

R

Batch jobs

If you have a R script called *job.r*, you can run it from your submit script with the following command:

```
R CMD BATCH -q job.r job.out
```

The *job.out* determines where printed output from *job.r* goes. If you have multiple jobs running at the same time this will cause your jobs to overwrite each others output. In this case, replace the command with the following:

```
R CMD BATCH -q job.r job.${PBS_JOBID/.*}.out
```

which will place the output in files called *job.\$JOBNUMBER.out*

Rscript jobs

If you create a *job.r* with the following contents:

```
#!/usr/bin/Rscript  
print("Hello Batch World!")
```

To run the script with *Rscript*, we must first authorize the file:

```
$ chmod +x job.r
```

Then, we can either run the file with:

```
$ Rscript job.r
```

Or:

```
$ ./job.r
```

Doing so will produce output directly in the terminal, e.g.

```
$ Rscript job.r  
[1] "Hello Batch World!"
```

Installing Additional Packages

You can install packages from CRAN yourself by using the following R command:

```
install.packages(c("gamlss"), dependencies=TRUE,
```

```
repos='http://cran.rstudio.com/')
```

Assuming that you do not have a personal library directory you will see this Warning

“Would you like to use a personal library instead? (y/n)”

Select 'y'

and **Select 'y'** again when prompted to create the directory

your package should download and install into your personal library directory.

replacing *gam/ls* with your own list of package names.

You can list the installed packages with the command:

```
installed.packages()
```

rJava

You can install package rJava from CRAN yourself by using the following R command: Login into submit node, and perform the following:

Enter an interactive job.

```
[user@submitnew ~]$ qsub -I
qsub: waiting for job xxxxx.maui.grid.fe.up.pt to start
qsub: job xxxxx.maui.grid.fe.up.pt ready
```

Configure java environment for R

```
[user@compute-node ~]$ R CMD javareconf -e
Java interpreter : /bin/java
Java version      : 1.8.0_191
Java home path    : /usr/lib/jvm/java-1.8.0-
openjdk-1.8.0.191.b12-0.el7_5.x86_64/jre
Java compiler     : /bin/javac
Java headers gen.: /bin/javah
Java archive tool: /bin/jar

trying to compile and link a JNI program
detected JNI cpp flags : -I$(JAVA_HOME)/../include -
I$(JAVA_HOME)/../include/linux
detected JNI linker flags : -L$(JAVA_HOME)/lib/amd64/server -ljvm
gcc -m64 -std=gnu99 -I"/usr/include/R" -DDEBUG -I/usr/lib/jvm/java-1.8.0-
openjdk-1.8.0.191.b12-0.el7_5.x86_64/jre/../include -
I/usr/lib/jvm/java-1.8.0-
openjdk-1.8.0.191.b12-0.el7_5.x86_64/jre/../include/linux -
I/usr/local/include -fpic -O2 -g -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -
fexceptions -fstack-protector-strong --param=ssp-buffer-size=4 -grecord-gcc-
```

```
switches -m64 -mtune=generic -c conftest.c -o conftest.o
gcc -m64 -std=gnu99 -shared -L/usr/lib64/R/lib -Wl,-z,relro -o conftest.so
conftest.o -L/usr/lib/jvm/java-1.8.0-
openjdk-1.8.0.191.b12-0.el7_5.x86_64/jre/lib/amd64/server -ljvm -
L/usr/lib64/R/lib -lR
```

The following Java variables have been exported:

JAVA_HOME JAVA JAVAC JAVA_HOME JAVA_HOME JAVA_HOME JAVA_HOME
Running: /bin/bash

Start R

```
[user@compute-node ~]$ R
R version 3.5.1 (2018-07-02) -- "Feather Spray"
Copyright (C) 2018 The R Foundation for Statistical Computing
Platform: x86_64-redhat-linux-gnu (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

>
```

In the R command line preform

```
install.packages(c("rJava"), dependencies=TRUE,
repos='http://cran.rstudio.com/')
```

Assuming that you do not have a personal library directory you will see this Warning

“Would you like to use a personal library instead? (y/n)”

Select 'y'

and **Select 'y'** again when prompted to create the directory

your package should download and install into your personal library directory.

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Last update: **2019/01/09 17:54**

