RStudio on EC2 Setup

Notebook:	AWS		
Created:	9/13/2018 10:54 PM	**Updated:**	11/3/2019 11:26 AM
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URL:	https://aws.amazon.com/blogs/big-data/running-r-on-aws/		

```
#!/bin/bash
# Add non root user
adduser xxxxxx
gpasswd -a xxxxxx sudo

# Web Server
sudo apt-get update
sudo apt-get -y install nginx

# Web Server Commands
# sudo service nginx stop
# sudo service nginx start
# sudo service nginx restart
```

```
# R repo
sudo sh -c 'echo "deb http://cran.rstudio.com/bin/linux/ubuntu bionic-cran35/" >>
/etc/apt/sources.list'
sudo apt-key adv --keyserver keyserver.ubuntu.com
--recv-keys E298A3A825C0D65DFD57CBB651716619E084DAB9
gpg -a --export E298A3A825C0D65DFD57CBB651716619E084DAB9 | sudo apt-key add -

sudo apt-get update

# Install R
sudo apt-get -y install r-base
```

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# Add Additional swap space - super important for smaller EC2 Instances!!!!
#Increase EC2 Boot Volume for Installing Memory Intensive Applications
sudo /bin/dd if=/dev/zero of=/var/swap.1 bs=1M count=4096
sudo /sbin/mkswap /var/swap.1
sudo /sbin/swapon /var/swap.1
sudo sh -c 'echo "/var/swap.1 swap swap defaults 0 0 " >> /etc/fstab'

# Install devtools dependencies
sudo apt-get -y install libcurl4-gnutls-dev libxml2-dev libssl-dev

# Install devtools
sudo su - -c "R -e \"install.packages('devtools', repos='http://cran.rstudio.com/')\""
sudo su - -c "R -e \"devtools::install_github('daattali/shinyjs')\""

# Install poppler
sudo add-apt-repository -y ppa:cran/poppler
sudo apt-get update
sudo apt-get install -y libpoppler-cpp-dev


# Install java
sudo apt install default-jre
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sudo apt install default-jdk
# Set JAVA_HOME="/usr/lib/jvm/java-11-openjdk-amd64/bin/"
sudo nano /etc/environment
source /etc/environment
sudo R CMD javareconf


#Global R packages
sudo -i R
install.packages(c("pdftools","dplyr","tidyverse","reticulate","rJava"))
install.packages(c("data.table", "readr", "plumber", "deSolve", "xgboost", "aws.s3", "purrr"))
install.packages(c("xlsx","magrittr","ggplot2","shiny","stringr","broom","rlist","googleVis"))
install.packages(c("lubridate","scales","reshape2","janitor","corrplot","forcats","gridExtra"))
install.packages(c("kableExtra","tidyquant","sweep","forecast","timetk","fable","zoo","Matrix"))
install.packages(c("RcppRoll","xtable","TTR"))


#BioMaRt
if (!requireNamespace("BiocManager", quietly = TRUE))
install.packages("BiocManager")

BiocManager::install("biomaRt")


# Install RStudio-Server
sudo apt-get -y install gdebi-core
wget https://download2.rstudio.org/rstudio-server-1.1.442-amd64.deb
sudo gdebi rstudio-server-1.1.442-amd64.deb
rm rstudio-server-1.1.442-amd64.deb
# If no Rstudio server status: sudo systemctl status rstudio-server

# Install shiny and shiny-server
sudo su - -c "R -e \"install.packages('shiny', repos='http://cran.rstudio.com/')\""
wget https://download3.rstudio.org/ubuntu-12.04/x86_64/shiny-server-1.5.6.875-
amd64.deb
sudo gdebi shiny-server-1.5.6.875-amd64.deb
rm shiny-server-1.5.6.875-amd64.deb

# OpenMx
source('https://openmx.ssri.psu.edu/software/getOpenMx.R')

#add user(s)
useradd xxxxxxxx
echo xxxxxxxx:xxxxxxxx | chpasswd
sudo groupadd shiny-apps
sudo usermod -aG shiny-apps xxxxx
sudo usermod -aG shiny-apps xxxxx
cd /srv/shiny-server
sudo chown -R xxxxxx:shiny-apps .
sudo chmod g+w .
sudo chmod g+s .

# Git Repo for Shiny Server
sudo apt-get -y install git
git config --global user.email "jerome.dixon90@gmail.com"
git config --global user.name "Jerome3590"
# Make /srv/shiny-server/ a git repo
cd /srv/shiny-server
git init
#Add new repo called VCU_Health_Hacks to github account
#Copy https link and paste into below
# Connect the two
```

```
git clone https://github.com/Jerome3590/VCU_Health_Hacks.git

#Nodejs and MongoDB
sudo apt -y upgrade
sudo apt-get install curl
curl -sL https://deb.nodesource.com/setup_13.x | sudo -E bash -
sudo apt-get install -y nodejs
sudo apt install -y mongodb

##Docker Install
sudo apt install apt-transport-https ca-certificates curl software-properties-
common
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu
bionic stable"
sudo apt update
apt-cache policy docker-ce
sudo apt install docker-ce

#Python Libraries
sudo apt-get install python3-dev
sudo apt install -y python3-pip
sudo apt install build-essential libssl-dev libffi-dev python3-dev
sudo apt install -y python3-venv
pip3 install scrapy numpy scipy pandas
pip3 install scikit-learn plotly bokeh
pip3 install ipython simpy boto3
pip3 install xgboost
pip3 install keras tensorflow eli5 lightgbm
pip3 install spacy gensim nltk
pip3 install statsmodels matplotlib seaborn
pip3 install graphviz pydot catboost


#TEST IT
webserver:  ec2-3-84-214-187.compute-1.amazonaws.com

rstudio: ec2-3-84-214-187.compute-1.amazonaws.com:8787

plumber:  http://ec2-3-84-214-187.compute-1.amazonaws.com:7878/patient_image
          http://ec2-3-84-214-187.compute-1.amazonaws.com:7878/wordcloud
          http://ec2-3-84-214-187.compute-1.amazonaws.com:7878/barplot
          http://ec2-3-84-214-187.compute-1.amazonaws.com:7878/end_game




#Services
sudo systemctl status mongodb
mongo --eval 'db.runCommand({ connectionStatus: 1 })'mongo --eval 'db.runCommand({
connectionStatus: 1 })'
```