


```

File Edit View Search Terminal Help
1 .bashrc +
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi

#my variables

export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64
export PATH="$PATH:$JAVA_HOME/bin"
export SPARK_HOME=/home/guardian/Desktop/spark-2.3.1-bin-hadoop2.7
export PATH="$PATH:$SPARK_HOME/bin"
export PYSARK_DRIVER_PYTHON=jupyter
export PYSARK_DRIVER_PYTHON_OPTS="notebook"
~
~
NORMAL .bashrc + 96% 1

```

????????????????

?????Jupyter Notebook ?????????? ??????????pyspark ????????

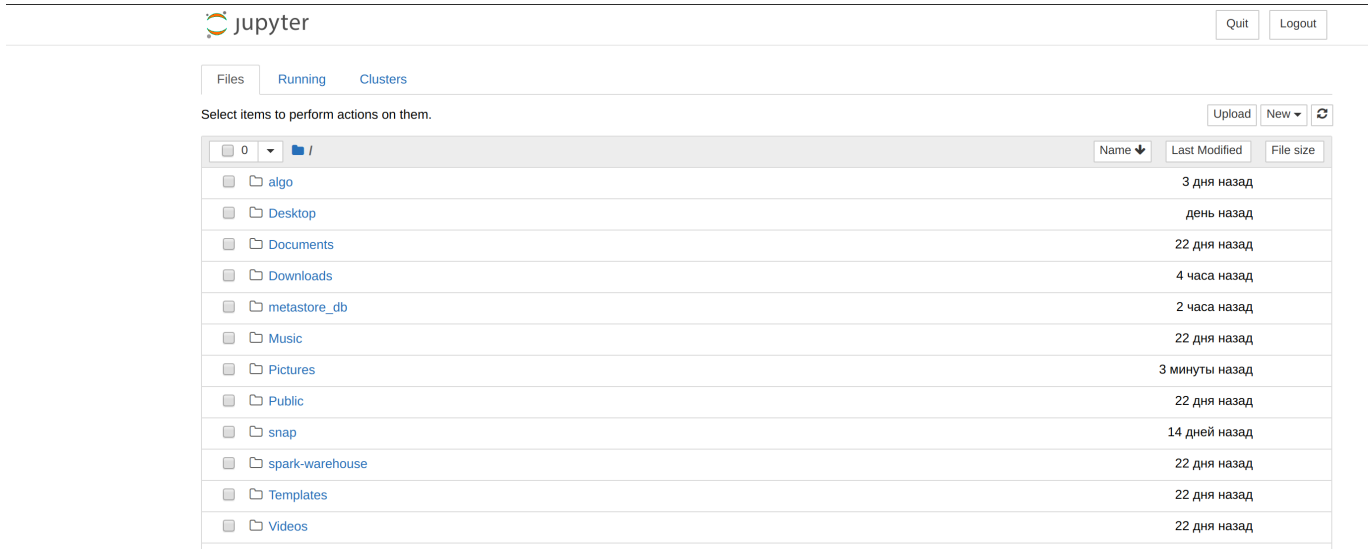
```

File Edit View Search Terminal Help
guardian@guardian:~$ pyspark
[I 16:07:42.424 NotebookApp] Serving notebooks from local directory: /home/guardian
[I 16:07:42.424 NotebookApp] The Jupyter Notebook is running at:
[I 16:07:42.424 NotebookApp] http://localhost:8888/?token=4d74c58c87b45d7cf2f55673bbe523a9054c7a574acf3254
[I 16:07:42.424 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 16:07:42.425 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time, to login with a token:
http://localhost:8888/?token=4d74c58c87b45d7cf2f55673bbe523a9054c7a574acf3254
[I 16:07:43.174 NotebookApp] Accepting one-time-token-authenticated connection from 127.0.0.1

```

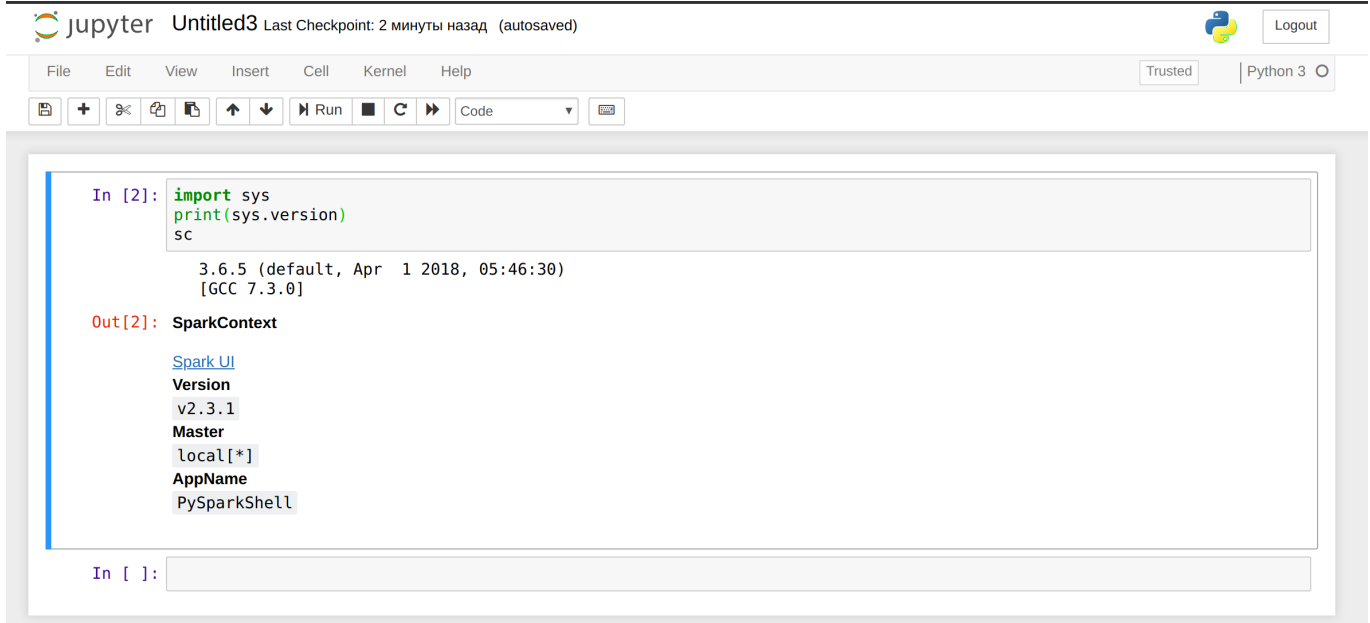
???? URL ?????????????? ?????????????????????????????????



new ??????Python 3 ?????????????????????????????????

```
import sys
print(sys.version)
sc
```

????????????????????



?????? ctrl-c ?????? Jupyter ???????

?: ???jar ?????????????????? jar ?????? \$SPARK_HOME/jars ???????

intersystems-jdbc ? intersystems-spark ??????? (jpmml ??????????) ??? jar ?????? Spark ??????????
????????????????????

```
sudo cp /path to intersystems iris/dev/java/lib/JDK18/intersystems-jdbc-3.0.0.jar /path to spark/spark-2.3.1-bin-hadoop2.7/jars
```


• 'jupyter'????????????

1. vim ~/.bashrc;
2. ??? export PATH="\$PATH:~/local/bin" ???????
3. ?????? source ~/.bashrc? ???????
4. ?????????? pip3 ? jupyter ????????????????

• env: 'jupyter': ??????????????????????????????

1. ~/.bashrc ???export PYSPARK_DRIVER_PYTHON=/home/.../local/bin/jupyter ???????

• TypeError: 'JavaPackage' ??????????????????

1. ??? jar ?????? /.../spark-2.3.1-bin-hadoop2.7/jars ??????????????
2. Notebook ??????????

• Java ???

1. Java ?????? 8 ?????? (Java 6/7 ??????????????????????????????????)
2. echo \$JAVA_HOME ???????Java ?????? 8 ?????????? ??????????~/.bashrc ???????????
3. ?????? sudo update-alternatives --config java ???????Java ???????????????????
4. ?????? sudo update-alternatives --config javac ???????Java ???????????????????

• PermissionError: [Errno 13] Permission denied: '/usr/local/share/jupyter'

1. ?????????????????? --user ???????

• Jupyter ????'toree'??????? : [Errno 2] ?????????????????????????????????

1. sudo ??????????????????

• PYSPARK_SUBMIT_ARGS ?????????????? spark/pyspark ?????????????? /.../spark-2.3.1-bin-hadoop2.7/conf/spark-env.sh ??????????????????????????????

1. ?????????????? spark-env.sh ??????????

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- [Jupyter](#)
- [Apache Toree](#)
- [Apache Spark](#)
- [ML ??? InterSystems IRIS ??????](#)
- [Iris Dataset ? K ???](#)
- [Apache Spark?Apache Zeppelin?InterSystems IRIS ??????????](#)

#AI #API #Python #??? #??? #InterSystems IRIS

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??URL: https://jp.community.intersystems.com/post/jupyter-notebook-apache-spark-intersystems-iris-%E3%82%92%E8%B5%B7%E5%8B%95%E3%81%95%E3%81%9B%E3%82%8B%E6%96%B9%E6%B3%95