrator/jupyterHub /usr/local/share/dsLab**<br>**sudo mkdir /usr/local/share/dsLab/datasets**<br>**sudo chown dslab.dsuser -R /usr/local/share/dsLab**<br>**sudo chmod 775 -R /usr/local/share/dsLab**<br><br>**# Default user account**<br>**sudo groupadd dsuser**<br>**sudo useradd dslab -g dsuser**<br>**sudo passwd dslab**<br>**sudo usermod -aG dsuser,administrator administrator** | Plant the root<br><br>Set folder privileges<br><br>Password for dslab is dslab |

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| [administrator@dev-cdm-spark02 ~]$<br>**cd /usr/local/share/dsLab**<br>**jupyterhub --generate-config ./jupyther-hub-conf.py**<br>[administrator@dev-cdm-spark02 ~]$<br>**vi jupytherhub_config.py**<br><<update><br>c.JupyterHub.hub_port = 8891<br>c.JupyterHub.port = 8889<br>c.Spawner.notebook_dir = '/usr/local/share/dsLab/jupyterHub/'<br>c.Spawner.environment = {'SPARK_HOME':'/usr/local/spark',<br>'PYTHONPATH':'/usr/local/spark/python:/usr/local/spark/python/lib/py4j-0.9-src.zip', 'IPYTHON':'1',<br>'PYSPARK_PYTHON':'/usr/bin/python3', 'PYSPARK_DRIVER_PYTHON':'ipython3'} | Configure hub |
| c.Authenticator.admin_users = {'administrator'}<br>c.LocalAuthenticator.add_user_cmd = ['/usr/sbin/adduser']<br>c.LocalAuthenticator.create_system_users = True | Hub security |
| [administrator@dev-cdm-spark02 ~]$**vi $HOME/.bashrc**<br><<update><br># Python<br>**export PYTHONPATH=$PARK_HOME/python:$PYTHONPATH**<br>**IPYTHON=1**<br>**PYSPARK_PYTHON=/usr/bin/python3**<br>**PYSPARK_DRIVER_PYTHON=ipython3**<br><br>**# Default to python 3**<br>**alias python='python3'** | Set bashrc - note this is only used by the admin user |
| [administrator@dev-cdm-spark02 ~]$ **sudo nohup jupyterhub --config=/usr/local/share/dsLab/jupyterhub_config.py &** | Run script |
| http://dev-cdm-spark02.nexjqa.local:8889/user/administrator/tree?<br>  | Validate |

## Jupyter Notebook Kernel Support

http://people.duke.edu/~ccc14/sta-663/Jupyter.html

https://www.dataquest.io/blog/pyspark-installation-guide/

### *PYTHON3 Support*

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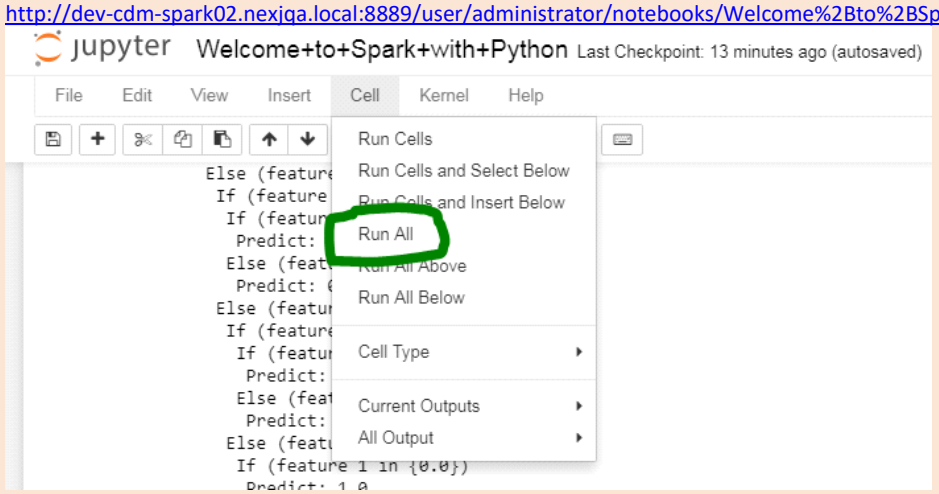
| [administrator@dev-cdm-spark02 ~]$ **python3 -m ipykernel install --user**<br>[administrator@dev-cdm-spark02 ~]$ **sudo pip3 install findspark**<br>[administrator@dev-cdm-spark02 ~]$ **sudo pip3 install py4j**<br>[administrator@dev-cdm-spark02 ~]$ **sudo pip3 install numpy** | Python Kernel support |
| [administrator@dev-cdm-spark02 ~]$ **sudo bash**<br>**Id**<br>[root@dev-cdm-spark02 ~]# id<br>uid=0(root) gid=0(root) groups=0(root)<br>**ipython**<br>Python 3.4.5 (default, May 29 2017, 15:17:55)<br>Type 'copyright', 'credits' or 'license' for more information<br>IPython 6.1.0 -- An enhanced Interactive Python. Type '?' for help.<br><br>In [1]: exit | Start ipython as root to create the default folder structure |
| [administrator@dev-cdm-spark02 ~]$ **vi $HOME/.ipython/profile_default/startup/00-startup.py**<br><<update>><br>**import sys,os,os.path**<br><br>**os.environ['IPYTHON_STARTUP']=os.path.abspath(__file__)**<br>**os.environ['SPARK_HOME']='/usr/local/spark'**<br>**os.environ['PATH']=os.environ['PATH'] +':'+ os.environ['SPARK_HOME']**<br><br>**os.environ['PYTHONPATH']=os.environ['SPARK_HOME'] +'/python:' + os.environ['SPARK_HOME'] +'/python/lib/py4j-0.9-src.zip:' + os.environ['SPARK_HOME'] + '/python/spark-riak-connector/connector/python/dist/pyspark_riak-1.6.3-py3.4.egg'** | Pass variables to notebook instance via python startup |

**os.environ['IPYTHON']='1'**
**os.environ['PYSPARK_PYTHON']='/usr/bin/python3'**
**os.environ['PYSPARK_DRIVER_PYTHON']='ipython3'**

Download "Welcome+to+Spark+with+Python.ipynb" notebook from https://try.jupyter.org/ then upload locally
http://dev-cdm-spark02.nexjqa.local:8889/user/administrator/notebooks/Welcome%2Bto%2BSpark%2Bwith%2BPython.ipynb

Validate the python3 kernel




...


*PYTHON2 Support*
http://ipython.readthedocs.io/en/stable/install/kernel_install.html

[administrator@dev-cdm-spark02 ~]$
**sudo yum install python2-pip**
**sudo pip install --upgrade setuptools**

Pip2 support

[administrator@dev-cdm-spark02 ~]$
**sudo python2 -m pip install ipykernel**
**sudo python2 -m ipykernel install --user**

Collecting ipykernel
  Using cached ipykernel-4.6.1-py2-none-any.whl
Collecting tornado>=4.0 (from ipykernel)
  Using cached tornado-4.5.1.tar.gz
Collecting jupyter-client (from ipykernel)
  Using cached jupyter_client-5.1.0-py2.py3-none-any.whl
Collecting ipython>=4.0.0 (from ipykernel)
  Using cached ipython-6.1.0.tar.gz
    Complete output from command python setup.py egg_info:

    IPython 6.0+ does not support Python 2.6, 2.7, 3.0, 3.1, or 3.2.
    When using Python 2.7, please install IPython 5.x LTS Long Term Support version.
    Beginning with IPython 6.0, Python 3.3 and above is required.

    See IPython `README.rst` file for more information:

        https://github.com/ipython/ipython/blob/master/README.rst

    Python sys.version_info(major=2, minor=7, micro=5, releaselevel='final', serial=0) detected.
    Your pip version is out of date, please install pip >= 9.0.1. pip 8.1.2 detected.

Python Kernel support - ABANDONDED

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| ----------<br>**Command "python setup.py egg_info" failed with error code 1 in /tmp/pip-build-wk1fsX/ipython/** | |

*R Support*

http://ipython.readthedocs.io/en/stable/install/kernel_install.html

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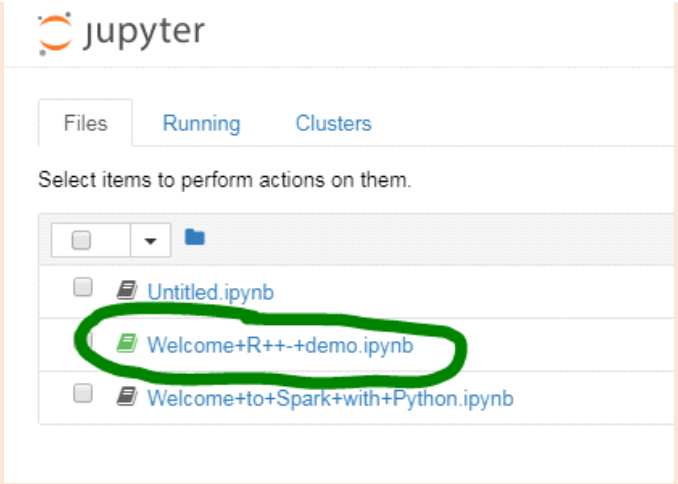
| [administrator@dev-cdm-spark02 ~]$ **sudo yum install R R-devel libcurl-devel openssl-devel**<br>Install 4 Packages (+283 Dependent packages)<br>Total download size: 223 M<br>Installed size: 483 M<br>sudo apt-get install libzmq3-dev libcurl4-openssl-dev | Install R |
| [administrator@dev-cdm-spark02 ~]$ **R -e "print(1+1)"**<br><br>R version 3.4.0 (2017-04-21) -- "You Stupid Darkness"<br>Copyright (C) 2017 The R Foundation for Statistical Computing<br>Platform: x86_64-redhat-linux-gnu (64-bit)<br><br>R is free software and comes with ABSOLUTELY NO WARRANTY.<br>You are welcome to redistribute it under certain conditions.<br>Type 'license()' or 'licence()' for distribution details.<br><br>Natural language support but running in an English locale<br><br>R is a collaborative project with many contributors.<br>Type 'contributors()' for more information and<br>'citation()' on how to cite R or R packages in publications.<br><br>Type 'demo()' for some demos, 'help()' for on-line help, or<br>'help.start()' for an HTML browser interface to help.<br>Type 'q()' to quit R.<br><br>> print(1+1)<br>[1] 2<br>> | Validate |
| [administrator@dev-cdm-spark02 ~]$<br>**sudo R -e "install.packages('devtools', repos = 'http://cran.us.r-project.org')"**<br>**sudo R -e "install.packages('knitr', repos = 'http://cran.us.r-project.org')"**<br>**sudo R -e "install.packages('ggplot2', repos = 'http://cran.us.r-project.org')"**<br>**sudo R -e "install.packages(c('devtools','mplot', 'googleVis'), repos = 'http://cran.us.r-project.org'); require(devtools); install_github('ramnathv/rCharts')"** | Install R Packages |

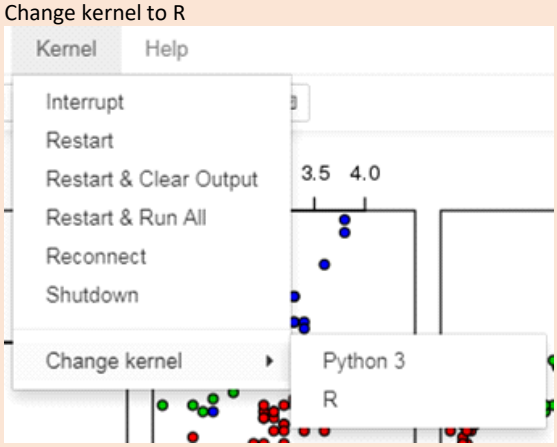
R python Kernel Support

http://people.duke.edu/~ccc14/sta-663/Jupyter.html

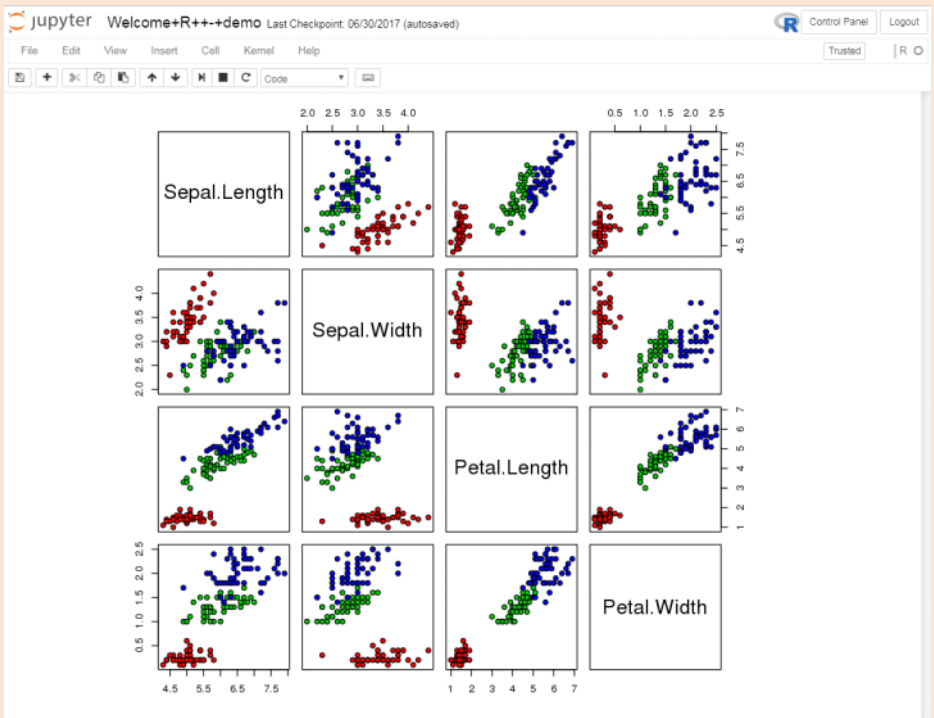
| | |
|---|---|
| [administrator@dev-cdm-spark02 ~]$ **sudo apt-get install libzmq3-dev libcurl4-openssl-dev** | Install libraries |
| | |
| [administrator@dev-cdm-spark02 ~]$ **sudo R**<br>**library(devtools)**<br>**install_github('IRkernel/IRkernel')** | R python kernel libraries as root |
| [administrator@dev-cdm-spark02 ~] **R -e "IRkernel::installspec(user = FALSE)"**<br>[InstallKernelSpec] Installed kernelspec ir in /usr/local/share/jupyter/kernels/ir | Run R to install kernel spec into admin account |
| http://dev-cdm-spark02.nexjqa.local:8889/user/administrator/tree?#notebooks | Validate |




Change kernel to R




Restart and run




## Data Science Lab on Worker spark02

### Dependencies

Jupytherhub and notebook, this section is mostly folder arrangement and user accounts

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|---|---|
| [administrator@dev-cdm-spark02 ~]$<br>**sudo mkdir /usr/local/share/dsLab**<br>**sudo chown dslabr.dsuser -R .** | Plant the root |

| | |
|---|---|
| **sudo vi /home/administrator/runChangePassword.sh**<br><<update>><br>#!/bin/bash<br><br># Prompt for the user account to change<br>read -e -p $'Enter Login User Account ' -r userAcct<br><br># First make sure the account was provided<br>if [ -n "$userAcct"]; then<br>  echo ""<br>  echo "Usage: " $0 " <UserID>"<br>  echo "  Eg: " $0 " " `id -nu`<br>  echo ""<br>  exit;<br>fi<br><br># login to the specified account<br># this is done for two reasons<br># 1. Avoid people changing someone else's account<br># 2. Authenticates account through password verification<br>echo ""<br>echo "Please login to change your account " $userAcct<br>/usr/bin/su $userAcct -c echo ""<br>RETVAL=$?<br>if [ $RETVAL -ne 0 ]; then<br>  echo "Failed to change password for " $userAcct<br>  echo "Stopping"<br>  exit;<br>fi<br><br>echo "RETVAL = " $RETVAL<br>echo ""<br>echo "Authentication as " $userAcct " confirmed."<br>echo ""<br>echo "Enter your new password"<br>/usr/bin/sudo /usr/bin/passwd $userAcct<br>#/usr/bin/passwd $userAcct<br><br>echo ""<br>echo "Your password has been changed"<br>echo "" | Change Password |

## Tensorflow spark02

### Dependencies

Jupytherhub and notebook, this section is mostly folder arrangement and user accounts

| | |
|---|---|
| [administrator@dev-cdm-spark02 ~]$<br>**sudo pip3 install tensorflow**<br>**sudo pip3 uninstall python3-protobuf-2.5.0** | Install |
| | Validate |

## FastAI Courses

https://github.com/fastai/courses/

https://docs.hpc.arizona.edu/display/UAHPC/Singularity+-+CentOS7%2C+Theano0.9%2C+Python3.4%2C+Cuda7.5%2C+cuDNN5.1

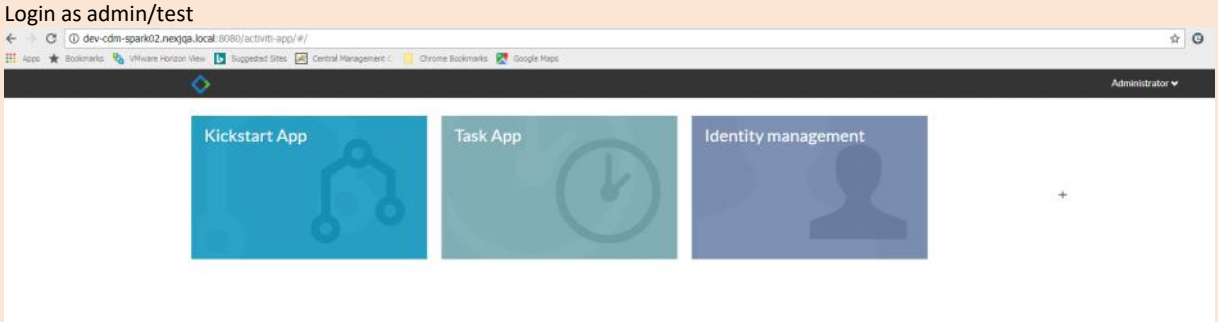
http://www.deeplearning.net/software/theano/install_windows.html#alternative-anaconda

| | |
|---|---|
| [administrator@dev-cdm-spark02 ~]$<br># CUDA<br>**sudo  yum -y install http://developer.download.nvidia.com/compute/cuda/repos/rhel7/x86_64/cuda-repo-rhel7-7.5-18.x86_64.rpm**<br>**sudo yum -y install wget vim-enhanced python34u python34u-pip python34u-devel libgomp cuda-runtime-7-5 check cmake3 cuda-misc-headers-7-5 cuda-cudart-dev-7-5**<br>sudo pip install pycuda scikit-cuda<br>sudo ln -s /usr/local/cuda-7.5 /usr/local/cuda<br><br>#CUDA Install<br>sudo rpm -i cuda-repo-rhel7-7-5-local-7.5-18.x86_64.rpm<br>sudo yum clean all | Install packages |

| | |
|---|---|
| sudo yum install cuda<br><br># Theano<br>sudo pip3 install Theano==0.9 numpy==1.11.0 scipy==0.17.1 nose Cython python34-devel reload h5py bcolz sympy<br><br># LIbbpuarray<br>Cd $HOME<br>git clone https://github.com/Theano/libgpuarray.git<br>mkdir $HOME/libgpuarray/Build<br>cd $HOME/libgpuarray/Build<br>cmake3 .. -DCMAKE_BUILD_TYPE=Release && make<br>sudo make install<br>#python portion<br>cd $HOME/libgpuarray<br>python3 setup.py build<br>python3.4 setup.py install | |

## Activiti spark02

After downloading the Activiti UI WAR file from the Activiti website, follow these steps to get the demo setup running with default settings. You'll need a working Java runtime and Apache Tomcat installation (actually, any web container would work since we only rely on the servlet capability. But we test on Tomcat primarily).

| | |
|---|---|
| [administrator@dev-cdm-spark02 ~]$<br>**sudo yum install tomcat**<br>**sudo yum install tomcat-webapps tomcat-admin-webapps**<br>**sudo yum install tomcat-docs-webapp tomcat-javadoc**<br>**sudo systemctl start tomcat** | Install tomcat first |
| [administrator@dev-cdm-spark02 ~]$<br><<ftp the activiti*.zip file to $HOME>><br>cd /usr/local/share<br>sudo unzip /home/administrator/activiti-6.0.0.zip<br>cd activiti*/wars<br>sudo cp actitivi-app.war /usr/share/tomcat/webapps | Then copy the WAR file |
| http://dev-cdm-spark02.nexjqa.local:8080/activiti-app<br>Login as admin/test<br>  | Validate admin/test |

## Jupyter->Zeppelin Conversion

This repo has code for converting Zeppelin notebooks to Jupyter's ipynb format.

To convert a notebook, run:

```
python jupyter-zeppelin.py note.json
```

This will create a file named using the Zeppelin note's name in the current directory. Alternatively, you can pass an output path:

```
python jupyter-zeppelin.py note.json Example.ipynb
```

From <https://github.com/rdblue/jupyter-zeppelin>

upyter's ipynb is json file. You can find The Jupyter Notebook Format
Zeppelin's note.json is also json format. Each notebook has an folder(notebook id) and note.json.
It should be possible to convert with a small application. I think most important information shall be.
cells(jupyter) -> paragraphs(Zeppelin)
cell -> paragraph
cell_type -> %... in text
source -> text

From <https://stackoverflow.com/questions/40008886/running-jupyter-ipython-document-on-zepplin>