**Exercise: Creating Custom Image from a Dockerfile**

***NOTE:***Although you should be able to run these commands on any Docker version on any Linux Distribution, for the purposes of these exercises, be sure you are running Docker v1.10+ as well as the latest CentOS or Ubuntu distribution. Be sure to have pulled the 'centos:6' and 'ubuntu:latest' images from the Docker Hub (docker pull) before starting this exercise.

1. Create a directory called 'custom' and change to it. In this directory, create an empty file called "Dockerfile".

[user@minion-01:~]$ mkdir custom

[user@minion-01:~]$ cd custom

[user@minion-01:custom/]$ touch Dockerfile

2. Edit the "Dockerfile" created in Step #1 above. This configuration file should be written to perform the following actions:

* Use the base Centos 6 Latest version image from the public repository
* Identify you and your email address as the author and maintainer of this image
* Update the base OS after initial import of the image
* Install the Open-SSH Server
* Install Apache Web Server
* Expose ports 22 and 80 to support the services installed

[user@minion-01:custom/]$ vi Dockerfile

(Output) NOTE: This is one example of what this file needs to contain, yours may differ slightly

 # Dockerfile that modifies centos:centos6 to update, include Apache Web  
# Server and OpenSSH Server, exposing the appropriate ports  
FROM centos:centos6  
MAINTAINER User Name <username@domain.com>  
  
# Update the server OS  
RUN yum -y upgrade  
  
# Install Apache Web Server  
RUN yum -y install httpd  
  
# Install OpenSSH-Server  
RUN yum -y install openssh-server  
  
# Expose the SSH and Web Ports for attachment  
EXPOSE 22 80  
(Output)

3. Build the custom image from the 'Dockerfile' as created above. Name/tag this new image as "mycustomimg/withservices:v1". Once the image is built, verify the image appears in your list.

[user@minion-01:custom/]$ docker build -t mycustomimg/withservices:v1 .

(Output) NOTE: Yours will differ slightly, FULL output listed here for reference

Sending build context to Docker daemon 2.048 kB  
Sending build context to Docker daemon   
Step 0 : FROM centos:centos6  
 ---> a005304e4e74  
Step 1 : MAINTAINER User Name <username@domain.com>  
 ---> Running in f12b9039e6dd  
 ---> 67117c947e51  
Removing intermediate container f12b9039e6dd  
Step 2 : RUN yum -y upgrade  
 ---> Running in 05bdb93df51d  
Loaded plugins: fastestmirror  
Setting up Upgrade Process  
Resolving Dependencies  
--> Running transaction check  
---> Package bash.x86\_64 0:4.1.2-29.el6 will be updated  
---> Package bash.x86\_64 0:4.1.2-33.el6 will be an update  
.

.

.

Many Output

.

.

.  
---> Package yum.noarch 0:3.2.29-60.el6.centos will be updated  
---> Package yum.noarch 0:3.2.29-69.el6.centos will be an update  
--> Finished Dependency Resolution  
  
Dependencies Resolved  
  
================================================================================  
 Package              Arch      Version                        Repository  Size  
================================================================================  
Updating:  
 bash                 x86\_64    4.1.2-33.el6                   base       907 k  
 bind-libs            x86\_64    32:9.8.2-0.37.rc1.el6\_7.2      updates    885 .

.

.

.

Many Output

..  
 vim-minimal          x86\_64    2:7.4.629-5.el6                base       422 k  
 yum                  noarch    3.2.29-69.el6.centos           base       1.0 M  
  
Transaction Summary  
================================================================================  
Upgrade      52 Package(s)  
  
Total download size: 44 M  
Downloading Packages:  
--------------------------------------------------------------------------------  
Total                                           6.0 MB/s |  44 MB     00:07       
warning: rpmts\_HdrFromFdno: Header V3 RSA/SHA1 Signature, key ID c105b9de: NOKEY  
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-6  
Importing GPG key 0xC105B9DE:  
 Userid : CentOS-6 Key (CentOS 6 Official Signing Key) <centos-6-key@centos.org>  
 Package: centos-release-6-6.el6.centos.12.2.x86\_64 (@CentOS/$releasever)  
 From   : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-6  
Running rpm\_check\_debug  
Running Transaction Test  
Transaction Test Succeeded  
Running Transaction  
Warning: RPMDB altered outside of yum.  
  Updating   : libgcc-4.4.7-16.el6.x86\_64                                 1/104   
  Updating   : centos-release-6-7.el6.centos.12.3.x86\_64                  2/104

.

.

.

.

Many Output