

# Jenkins Installation

## Step 1 : Install OpenJDK

OpenJDK, the open-source implementation of the Java Platform, is the default Java development and runtime in CentOS 7. The installation is simple and straightforward.

```
[root@masterjenkins ~]# yum install java-1.8.0-openjdk -y
Loaded plugins: fastestmirror
Determining fastest mirrors
 * base: centos.excellmedia.net
 * extras: centos.excellmedia.net
 * updates: centos.excellmedia.net
base                                     | 3.6 kB  00:00:00
extras                                 | 2.9 kB  00:00:00
updates                               | 2.9 kB  00:00:00
(1/4): base/7/x86_64/group_gz         | 153 kB  00:00:00
(2/4): extras/7/x86_64/primary_db     | 246 kB  00:00:00
(3/4): base/7/x86_64/primary_db      | 6.1 MB  00:00:01
(4/4): updates/7/x86_64/primary_db   | 14 MB  00:00:02
Resolving Dependencies
```

```
[root@masterjenkins ~]# java -version
openjdk version "1.8.0_322"
OpenJDK Runtime Environment (build 1.8.0_322-b06)
OpenJDK 64-Bit Server VM (build 25.322-b06, mixed mode)
[root@masterjenkins ~]#
```

Configure Java Home Environment

```
[root@masterjenkins ~]# find /usr/lib/jvm/java-1.8* | head -n 3
```

```
[root@masterjenkins ~]# find /usr/lib/jvm/java-1.8* | head -n 3
/usr/lib/jvm/java-1.8.0
/usr/lib/jvm/java-1.8.0-openjdk
/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.322.b06-1.el7_9.x86_64
[root@masterjenkins ~]#
```

```
[root@masterjenkins ~]#
```

```
JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.322.b06-1.el7_9.x86_64
```

```
[root@masterjenkins ~]# export JAVA_HOME
[root@masterjenkins ~]# PATH=$PATH:$JAVA_HOME
```

To set it permanently update your .bash\_profile

```
# .bash_profile

# Get the aliases and functions
if [ -f ~/.bashrc ]; then
    . ~/.bashrc
fi

# User specific environment and startup programs
JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.322.b06-1.el7_9.x86_64
PATH=$PATH:$HOME/bin:$JAVA_HOME

export PATH
```

```
[root@masterjenkins ~]# source .bash_profile
[root@masterjenkins ~]# echo $JAVA_HOME
/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.322.b06-1.el7_9.x86_64
```

```
[root@masterjenkins ~]# source .bash_profile
[root@masterjenkins ~]# echo $JAVA_HOME
/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.322.b06-1.el7_9.x86_64
[root@masterjenkins ~]#
```

## Step 2 : Install Jenkins

You can install jenkins using the rpm or by setting up the repo. We will set up the repo so that we can update it easily in the future.

Get the latest version of jenkins from <https://pkg.jenkins.io/redhat-stable/> and install

```
yum -y install wget
```

```
wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
```

```
sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key
```

```
yum -y install jenkins
```

```
[root@masterjenkins ~]# wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
--2022-03-26 16:15:01-- https://pkg.jenkins.io/redhat-stable/jenkins.repo
Resolving pkg.jenkins.io (pkg.jenkins.io)... 151.101.154.133, 2a04:4e42:24::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|151.101.154.133|:443... connected.
WARNING: cannot verify pkg.jenkins.io's certificate, issued by '/C=US/O=Let's Encrypt/CN=R3':
  Issued certificate has expired.
HTTP request sent, awaiting response... 200 OK
Length: 85
Saving to: '/etc/yum.repos.d/jenkins.repo'

100%[=====]
2022-03-26 16:15:01 (2.05 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]
```

[root@masterjenkins ~]# rpm --import <https://pkg.jenkins.io/redhat-stable/jenkins.io.key>

```
[root@masterjenkins ~]# rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key
[root@masterjenkins ~]# yum install jenkins
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: centos.excellmedia.net
 * extras: centos.excellmedia.net
 * updates: centos.excellmedia.net
jenkins
jenkins/primary_db
Resolving Dependencies
--> Running transaction check
---> Package jenkins.noarch 0:2.332.1-1.1 will be installed
--> Finished Dependency Resolution
```

### Step 3: Start Jenkins

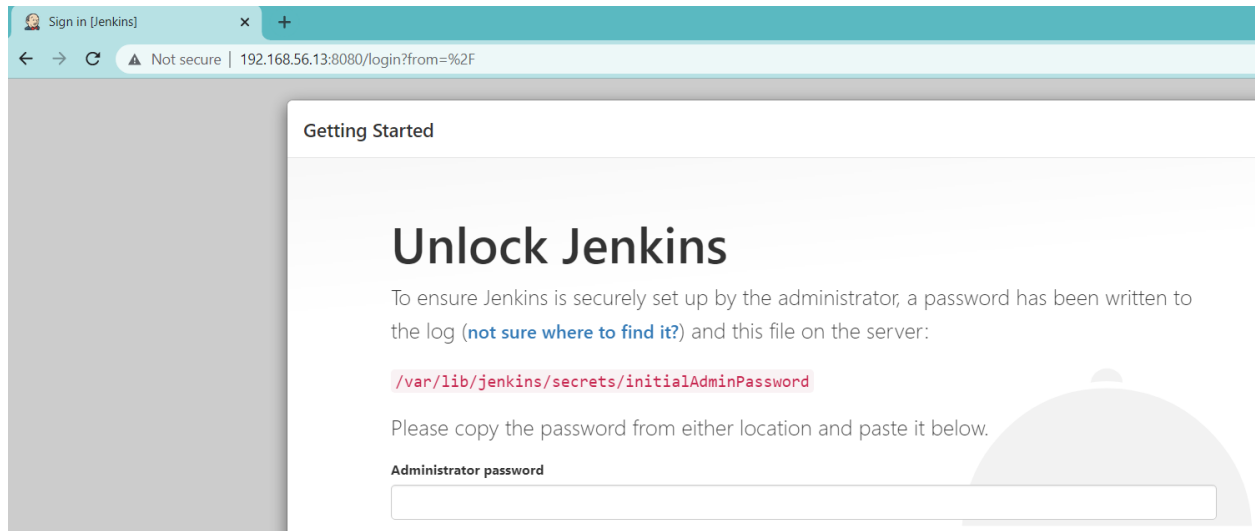
# Start jenkins service  
service jenkins start

# Setup Jenkins to start at boot,  
chkconfig jenkins on

```
[root@masterjenkins ~]# service jenkins start
Starting jenkins (via systemctl): [ OK ]
[root@masterjenkins ~]# systemctl enable jenkins
Created symlink from /etc/systemd/system/multi-user.target.wants/jenkins.service to /usr/lib/systemd/system/jenkins.service.
[root@masterjenkins ~]#
```

By default jenkins runs at port 8080, You can access jenkins at

<http://YOUR-SERVER-PUBLIC-IP:8080>



Get the password from the file :

`/var/lib/jenkins/secrets/initialAdminPassword`

```
[root@masterjenkins ~]# cat /var/lib/jenkins/secrets/initialAdminPassword
2cedf8f34ec443d89392ba299af37393
[root@masterjenkins ~]#
```

## Step 4: Install Nginx

```
[root@masterjenkins ~]# yum -y install epel-release
```

```
[root@masterjenkins ~]# yum -y install epel-release
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: centos.excellmedia.net
* extras: centos.excellmedia.net
* updates: centos.excellmedia.net
Resolving Dependencies
--> Running transaction check
--> Package epel-release.noarch 0:7-11 will be installed
--> Finished Dependency Resolution
```

```
[root@masterjenkins ~]# yum -y install nginx
```

```
[root@masterjenkins ~]# yum -y install nginx
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
epel/x86_64/metalink
 * base: centos.excellmedia.net
 * epel: d2lzk17pfhg30w.cloudfront.net
 * extras: centos.excellmedia.net
 * updates: centos.excellmedia.net
epel
(1/3): epel/x86_64/group_gz
(2/3): epel/x86_64/updateinfo
(3/3): epel/x86_64/primary_db
Resolving Dependencies
--> Running transaction check
--> Package nginx.x86_64 1:1.20.1-9.el7 will be installed
--> Processing Dependency: nginxfilesystem = 1:1.20.1-9.el7 for package: 1:nginx-1.20.1-9.el7.x86_64
--> Processing Dependency: libcrypto.so.1.1(OPENSSE_1_1_0)(64bit) for package: 1:nginx-1.20.1-9.el7.x86_64
--> Processing Dependency: libssl.so.1.1(OPENSSE_1_1_0)(64bit) for package: 1:nginx-1.20.1-9.el7.x86_64
--> Processing Dependency: libssl.so.1.1(OPENSSE_1_1_1)(64bit) for package: 1:nginx-1.20.1-9.el7.x86_64
--> Processing Dependency: nginxfilesystem for package: 1:nginx-1.20.1-9.el7.x86_64
```

## Configure nginx

Create a file jenkins.conf under /etc/nginx/conf.d/

```
[root@masterjenkins ~]# cat /etc/nginx/conf.d/jenkins.conf
upstream jenkins{
    server 127.0.0.1:8080;
}
server{
    listen      80;
    server_name abramdevops.jenkins.com;
    access_log  /var/log/nginx/jenkins.access.log;
    error_log   /var/log/nginx/jenkins.error.log;
    proxy_buffers 16 64k;
    proxy_buffer_size 128k;
    location / {
        proxy_pass http://jenkins;
        proxy_next_upstream error timeout invalid_header
http_500 http_502 http_503 http_504;

        proxy_redirect off;
        proxy_set_header    Host            $host;
        proxy_set_header     X-Real-IP       $remote_addr;
        proxy_set_header      X-Forwarded-For
$proxy_add_x_forwarded_for;
        proxy_set_header      X-Forwarded-Proto https;
    }
}
```

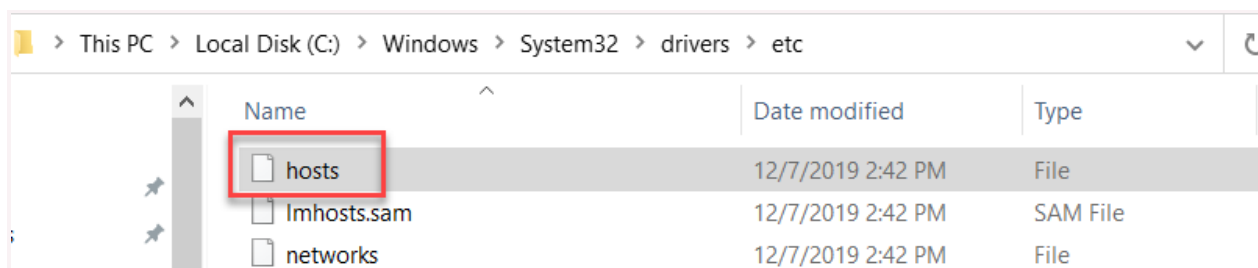
```
[root@masterjenkins ~]#
[root@masterjenkins ~]# touch /var/log/nginx/jenkins.access.log
[root@masterjenkins ~]# touch /var/log/nginx/jenkins.error.log
[root@masterjenkins ~]# chown jenkins.jenkins -R
/var/log/nginx/jenkins.access.log
[root@masterjenkins ~]# chown jenkins.jenkins -R
/var/log/nginx/jenkins.error.log
```

```
[root@masterjenkins ~]# touch /var/log/nginx/jenkins.access.log
[root@masterjenkins ~]# touch /var/log/nginx/jenkins.error.log
[root@masterjenkins ~]# chown jenkins.jenkins -R /var/log/nginx/jenkins.access.log
[root@masterjenkins ~]# chown jenkins.jenkins -R /var/log/nginx/jenkins.error.log
[root@masterjenkins ~]# systemctl start nginx ; systemctl enable nginx
Created symlink from /etc/systemd/system/multi-user.target.wants/nginx.service to /usr/lib/systemd/system/nginx.service.
[root@masterjenkins ~]# systemctl restart jenkins
```

```
[root@masterjenkins ~]# systemctl start nginx ; systemctl enable
nginx
Created symlink from
/etc/systemd/system/multi-user.target.wants/nginx.service to
/usr/lib/systemd/system/nginx.service.
[root@masterjenkins ~]# systemctl restart jenkins
```

Modify the /etc/hosts file in windows and linux to access the jenkins url from browser

```
[root@masterjenkins ~]# cat /etc/hosts
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
192.168.56.13 masterjenkins billa.com masterjenkins
192.168.56.13 abramdevops.jenkins.com
[root@masterjenkins ~]#
```

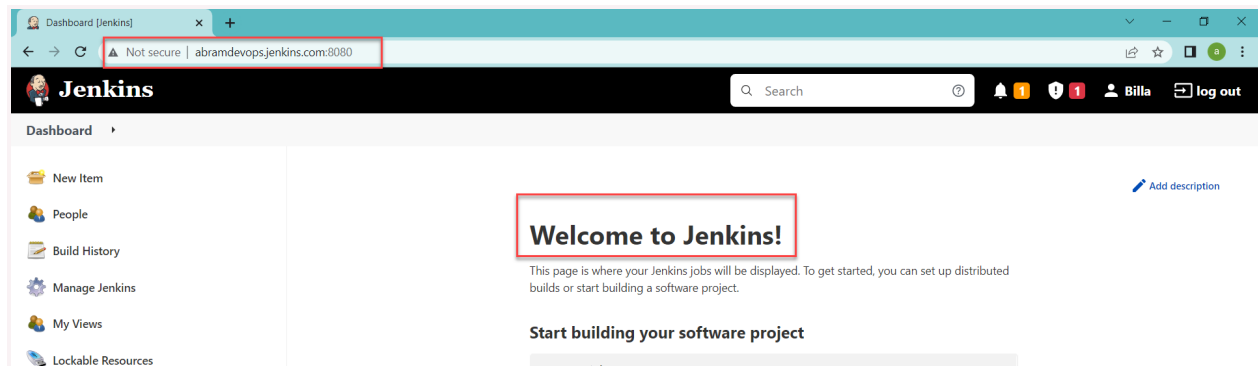


```
# localhost name resolution is handled within DNS itself.  
# 127.0.0.1      localhost  
# ::1           localhost  
192.168.56.13   abramdevops.jenkins.com
```

### Restart nginx and jenkins

```
[root@masterjenkins ~]# systemctl restart nginx && systemctl  
restart jenkins  
[root@masterjenkins ~]# systemctl status nginx  
[root@masterjenkins ~]# systemctl status jenkins
```

```
[root@masterjenkins ~]# systemctl restart nginx && systemctl restart jenkins  
[root@masterjenkins ~]# systemctl status nginx  
● nginx.service - The nginx HTTP and reverse proxy server  
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; vendor preset: disabled)  
   Active: active (running) since Sat 2022-03-26 18:00:36 UTC; 52s ago  
 Process: 20067 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)  
 Process: 20065 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)  
 Process: 20063 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)  
 Main PID: 20069 (nginx)  
   CGroup: /system.slice/nginx.service
```



That completes the jenkins installation with nginx