

## AWS Project: -15

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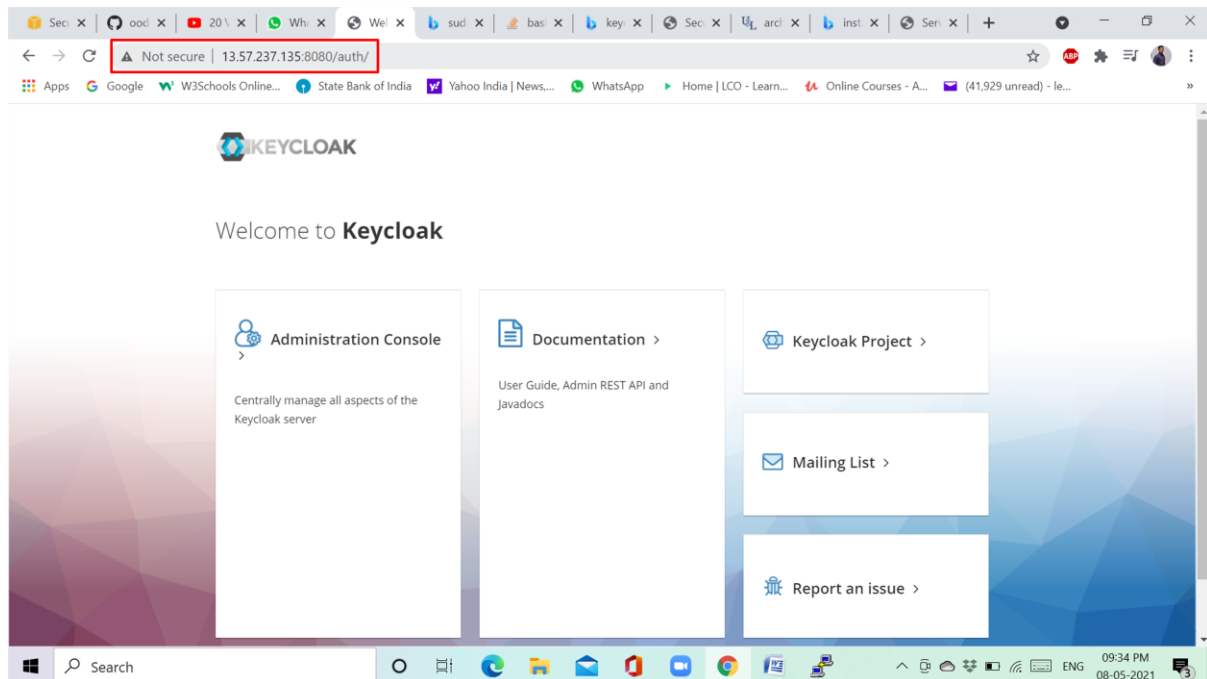
Q:- Create Open Source Identity and Access Management server - **Keycloak** install using centos7 AMI

Sol:

The screenshot shows the AWS Management Console for an EC2 instance. The instance is named 'i-0de2ac441fb1a0892' and is in the 'us-west-1' region. It is a 't2.medium' instance type, running the 'CentOS 7 - x86\_64 - with Updates HVM EBS 2020\_01-b7ee8a69-ee97-4a49-9e05-afae216d02e-ams-0042a678e4cc20 4 (ami-09055b-a287a886ba)' AMI. The instance is in the 'us-west-1a' availability zone, has a public IP of 13.57.237.135, and is associated with a key pair named 'kp-california'. The instance is running and has a public DNS of 'ec2-13-57-237-135.us-west-1.compute.amazonaws.com'.

The screenshot shows the AWS Management Console for a Security Group. The security group is named 'sg-056a945e2b211c4a4' and is in the 'us-west-1' region. It is associated with the VPC 'vpc-b0d408d6' and has four inbound rules: HTTP (port 80), Custom TCP Rule (port 8080), SSH (port 22), and HTTPS (port 443). The security group is associated with the key pair 'kp-california'.

Type	Protocol	Port Range	Source	Description
HTTP	TCP	80	0.0.0.0/0	
Custom TCP Rule	TCP	8080	0.0.0.0/0	
SSH	TCP	22	0.0.0.0/0	
HTTPS	TCP	443	0.0.0.0/0	



## Terminal Logs: -

```
login as: centos
Authenticating with public key "imported-openssh-key"
[centos@ip-172-31-25-248 ~]$ sudo -i
[root@ip-172-31-25-248 ~]# cd /opt
[root@ip-172-31-25-248 opt]# yum install wget -y
Loaded plugins: fastestmirror
Determining fastest mirrors
* base: d36uatko69830t.cloudfront.net
* extras: d36uatko69830t.cloudfront.net
* updates: d36uatko69830t.cloudfront.net
base                                     | 3.6 kB  00:00
extras                                 | 2.9 kB  00:00
updates                               | 2.9 kB  00:00
(1/4): base/7/x86_64/group_gz         | 153 kB  00:00
(2/4): extras/7/x86_64/primary_db     | 236 kB  00:00
(3/4): updates/7/x86_64/primary_db    | 8.0 MB  00:00
(4/4): base/7/x86_64/primary_db       | 6.1 MB  00:00
Resolving Dependencies
--> Running transaction check
---> Package wget.x86_64 0:1.14-18.el7_6.1 will be installed
--> Finished Dependency Resolution
```

Dependencies Resolved

```
=====
=====
Package      Arch          Version          Repository      Size
```

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=====
=====
Installing:
  wget      x86_64      1.14-18.el7_6.1      base      547 k

Transaction Summary
=====
=====
Install 1 Package

Total download size: 547 k
Installed size: 2.0 M
Downloading packages:
warning: /var/cache/yum/x86_64/7/base/packages/wget-1.14-18.el7_6.1.x86_64.rpm: Header V3
RSA/SHA256 Signature, key ID f4a80eb5: NOKEY
Public key for wget-1.14-18.el7_6.1.x86_64.rpm is not installed
wget-1.14-18.el7_6.1.x86_64.rpm | 547 kB 00:00
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Importing GPG key 0xF4A80EB5:
  Userid : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org>"
  Fingerprint: 6341 ab27 53d7 8a78 a7c2 7bb1 24c6 a8a7 f4a8 0eb5
  Package  : centos-release-7-7.1908.0.el7.centos.x86_64 (installed)
  From     : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : wget-1.14-18.el7_6.1.x86_64                    1/1
  Verifying  : wget-1.14-18.el7_6.1.x86_64                    1/1

Installed:
  wget.x86_64 0:1.14-18.el7_6.1

Complete!
[root@ip-172-31-25-248 opt]# sudo wget https://downloads.jboss.org/keycloak/9.0.0/keycloak-
9.0.0.tar.gz
--2021-05-08 15:12:03-- https://downloads.jboss.org/keycloak/9.0.0/keycloak-9.0.0.tar.gz
Resolving downloads.jboss.org (downloads.jboss.org)... 23.66.122.58, 23.66.122.41,
2600:1406:8400::1725:7fb2, ...
Connecting to downloads.jboss.org (downloads.jboss.org)|23.66.122.58|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 226566350 (216M) [application/x-gzip]
Saving to: 'keycloak-9.0.0.tar.gz'

100%[=====>] 226,566,350 115MB/s in 1.9s

2021-05-08 15:12:05 (115 MB/s) - 'keycloak-9.0.0.tar.gz' saved [226566350/226566350]

[root@ip-172-31-25-248 opt]# sudo tar xzf keycloak-9.0.0.tar.gz
[root@ip-172-31-25-248 opt]# sudo groupadd -r keycloak
[root@ip-172-31-25-248 opt]# sudo useradd -m -d /var/lib/keycloak -s /sbin/nologin -r -g keycloak
keycloak
[root@ip-172-31-25-248 opt]# sudo chown keycloak: -R keycloak-9.0.0
[root@ip-172-31-25-248 opt]# cd keycloak-9.0.0

```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak chmod 700 standalone
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo yum install java-1.8.0-openjdk-devel
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: d36uatko69830t.cloudfront.net
* extras: d36uatko69830t.cloudfront.net
* updates: d36uatko69830t.cloudfront.net
Resolving Dependencies
--> Running transaction check
---> Package java-1.8.0-openjdk-devel.x86_64 1:1.8.0.292.b10-1.el7_9 will be installed
--> Processing Dependency: java-1.8.0-openjdk(x86-64) = 1:1.8.0.292.b10-1.el7_9 for package: 1:java-1.8.0-openjdk-devel-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libjvm.so()(64bit) for package: 1:java-1.8.0-openjdk-devel-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libjava.so()(64bit) for package: 1:java-1.8.0-openjdk-devel-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libX11.so.6()(64bit) for package: 1:java-1.8.0-openjdk-devel-1.8.0.292.b10-1.el7_9.x86_64
--> Running transaction check
---> Package java-1.8.0-openjdk.x86_64 1:1.8.0.292.b10-1.el7_9 will be installed
--> Processing Dependency: xorg-x11-fonts-Type1 for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libjpeg.so.62(LIBJPEG_6.2)(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libasound.so.2(ALSA_0.9.0rc4)(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libasound.so.2(ALSA_0.9)(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libXcomposite(x86-64) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: gtk2(x86-64) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: fontconfig(x86-64) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libjpeg.so.62()(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libgif.so.4()(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libasound.so.2()(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libXtst.so.6()(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libXrender.so.1()(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libXi.so.6()(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: libXext.so.6()(64bit) for package: 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64
---> Package java-1.8.0-openjdk-headless.x86_64 1:1.8.0.292.b10-1.el7_9 will be installed
--> Processing Dependency: tzdata-java >= 2021a for package: 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: copy-jdk-configs >= 3.3 for package: 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64
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--> Processing Dependency: pcsc-lite-libs(x86-64) for package: 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: lksctp-tools(x86-64) for package: 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: jpackage-utils for package: 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64
--> Processing Dependency: cups-libs(x86-64) for package: 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64
---> Package libX11.x86_64 0:1.6.7-3.el7_9 will be installed
--> Processing Dependency: libX11-common >= 1.6.7-3.el7_9 for package: libX11-1.6.7-3.el7_9.x86_64
--> Processing Dependency: libxcb.so.1()(64bit) for package: libX11-1.6.7-3.el7_9.x86_64
--> Running transaction check
---> Package alsa-lib.x86_64 0:1.1.8-1.el7 will be installed
---> Package copy-jdk-configs.noarch 0:3.3-10.el7_5 will be installed
---> Package cups-libs.x86_64 1:1.6.3-51.el7 will be installed
--> Processing Dependency: libavahi-common.so.3()(64bit) for package: 1:cups-libs-1.6.3-51.el7.x86_64
--> Processing Dependency: libavahi-client.so.3()(64bit) for package: 1:cups-libs-1.6.3-51.el7.x86_64
---> Package fontconfig.x86_64 0:2.13.0-4.3.el7 will be installed
--> Processing Dependency: fontpackages-filesystem for package: fontconfig-2.13.0-4.3.el7.x86_64
--> Processing Dependency: dejavu-sans-fonts for package: fontconfig-2.13.0-4.3.el7.x86_64
---> Package giflib.x86_64 0:4.1.6-9.el7 will be installed
--> Processing Dependency: libSM.so.6()(64bit) for package: giflib-4.1.6-9.el7.x86_64
--> Processing Dependency: libICE.so.6()(64bit) for package: giflib-4.1.6-9.el7.x86_64
---> Package gtk2.x86_64 0:2.24.31-1.el7 will be installed
--> Processing Dependency: pango >= 1.20.0-1 for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libtiff >= 3.6.1 for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libXrandr >= 1.2.99.4-2 for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: atk >= 1.29.4-2 for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: hicolor-icon-theme for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: gtk-update-icon-cache for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libpangoft2-1.0.so.0()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libpangocairo-1.0.so.0()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libpango-1.0.so.0()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libgdk_pixbuf-2.0.so.0()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libcairo.so.2()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libatk-1.0.so.0()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libXrandr.so.2()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libXinerama.so.1()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libXfixes.so.3()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libXdamage.so.1()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
--> Processing Dependency: libXcursor.so.1()(64bit) for package: gtk2-2.24.31-1.el7.x86_64
---> Package javapackages-tools.noarch 0:3.4.1-11.el7 will be installed
--> Processing Dependency: python-javapackages = 3.4.1-11.el7 for package: javapackages-tools-3.4.1-11.el7.noarch
--> Processing Dependency: libxslt for package: javapackages-tools-3.4.1-11.el7.noarch
---> Package libX11-common.noarch 0:1.6.7-3.el7_9 will be installed
---> Package libXcomposite.x86_64 0:0.4.4-4.1.el7 will be installed
---> Package libXext.x86_64 0:1.3.3-3.el7 will be installed
---> Package libXi.x86_64 0:1.7.9-1.el7 will be installed
---> Package libXrender.x86_64 0:0.9.10-1.el7 will be installed
---> Package libXtst.x86_64 0:1.2.3-1.el7 will be installed
---> Package libjpeg-turbo.x86_64 0:1.2.90-8.el7 will be installed
---> Package libxcb.x86_64 0:1.13-1.el7 will be installed

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--> Processing Dependency: libXau.so.6()(64bit) for package: libxcb-1.13-1.el7.x86_64
---> Package lksctp-tools.x86_64 0:1.0.17-2.el7 will be installed
---> Package pcsc-lite-libs.x86_64 0:1.8.8-8.el7 will be installed
---> Package tzdata-java.noarch 0:2021a-1.el7 will be installed
---> Package xorg-x11-fonts-Type1.noarch 0:7.5-9.el7 will be installed
--> Processing Dependency: ttmkfdirdir for package: xorg-x11-fonts-Type1-7.5-9.el7.noarch
--> Processing Dependency: ttmkfdirdir for package: xorg-x11-fonts-Type1-7.5-9.el7.noarch
--> Processing Dependency: mkfontdir for package: xorg-x11-fonts-Type1-7.5-9.el7.noarch
--> Processing Dependency: mkfontdir for package: xorg-x11-fonts-Type1-7.5-9.el7.noarch
--> Running transaction check
---> Package atk.x86_64 0:2.28.1-2.el7 will be installed
---> Package avahi-libs.x86_64 0:0.6.31-20.el7 will be installed
---> Package cairo.x86_64 0:1.15.12-4.el7 will be installed
--> Processing Dependency: libpixman-1.so.0()(64bit) for package: cairo-1.15.12-4.el7.x86_64
--> Processing Dependency: libGL.so.1()(64bit) for package: cairo-1.15.12-4.el7.x86_64
--> Processing Dependency: libEGL.so.1()(64bit) for package: cairo-1.15.12-4.el7.x86_64
---> Package dejavu-sans-fonts.noarch 0:2.33-6.el7 will be installed
--> Processing Dependency: dejavu-fonts-common = 2.33-6.el7 for package: dejavu-sans-fonts-2.33-6.el7.noarch
---> Package fontpackages-filesystem.noarch 0:1.44-8.el7 will be installed
---> Package gdk-pixbuf2.x86_64 0:2.36.12-3.el7 will be installed
--> Processing Dependency: libjasper.so.1()(64bit) for package: gdk-pixbuf2-2.36.12-3.el7.x86_64
---> Package gtk-update-icon-cache.x86_64 0:3.22.30-6.el7 will be installed
---> Package hicolor-icon-theme.noarch 0:0.12-7.el7 will be installed
---> Package libICE.x86_64 0:1.0.9-9.el7 will be installed
---> Package libSM.x86_64 0:1.2.2-2.el7 will be installed
---> Package libXau.x86_64 0:1.0.8-2.1.el7 will be installed
---> Package libXcursor.x86_64 0:1.1.15-1.el7 will be installed
---> Package libXdamage.x86_64 0:1.1.4-4.1.el7 will be installed
---> Package libXfixes.x86_64 0:5.0.3-1.el7 will be installed
---> Package libXinerama.x86_64 0:1.1.3-2.1.el7 will be installed
---> Package libXrandr.x86_64 0:1.5.1-2.el7 will be installed
---> Package libtiff.x86_64 0:4.0.3-35.el7 will be installed
--> Processing Dependency: libjbig.so.2.0()(64bit) for package: libtiff-4.0.3-35.el7.x86_64
---> Package libxslt.x86_64 0:1.1.28-6.el7 will be installed
---> Package pango.x86_64 0:1.42.4-4.el7_7 will be installed
--> Processing Dependency: libthai(x86-64) >= 0.1.9 for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: libXft(x86-64) >= 2.0.0 for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: harfbuzz(x86-64) >= 1.4.2 for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: freibidi(x86-64) >= 1.0 for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: libthai.so.0(LIBTHAI_0.1)(64bit) for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: libthai.so.0()(64bit) for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: libharfbuzz.so.0()(64bit) for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: libfreibidi.so.0()(64bit) for package: pango-1.42.4-4.el7_7.x86_64
--> Processing Dependency: libXft.so.2()(64bit) for package: pango-1.42.4-4.el7_7.x86_64
---> Package python-javapackages.noarch 0:3.4.1-11.el7 will be installed
--> Processing Dependency: python-lxml for package: python-javapackages-3.4.1-11.el7.noarch
---> Package ttmkfdirdir.x86_64 0:3.0.9-42.el7 will be installed
---> Package xorg-x11-font-utils.x86_64 1:7.5-21.el7 will be installed
--> Processing Dependency: libfontenc.so.1()(64bit) for package: 1:xorg-x11-font-utils-7.5-21.el7.x86_64
--> Running transaction check
---> Package dejavu-fonts-common.noarch 0:2.33-6.el7 will be installed
---> Package freibidi.x86_64 0:1.0.2-1.el7_7.1 will be installed

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---> Package harfbuzz.x86_64 0:1.7.5-2.el7 will be installed
--> Processing Dependency: libgraphite2.so.3()(64bit) for package: harfbuzz-1.7.5-2.el7.x86_64
---> Package jasper-libs.x86_64 0:1.900.1-33.el7 will be installed
---> Package jbigkit-libs.x86_64 0:2.0-11.el7 will be installed
---> Package libXft.x86_64 0:2.3.2-2.el7 will be installed
---> Package libfontenc.x86_64 0:1.1.3-3.el7 will be installed
---> Package libglvnd-egl.x86_64 1:1.0.1-0.8.git5baa1e5.el7 will be installed
--> Processing Dependency: libglvnd(x86-64) = 1:1.0.1-0.8.git5baa1e5.el7 for package: 1:libglvnd-egl-1.0.1-0.8.git5baa1e5.el7.x86_64
--> Processing Dependency: mesa-libEGL(x86-64) >= 13.0.4-1 for package: 1:libglvnd-egl-1.0.1-0.8.git5baa1e5.el7.x86_64
--> Processing Dependency: libGLdispatch.so.0()(64bit) for package: 1:libglvnd-egl-1.0.1-0.8.git5baa1e5.el7.x86_64
---> Package libglvnd-glx.x86_64 1:1.0.1-0.8.git5baa1e5.el7 will be installed
--> Processing Dependency: mesa-libGL(x86-64) >= 13.0.4-1 for package: 1:libglvnd-glx-1.0.1-0.8.git5baa1e5.el7.x86_64
---> Package libthai.x86_64 0:0.1.14-9.el7 will be installed
---> Package pixman.x86_64 0:0.34.0-1.el7 will be installed
---> Package python-lxml.x86_64 0:3.2.1-4.el7 will be installed
--> Running transaction check
---> Package graphite2.x86_64 0:1.3.10-1.el7_3 will be installed
---> Package libglvnd.x86_64 1:1.0.1-0.8.git5baa1e5.el7 will be installed
---> Package mesa-libEGL.x86_64 0:18.3.4-12.el7_9 will be installed
--> Processing Dependency: mesa-libgbm = 18.3.4-12.el7_9 for package: mesa-libEGL-18.3.4-12.el7_9.x86_64
--> Processing Dependency: libxshmfence.so.1()(64bit) for package: mesa-libEGL-18.3.4-12.el7_9.x86_64
--> Processing Dependency: libwayland-server.so.0()(64bit) for package: mesa-libEGL-18.3.4-12.el7_9.x86_64
--> Processing Dependency: libwayland-client.so.0()(64bit) for package: mesa-libEGL-18.3.4-12.el7_9.x86_64
--> Processing Dependency: libglapi.so.0()(64bit) for package: mesa-libEGL-18.3.4-12.el7_9.x86_64
--> Processing Dependency: libgbm.so.1()(64bit) for package: mesa-libEGL-18.3.4-12.el7_9.x86_64
--> Processing Dependency: libdrm.so.2()(64bit) for package: mesa-libEGL-18.3.4-12.el7_9.x86_64
---> Package mesa-libGL.x86_64 0:18.3.4-12.el7_9 will be installed
--> Processing Dependency: libXxf86vm.so.1()(64bit) for package: mesa-libGL-18.3.4-12.el7_9.x86_64
--> Running transaction check
---> Package libXxf86vm.x86_64 0:1.1.4-1.el7 will be installed
---> Package libdrm.x86_64 0:2.4.97-2.el7 will be installed
--> Processing Dependency: libpciaccess.so.0()(64bit) for package: libdrm-2.4.97-2.el7.x86_64
---> Package libwayland-client.x86_64 0:1.15.0-1.el7 will be installed
---> Package libwayland-server.x86_64 0:1.15.0-1.el7 will be installed
---> Package libxshmfence.x86_64 0:1.2-1.el7 will be installed
---> Package mesa-libgbm.x86_64 0:18.3.4-12.el7_9 will be installed
---> Package mesa-libglapi.x86_64 0:18.3.4-12.el7_9 will be installed
--> Running transaction check
---> Package libpciaccess.x86_64 0:0.14-1.el7 will be installed
--> Finished Dependency Resolution

```

Dependencies Resolved

```

=====
=====
Package            Arch Version            Repository

```

# Size

Installing:

java-1.8.0-openjdk-devel x86\_64 1:1.8.0.292.b10-1.el7\_9 updates 9.8 M

Installing for dependencies:

alsa-lib	x86_64 1.1.8-1.el7	base	425 k
atk	x86_64 2.28.1-2.el7	base	263 k
avahi-libs	x86_64 0.6.31-20.el7	base	62 k
cairo	x86_64 1.15.12-4.el7	base	741 k
copy-jdk-configs	noarch 3.3-10.el7_5	base	21 k
cups-libs	x86_64 1:1.6.3-51.el7	base	359 k
dejavu-fonts-common	noarch 2.33-6.el7	base	64 k
dejavu-sans-fonts	noarch 2.33-6.el7	base	1.4 M
fontconfig	x86_64 2.13.0-4.3.el7	base	254 k
fontpackages-filesystem	noarch 1.44-8.el7	base	9.9 k
fribidi	x86_64 1.0.2-1.el7_7.1	base	79 k
gdk-pixbuf2	x86_64 2.36.12-3.el7	base	570 k
giflib	x86_64 4.1.6-9.el7	base	40 k
graphite2	x86_64 1.3.10-1.el7_3	base	115 k
gtk-update-icon-cache	x86_64 3.22.30-6.el7	updates	27 k
gtk2	x86_64 2.24.31-1.el7	base	3.4 M
harfbuzz	x86_64 1.7.5-2.el7	base	267 k
hicolor-icon-theme	noarch 0.12-7.el7	base	42 k
jasper-libs	x86_64 1.900.1-33.el7	base	150 k
java-1.8.0-openjdk	x86_64 1:1.8.0.292.b10-1.el7_9	updates	310 k
java-1.8.0-openjdk-headless	x86_64 1:1.8.0.292.b10-1.el7_9	updates	33 M
javapackages-tools	noarch 3.4.1-11.el7	base	73 k
jbigkit-libs	x86_64 2.0-11.el7	base	46 k
libICE	x86_64 1.0.9-9.el7	base	66 k
libSM	x86_64 1.2.2-2.el7	base	39 k
libX11	x86_64 1.6.7-3.el7_9	updates	607 k
libX11-common	noarch 1.6.7-3.el7_9	updates	164 k
libXau	x86_64 1.0.8-2.1.el7	base	29 k
libXcomposite	x86_64 0.4.4-4.1.el7	base	22 k
libXcursor	x86_64 1.1.15-1.el7	base	30 k
libXdamage	x86_64 1.1.4-4.1.el7	base	20 k
libXext	x86_64 1.3.3-3.el7	base	39 k
libXfixes	x86_64 5.0.3-1.el7	base	18 k
libXft	x86_64 2.3.2-2.el7	base	58 k
libXi	x86_64 1.7.9-1.el7	base	40 k
libXinerama	x86_64 1.1.3-2.1.el7	base	14 k
libXrandr	x86_64 1.5.1-2.el7	base	27 k
libXrender	x86_64 0.9.10-1.el7	base	26 k
libXtst	x86_64 1.2.3-1.el7	base	20 k
libXxf86vm	x86_64 1.1.4-1.el7	base	18 k
libdrm	x86_64 2.4.97-2.el7	base	151 k
libfontenc	x86_64 1.1.3-3.el7	base	31 k
libglvnd	x86_64 1:1.0.1-0.8.git5baa1e5.el7	base	89 k
libglvnd-egl	x86_64 1:1.0.1-0.8.git5baa1e5.el7	base	44 k
libglvnd-glx	x86_64 1:1.0.1-0.8.git5baa1e5.el7	base	125 k
libjpeg-turbo	x86_64 1.2.90-8.el7	base	135 k
libpciaccess	x86_64 0.14-1.el7	base	26 k
libthai	x86_64 0.1.14-9.el7	base	187 k



libtiff	x86_64 4.0.3-35.el7	base 172 k
libwayland-client	x86_64 1.15.0-1.el7	base 33 k
libwayland-server	x86_64 1.15.0-1.el7	base 39 k
libxcb	x86_64 1.13-1.el7	base 214 k
libxshmfence	x86_64 1.2-1.el7	base 7.2 k
libxslt	x86_64 1.1.28-6.el7	base 242 k
lksctp-tools	x86_64 1.0.17-2.el7	base 88 k
mesa-libEGL	x86_64 18.3.4-12.el7_9	updates 110 k
mesa-libGL	x86_64 18.3.4-12.el7_9	updates 166 k
mesa-libgbm	x86_64 18.3.4-12.el7_9	updates 39 k
mesa-libglapi	x86_64 18.3.4-12.el7_9	updates 46 k
pango	x86_64 1.42.4-4.el7_7	base 280 k
pcsc-lite-libs	x86_64 1.8.8-8.el7	base 34 k
pixman	x86_64 0.34.0-1.el7	base 248 k
python-javapackages	noarch 3.4.1-11.el7	base 31 k
python-lxml	x86_64 3.2.1-4.el7	base 758 k
ttmkfdir	x86_64 3.0.9-42.el7	base 48 k
tzdata-java	noarch 2021a-1.el7	updates 191 k
xorg-x11-font-utils	x86_64 1:7.5-21.el7	base 104 k
xorg-x11-fonts-Type1	noarch 7.5-9.el7	base 521 k

#### Transaction Summary

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Install 1 Package (+68 Dependent packages)

Total download size: 57 M

Installed size: 195 M

Is this ok [y/d/N]: y

Downloading packages:

(1/69): atk-2.28.1-2.el7.x86_64.rpm	263 kB	00:00
(2/69): alsa-lib-1.1.8-1.el7.x86_64.rpm	425 kB	00:00
(3/69): avahi-libs-0.6.31-20.el7.x86_64.rpm	62 kB	00:00
(4/69): copy-jdk-configs-3.3-10.el7_5.noarch.rpm	21 kB	00:00
(5/69): cups-libs-1.6.3-51.el7.x86_64.rpm	359 kB	00:00
(6/69): cairo-1.15.12-4.el7.x86_64.rpm	741 kB	00:00
(7/69): dejavu-fonts-common-2.33-6.el7.noarch.rpm	64 kB	00:00
(8/69): fontconfig-2.13.0-4.3.el7.x86_64.rpm	254 kB	00:00
(9/69): fontpackages-filesystem-1.44-8.el7.noarch.rpm	9.9 kB	00:00
(10/69): freibidi-1.0.2-1.el7_7.1.x86_64.rpm	79 kB	00:00
(11/69): dejavu-sans-fonts-2.33-6.el7.noarch.rpm	1.4 MB	00:00
(12/69): gdk-pixbuf2-2.36.12-3.el7.x86_64.rpm	570 kB	00:00
(13/69): giflib-4.1.6-9.el7.x86_64.rpm	40 kB	00:00
(14/69): graphite2-1.3.10-1.el7_3.x86_64.rpm	115 kB	00:00
(15/69): harfbuzz-1.7.5-2.el7.x86_64.rpm	267 kB	00:00
(16/69): hicolor-icon-theme-0.12-7.el7.noarch.rpm	42 kB	00:00
(17/69): gtk-update-icon-cache-3.22.30-6.el7.x86_64.rpm	27 kB	00:00
(18/69): jasper-libs-1.900.1-33.el7.x86_64.rpm	150 kB	00:00
(19/69): java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64.r	310 kB	00:00
(20/69): gtk2-2.24.31-1.el7.x86_64.rpm	3.4 MB	00:00
(21/69): jbigkit-libs-2.0-11.el7.x86_64.rpm	46 kB	00:00
(22/69): javapackages-tools-3.4.1-11.el7.noarch.rpm	73 kB	00:00
(23/69): libSM-1.2.2-2.el7.x86_64.rpm	39 kB	00:00
(24/69): java-1.8.0-openjdk-devel-1.8.0.292.b10-1.el7_9.x8	9.8 MB	00:00

```

(25/69): libX11-common-1.6.7-3.el7_9.noarch.rpm      | 164 kB  00:00
(26/69): libXcomposite-0.4.4-4.1.el7.x86_64.rpm     | 22 kB   00:00
(27/69): libXcursor-1.1.15-1.el7.x86_64.rpm        | 30 kB   00:00
(28/69): libXdamage-1.1.4-4.1.el7.x86_64.rpm       | 20 kB   00:00
(29/69): libXext-1.3.3-3.el7.x86_64.rpm            | 39 kB   00:00
(30/69): libXfixes-5.0.3-1.el7.x86_64.rpm          | 18 kB   00:00
(31/69): libXft-2.3.2-2.el7.x86_64.rpm             | 58 kB   00:00
(32/69): libXau-1.0.8-2.1.el7.x86_64.rpm           | 29 kB   00:00
(33/69): libXinerama-1.1.3-2.1.el7.x86_64.rpm      | 14 kB   00:00
(34/69): libXi-1.7.9-1.el7.x86_64.rpm              | 40 kB   00:00
(35/69): libXrandr-1.5.1-2.el7.x86_64.rpm          | 27 kB   00:00
(36/69): libXrender-0.9.10-1.el7.x86_64.rpm        | 26 kB   00:00
(37/69): libXtst-1.2.3-1.el7.x86_64.rpm            | 20 kB   00:00
(38/69): libXxf86vm-1.1.4-1.el7.x86_64.rpm         | 18 kB   00:00
(39/69): libfontenc-1.1.3-3.el7.x86_64.rpm         | 31 kB   00:00
(40/69): libdrm-2.4.97-2.el7.x86_64.rpm            | 151 kB  00:00
(41/69): libglvnd-1.0.1-0.8.git5baa1e5.el7.x86_64.rpm | 89 kB   00:00
(42/69): libglvnd-egl-1.0.1-0.8.git5baa1e5.el7.x86_64.rpm | 44 kB   00:00
(43/69): libglvnd-glx-1.0.1-0.8.git5baa1e5.el7.x86_64.rpm | 125 kB  00:00
(44/69): libpciaccess-0.14-1.el7.x86_64.rpm        | 26 kB   00:00
(45/69): libjpeg-turbo-1.2.90-8.el7.x86_64.rpm     | 135 kB  00:00
(46/69): libthai-0.1.14-9.el7.x86_64.rpm           | 187 kB  00:00
(47/69): libtiff-4.0.3-35.el7.x86_64.rpm           | 172 kB  00:00
(48/69): libwayland-client-1.15.0-1.el7.x86_64.rpm | 33 kB   00:00
(49/69): libwayland-server-1.15.0-1.el7.x86_64.rpm | 39 kB   00:00
(50/69): libxshmfence-1.2-1.el7.x86_64.rpm         | 7.2 kB  00:00
(51/69): libxcb-1.13-1.el7.x86_64.rpm              | 214 kB  00:00
(52/69): lksctp-tools-1.0.17-2.el7.x86_64.rpm      | 88 kB   00:00
(53/69): libxslt-1.1.28-6.el7.x86_64.rpm           | 242 kB  00:00
(54/69): mesa-libEGL-18.3.4-12.el7_9.x86_64.rpm   | 110 kB  00:00
(55/69): libICE-1.0.9-9.el7.x86_64.rpm             | 66 kB   00:00
(56/69): mesa-libGL-18.3.4-12.el7_9.x86_64.rpm    | 166 kB  00:00
(57/69): mesa-libgbm-18.3.4-12.el7_9.x86_64.rpm   | 39 kB   00:00
(58/69): mesa-libglapi-18.3.4-12.el7_9.x86_64.rpm | 46 kB   00:00
(59/69): pango-1.42.4-4.el7_7.x86_64.rpm          | 280 kB  00:00
(60/69): pcsc-lite-libs-1.8.8-8.el7.x86_64.rpm    | 34 kB   00:00
(61/69): python-javapackages-3.4.1-11.el7.noarch.rpm | 31 kB   00:00
(62/69): ttmkfdir-3.0.9-42.el7.x86_64.rpm          | 48 kB   00:00
(63/69): tzdata-java-2021a-1.el7.noarch.rpm        | 191 kB  00:00
(64/69): python-lxml-3.2.1-4.el7.x86_64.rpm        | 758 kB  00:00
(65/69): libX11-1.6.7-3.el7_9.x86_64.rpm          | 607 kB  00:00
(66/69): xorg-x11-font-utils-7.5-21.el7.x86_64.rpm | 104 kB  00:00
(67/69): xorg-x11-fonts-Type1-7.5-9.el7.noarch.rpm | 521 kB  00:00
(68/69): pixman-0.34.0-1.el7.x86_64.rpm            | 248 kB  00:00
(69/69): java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9 | 33 MB   00:01

```

```
-----
Total                               32 MB/s | 57 MB  00:01
```

```
Running transaction check
```

```
Running transaction test
```

```
Transaction test succeeded
```

```
Running transaction
```

```

Installing : libjpeg-turbo-1.2.90-8.el7.x86_64          1/69
Installing : mesa-libglapi-18.3.4-12.el7_9.x86_64      2/69
Installing : libxslt-1.1.28-6.el7.x86_64              3/69

```

Installing : libxshmfence-1.2-1.el7.x86_64	4/69
Installing : 1:libglvnd-1.0.1-0.8.git5baa1e5.el7.x86_64	5/69
Installing : fontpackages-filesystem-1.44-8.el7.noarch	6/69
Installing : libICE-1.0.9-9.el7.x86_64	7/69
Installing : libwayland-server-1.15.0-1.el7.x86_64	8/69
Installing : libSM-1.2.2-2.el7.x86_64	9/69
Installing : dejavu-fonts-common-2.33-6.el7.noarch	10/69
Installing : dejavu-sans-fonts-2.33-6.el7.noarch	11/69
Installing : fontconfig-2.13.0-4.3.el7.x86_64	12/69
Installing : python-lxml-3.2.1-4.el7.x86_64	13/69
Installing : python-javapackages-3.4.1-11.el7.noarch	14/69
Installing : javapackages-tools-3.4.1-11.el7.noarch	15/69
Installing : jasper-libs-1.900.1-33.el7.x86_64	16/69
Installing : avahi-libs-0.6.31-20.el7.x86_64	17/69
Installing : 1:cups-libs-1.6.3-51.el7.x86_64	18/69
Installing : libfontenc-1.1.3-3.el7.x86_64	19/69
Installing : 1:xorg-x11-font-utils-7.5-21.el7.x86_64	20/69
Installing : atk-2.28.1-2.el7.x86_64	21/69
Installing : libthai-0.1.14-9.el7.x86_64	22/69
Installing : libXau-1.0.8-2.1.el7.x86_64	23/69
Installing : libxcb-1.13-1.el7.x86_64	24/69
Installing : jbigkit-libs-2.0-11.el7.x86_64	25/69
Installing : libtiff-4.0.3-35.el7.x86_64	26/69
Installing : pscs-lite-libs-1.8.8-8.el7.x86_64	27/69
Installing : libX11-common-1.6.7-3.el7_9.noarch	28/69
Installing : libX11-1.6.7-3.el7_9.x86_64	29/69
Installing : libXext-1.3.3-3.el7.x86_64	30/69
Installing : libXrender-0.9.10-1.el7.x86_64	31/69
Installing : libXfixes-5.0.3-1.el7.x86_64	32/69
Installing : libXi-1.7.9-1.el7.x86_64	33/69
Installing : libXdamage-1.1.4-4.1.el7.x86_64	34/69
Installing : gdk-pixbuf2-2.36.12-3.el7.x86_64	35/69
Installing : libXcomposite-0.4.4-4.1.el7.x86_64	36/69
Installing : gtk-update-icon-cache-3.22.30-6.el7.x86_64	37/69
Installing : libXtst-1.2.3-1.el7.x86_64	38/69
Installing : libXcursor-1.1.15-1.el7.x86_64	39/69
Installing : libXft-2.3.2-2.el7.x86_64	40/69
Installing : libXrandr-1.5.1-2.el7.x86_64	41/69
Installing : libXinerama-1.1.3-2.1.el7.x86_64	42/69
Installing : libXxf86vm-1.1.4-1.el7.x86_64	43/69
Installing : giflib-4.1.6-9.el7.x86_64	44/69
Installing : pixman-0.34.0-1.el7.x86_64	45/69
Installing : hicolor-icon-theme-0.12-7.el7.noarch	46/69
Installing : lksctp-tools-1.0.17-2.el7.x86_64	47/69
Installing : fribidi-1.0.2-1.el7_7.1.x86_64	48/69
Installing : tzdata-java-2021a-1.el7.noarch	49/69
Installing : copy-jdk-configs-3.3-10.el7_5.noarch	50/69
Installing : 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64	51/69
Installing : libwayland-client-1.15.0-1.el7.x86_64	52/69
Installing : alsa-lib-1.1.8-1.el7.x86_64	53/69
Installing : ttmkfsdir-3.0.9-42.el7.x86_64	54/69
Installing : xorg-x11-fonts-Type1-7.5-9.el7.noarch	55/69
Installing : graphite2-1.3.10-1.el7_3.x86_64	56/69
Installing : harfbuzz-1.7.5-2.el7.x86_64	57/69

Installing : libpciaccess-0.14-1.el7.x86_64	58/69
Installing : libdrm-2.4.97-2.el7.x86_64	59/69
Installing : mesa-libGL-18.3.4-12.el7_9.x86_64	60/69
Installing : 1:libglvnd-glx-1.0.1-0.8.git5baa1e5.el7.x86_64	61/69
Installing : mesa-libgbm-18.3.4-12.el7_9.x86_64	62/69
Installing : 1:libglvnd-egl-1.0.1-0.8.git5baa1e5.el7.x86_64	63/69
Installing : mesa-libEGL-18.3.4-12.el7_9.x86_64	64/69
Installing : cairo-1.15.12-4.el7.x86_64	65/69
Installing : pango-1.42.4-4.el7_7.x86_64	66/69
Installing : gtk2-2.24.31-1.el7.x86_64	67/69
Installing : 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64	68/69
Installing : 1:java-1.8.0-openjdk-devel-1.8.0.292.b10-1.el7_9.x86_64	69/69
Verifying : libXext-1.3.3-3.el7.x86_64	1/69
Verifying : libpciaccess-0.14-1.el7.x86_64	2/69
Verifying : libXi-1.7.9-1.el7.x86_64	3/69
Verifying : python-javapackages-3.4.1-11.el7.noarch	4/69
Verifying : fontconfig-2.13.0-4.3.el7.x86_64	5/69
Verifying : giflib-4.1.6-9.el7.x86_64	6/69
Verifying : libXinerama-1.1.3-2.1.el7.x86_64	7/69
Verifying : mesa-libGL-18.3.4-12.el7_9.x86_64	8/69
Verifying : libXrender-0.9.10-1.el7.x86_64	9/69
Verifying : 1:xorg-x11-font-utils-7.5-21.el7.x86_64	10/69
Verifying : libXxf86vm-1.1.4-1.el7.x86_64	11/69
Verifying : graphite2-1.3.10-1.el7_3.x86_64	12/69
Verifying : libwayland-server-1.15.0-1.el7.x86_64	13/69
Verifying : 1:java-1.8.0-openjdk-devel-1.8.0.292.b10-1.el7_9.x86_64	14/69
Verifying : libXcursor-1.1.15-1.el7.x86_64	15/69
Verifying : libICE-1.0.9-9.el7.x86_64	16/69
Verifying : 1:java-1.8.0-openjdk-1.8.0.292.b10-1.el7_9.x86_64	17/69
Verifying : gtk2-2.24.31-1.el7.x86_64	18/69
Verifying : ttmkfsdir-3.0.9-42.el7.x86_64	19/69
Verifying : 1:cups-libs-1.6.3-51.el7.x86_64	20/69
Verifying : alsa-lib-1.1.8-1.el7.x86_64	21/69
Verifying : libwayland-client-1.15.0-1.el7.x86_64	22/69
Verifying : gdk-pixbuf2-2.36.12-3.el7.x86_64	23/69
Verifying : pango-1.42.4-4.el7_7.x86_64	24/69
Verifying : fontpackages-filesystem-1.44-8.el7.noarch	25/69
Verifying : copy-jdk-configs-3.3-10.el7_5.noarch	26/69
Verifying : 1:java-1.8.0-openjdk-headless-1.8.0.292.b10-1.el7_9.x86_64	27/69
Verifying : tzdata-java-2021a-1.el7.noarch	28/69
Verifying : dejavu-fonts-common-2.33-6.el7.noarch	29/69
Verifying : libXcomposite-0.4.4-4.1.el7.x86_64	30/69
Verifying : fribidi-1.0.2-1.el7_7.1.x86_64	31/69
Verifying : libXtst-1.2.3-1.el7.x86_64	32/69
Verifying : 1:libglvnd-1.0.1-0.8.git5baa1e5.el7.x86_64	33/69
Verifying : libxcb-1.13-1.el7.x86_64	34/69
Verifying : libXft-2.3.2-2.el7.x86_64	35/69
Verifying : libdrm-2.4.97-2.el7.x86_64	36/69
Verifying : 1:libglvnd-egl-1.0.1-0.8.git5baa1e5.el7.x86_64	37/69
Verifying : gtk-update-icon-cache-3.22.30-6.el7.x86_64	38/69
Verifying : lksctp-tools-1.0.17-2.el7.x86_64	39/69
Verifying : harfbuzz-1.7.5-2.el7.x86_64	40/69
Verifying : hicolor-icon-theme-0.12-7.el7.noarch	41/69
Verifying : libjpeg-turbo-1.2.90-8.el7.x86_64	42/69

Verifying : pixman-0.34.0-1.el7.x86_64	43/69
Verifying : xorg-x11-fonts-Type1-7.5-9.el7.noarch	44/69
Verifying : libX11-common-1.6.7-3.el7_9.noarch	45/69
Verifying : libX11-1.6.7-3.el7_9.x86_64	46/69
Verifying : mesa-libglapi-18.3.4-12.el7_9.x86_64	47/69
Verifying : 1:libglvnd-glx-1.0.1-0.8.git5baa1e5.el7.x86_64	48/69
Verifying : dejavu-sans-fonts-2.33-6.el7.noarch	49/69
Verifying : libXrandr-1.5.1-2.el7.x86_64	50/69
Verifying : pcsc-lite-libs-1.8.8-8.el7.x86_64	51/69
Verifying : javapackages-tools-3.4.1-11.el7.noarch	52/69
Verifying : jbigkit-libs-2.0-11.el7.x86_64	53/69
Verifying : cairo-1.15.12-4.el7.x86_64	54/69
Verifying : mesa-libgbm-18.3.4-12.el7_9.x86_64	55/69
Verifying : libxshmfence-1.2-1.el7.x86_64	56/69
Verifying : libXau-1.0.8-2.1.el7.x86_64	57/69
Verifying : libSM-1.2.2-2.el7.x86_64	58/69
Verifying : libxslt-1.1.28-6.el7.x86_64	59/69
Verifying : jasper-libs-1.900.1-33.el7.x86_64	60/69
Verifying : python-lxml-3.2.1-4.el7.x86_64	61/69
Verifying : mesa-libEGL-18.3.4-12.el7_9.x86_64	62/69
Verifying : libthai-0.1.14-9.el7.x86_64	63/69
Verifying : libXdamage-1.1.4-4.1.el7.x86_64	64/69
Verifying : libXfixes-5.0.3-1.el7.x86_64	65/69
Verifying : atk-2.28.1-2.el7.x86_64	66/69
Verifying : libfontenc-1.1.3-3.el7.x86_64	67/69
Verifying : libtiff-4.0.3-35.el7.x86_64	68/69
Verifying : avahi-libs-0.6.31-20.el7.x86_64	69/69

Installed:

java-1.8.0-openjdk-devel.x86\_64 1:1.8.0.292.b10-1.el7\_9

Dependency Installed:

alsa-lib.x86\_64 0:1.1.8-1.el7  
 atk.x86\_64 0:2.28.1-2.el7  
 avahi-libs.x86\_64 0:0.6.31-20.el7  
 cairo.x86\_64 0:1.15.12-4.el7  
 copy-jdk-configs.noarch 0:3.3-10.el7\_5  
 cups-libs.x86\_64 1:1.6.3-51.el7  
 dejavu-fonts-common.noarch 0:2.33-6.el7  
 dejavu-sans-fonts.noarch 0:2.33-6.el7  
 fontconfig.x86\_64 0:2.13.0-4.3.el7  
 fontpackages-filesystem.noarch 0:1.44-8.el7  
 fribidi.x86\_64 0:1.0.2-1.el7\_7.1  
 gdk-pixbuf2.x86\_64 0:2.36.12-3.el7  
 giflib.x86\_64 0:4.1.6-9.el7  
 graphite2.x86\_64 0:1.3.10-1.el7\_3  
 gtk-update-icon-cache.x86\_64 0:3.22.30-6.el7  
 gtk2.x86\_64 0:2.24.31-1.el7  
 harfbuzz.x86\_64 0:1.7.5-2.el7  
 hicolor-icon-theme.noarch 0:0.12-7.el7  
 jasper-libs.x86\_64 0:1.900.1-33.el7  
 java-1.8.0-openjdk.x86\_64 1:1.8.0.292.b10-1.el7\_9  
 java-1.8.0-openjdk-headless.x86\_64 1:1.8.0.292.b10-1.el7\_9  
 javapackages-tools.noarch 0:3.4.1-11.el7

jbigkit-libs.x86\_64 0:2.0-11.el7  
libICE.x86\_64 0:1.0.9-9.el7  
libSM.x86\_64 0:1.2.2-2.el7  
libX11.x86\_64 0:1.6.7-3.el7\_9  
libX11-common.noarch 0:1.6.7-3.el7\_9  
libXau.x86\_64 0:1.0.8-2.1.el7  
libXcomposite.x86\_64 0:0.4.4-4.1.el7  
libXcursor.x86\_64 0:1.1.15-1.el7  
libXdamage.x86\_64 0:1.1.4-4.1.el7  
libXext.x86\_64 0:1.3.3-3.el7  
libXfixes.x86\_64 0:5.0.3-1.el7  
libXft.x86\_64 0:2.3.2-2.el7  
libXi.x86\_64 0:1.7.9-1.el7  
libXinerama.x86\_64 0:1.1.3-2.1.el7  
libXrandr.x86\_64 0:1.5.1-2.el7  
libXrender.x86\_64 0:0.9.10-1.el7  
libXtst.x86\_64 0:1.2.3-1.el7  
libXxf86vm.x86\_64 0:1.1.4-1.el7  
libdrm.x86\_64 0:2.4.97-2.el7  
libfontenc.x86\_64 0:1.1.3-3.el7  
libglvnd.x86\_64 1:1.0.1-0.8.git5baa1e5.el7  
libglvnd-egl.x86\_64 1:1.0.1-0.8.git5baa1e5.el7  
libglvnd-glx.x86\_64 1:1.0.1-0.8.git5baa1e5.el7  
libjpeg-turbo.x86\_64 0:1.2.90-8.el7  
libpciaccess.x86\_64 0:0.14-1.el7  
libthai.x86\_64 0:0.1.14-9.el7  
libtiff.x86\_64 0:4.0.3-35.el7  
libwayland-client.x86\_64 0:1.15.0-1.el7  
libwayland-server.x86\_64 0:1.15.0-1.el7  
libxcb.x86\_64 0:1.13-1.el7  
libxshmfence.x86\_64 0:1.2-1.el7  
libxslt.x86\_64 0:1.1.28-6.el7  
lksctp-tools.x86\_64 0:1.0.17-2.el7  
mesa-libEGL.x86\_64 0:18.3.4-12.el7\_9  
mesa-libGL.x86\_64 0:18.3.4-12.el7\_9  
mesa-libgbm.x86\_64 0:18.3.4-12.el7\_9  
mesa-libglapi.x86\_64 0:18.3.4-12.el7\_9  
pango.x86\_64 0:1.42.4-4.el7\_7  
pcsc-lite-libs.x86\_64 0:1.8.8-8.el7  
pixmap.x86\_64 0:0.34.0-1.el7  
python-javapackages.noarch 0:3.4.1-11.el7  
python-lxml.x86\_64 0:3.2.1-4.el7  
ttmkfdir.x86\_64 0:3.0.9-42.el7  
tzdata-java.noarch 0:2021a-1.el7  
xorg-x11-font-utils.x86\_64 1:7.5-21.el7  
xorg-x11-fonts-Type1.noarch 0:7.5-9.el7

Complete!

[root@ip-172-31-25-248 keycloak-9.0.0]# openssl rand -hex 20 # generate a password to use for admin user

ffb89be973e1c5a608499c949825085d19437422

[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak ./bin/add-user-keycloak.sh --user admin --password KEYCLOAKPASS --realm master

Added 'admin' to '/opt/keycloak-9.0.0/standalone/configuration/keycloak-add-user.json', restart server to load user

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak ./bin/jboss-cli.sh 'embed-server,/subsystem=undertow/server=default-server/http-listener=default:write-attribute(name=proxy-address-forwarding,value=true)'
```

```
{"outcome" => "success"}
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak ./bin/jboss-cli.sh 'embed-server,/socket-binding-group=standard-sockets/socket-binding=proxy-https:add(port=443)'
```

```
{"outcome" => "success"}
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak ./bin/jboss-cli.sh 'embed-server,/subsystem=undertow/server=default-server/http-listener=default:write-attribute(name=redirect-socket,value=proxy-https)'
```

```
{"outcome" => "success"}
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl start keycloak
```

Failed to start keycloak.service: Unit not found.

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo cat > /etc/systemd/system/keycloak.service
```

```
^C
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# cat > /etc/systemd/system/keycloak.service
```

```
^C
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload [root@ip-172-31-25-
```

```
248 keycloak-9.0.0]# sudo systemctl start keycloak Failed to start keycloak.service: Unit is masked.
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# systemctl wpa_keycloak.service
```

Unknown operation 'wpa\_keycloak.service'.

```
[root@ip-172-31-25-248 keycloak-9.0.0]# systemctl status wpa_keycloak.service
```

Unit wpa\_keycloak.service could not be found.

```
[root@ip-172-31-25-248 keycloak-9.0.0]# systemctl unmask
```

Too few arguments.

```
[root@ip-172-31-25-248 keycloak-9.0.0]# file /etc/systemd/system/keycloak.service
```

/etc/systemd/system/keycloak.service: empty

```
[root@ip-172-31-25-248 keycloak-9.0.0]# file /lib/systemd/system/keycloak.service
```

/lib/systemd/system/keycloak.service: cannot open (No such file or directory)

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak ./bin/jboss-cli.sh --file=config.cli
```

File /opt/keycloak-9.0.0/config.cli doesn't exist.

```
[root@ip-172-31-25-248 keycloak-9.0.0]# cat > /etc/systemd/system/keycloak.service
```

```
^C
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# ls -la
```

total 500

drwxr-xr-x. 10 keycloak keycloak 197 Feb 17 2020 .

drwxr-xr-x. 3 root root 57 May 8 15:12 ..

drwxr-x--x. 3 keycloak keycloak 4096 May 8 15:12 bin

drwxr-xr-x. 7 keycloak keycloak 92 May 8 15:12 docs

drwxr-x--x. 5 keycloak keycloak 50 Feb 17 2020 domain

drwx-----. 2 keycloak keycloak 6 Feb 17 2020 .installation

-rw-r--r--. 1 keycloak keycloak 489207 Feb 17 2020 jboss-modules.jar

-rw-r--r--. 1 keycloak keycloak 11358 Feb 17 2020 LICENSE.txt

drwxr-xr-x. 3 keycloak keycloak 39 May 8 15:12 modules

drwx-----. 8 keycloak keycloak 91 May 8 15:16 standalone

drwxr-xr-x. 5 keycloak keycloak 76 May 8 15:12 themes

-rw-r--r--. 1 keycloak keycloak 25 Jan 30 2020 version.txt

drwxr-xr-x. 2 keycloak keycloak 42 May 8 15:12 welcome-content

```
[root@ip-172-31-25-248 keycloak-9.0.0]# pwd
```

/opt/keycloak-9.0.0

```

[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl start keycloak
Failed to start keycloak.service: Unit is masked.
[root@ip-172-31-25-248 keycloak-9.0.0]# systemctl unmask keycloak.service
Removed symlink /etc/systemd/system/keycloak.service.
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl start keycloak
Failed to start keycloak.service: Unit not found.
[root@ip-172-31-25-248 keycloak-9.0.0]# systemctl status keycloak
Unit keycloak.service could not be found.
[root@ip-172-31-25-248 keycloak-9.0.0]# cat > /etc/systemd/system/keycloak.service
^C
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload [root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl start keycloak
Failed to start keycloak.service: Unit is masked.
[root@ip-172-31-25-248 keycloak-9.0.0]# systemctl unmask keycloak.service
Removed symlink /etc/systemd/system/keycloak.service.
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload
[root@ip-172-31-25-248 keycloak-9.0.0]# systemctl status keycloak
Unit keycloak.service could not be found.
[root@ip-172-31-25-248 keycloak-9.0.0]# install keycloak.service
install: missing destination file operand after 'keycloak.service'
Try 'install --help' for more information.
[root@ip-172-31-25-248 keycloak-9.0.0]# ./jboss-cli.[sh|bat] --file=keycloak-install.cli
-bash: bat]: command not found
-bash: ./jboss-cli.[sh: No such file or directory
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak ./jboss-cli.[sh|bat] --file=keycloak-install.cli
-bash: bat]: command not found
sudo: ./jboss-cli.[sh: command not found
[root@ip-172-31-25-248 keycloak-9.0.0]# ./jboss-cli.sh --file=keycloak-install.cli
-bash: ./jboss-cli.sh: No such file or directory
[root@ip-172-31-25-248 keycloak-9.0.0]# pwd
/opt/keycloak-9.0.0
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo -u keycloak ./jboss-cli.sh --file=keycloak-install.cli
sudo: unknown user: keycloak
sudo: unable to initialize policy plugin
[root@ip-172-31-25-248 keycloak-9.0.0]# ls -la
total 500
drwxr-xr-x. 10 keycloak keycloak 197 Feb 17 2020 .
drwxr-xr-x. 3 root root 57 May 8 15:12 ..
drwxr-x--x. 3 keycloak keycloak 4096 May 8 15:12 bin
drwxr-xr-x. 7 keycloak keycloak 92 May 8 15:12 docs
drwxr-x--x. 5 keycloak keycloak 50 Feb 17 2020 domain
drwx-----. 2 keycloak keycloak 6 Feb 17 2020 .installation
-rw-r--r--. 1 keycloak keycloak 489207 Feb 17 2020 jboss-modules.jar
-rw-r--r--. 1 keycloak keycloak 11358 Feb 17 2020 LICENSE.txt
drwxr-xr-x. 3 keycloak keycloak 39 May 8 15:12 modules
drwx-----. 8 keycloak keycloak 91 May 8 15:16 standalone
drwxr-xr-x. 5 keycloak keycloak 76 May 8 15:12 themes
-rw-r--r--. 1 keycloak keycloak 25 Jan 30 2020 version.txt
drwxr-xr-x. 2 keycloak keycloak 42 May 8 15:12 welcome-content
[root@ip-172-31-25-248 keycloak-9.0.0]# pwd
/opt/keycloak-9.0.0
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload

```



```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl start keycloak
Failed to start keycloak.service: Unit not found.
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo system status keycloak
sudo: system: command not found
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl status keycloak
Unit keycloak.service could not be found.
[root@ip-172-31-25-248 keycloak-9.0.0]# /etc/systemd/system/keycloak.service
-bash: /etc/systemd/system/keycloak.service: No such file or directory
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo cat > /etc/systemd/system/keycloak.service <<EOF
>
```

```
> [Unit]
> Description=Jboss Application Server
> After=network.target
>
> [Service]
> Type=idle
> User=keycloak
> Group=keycloak
> ExecStart=/opt/keycloak-9.0.0/bin/standalone.sh -b 0.0.0.0
> TimeoutStartSec=600
> TimeoutStopSec=600
>
> [Install]
> WantedBy=multi-user.target
> EOF
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl daemon-reload
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl start keycloak
```

```
sudo: systemctl: command not found
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl start keycloak
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# sudo systemctl status keycloak
```

```
● keycloak.service - Jboss Application Server
```

```
Loaded: loaded (/etc/systemd/system/keycloak.service; disabled; vendor preset: disabled)
```

```
Active: active (running) since Sat 2021-05-08 16:02:48 UTC; 7s ago
```

```
Main PID: 9492 (standalone.sh)
```

```
CGroup: /system.slice/keycloak.service
```

```
├─9492 /bin/sh /opt/keycloak-9.0.0/bin/standalone.sh -b 0.0.0.0
```

```
└─9543 java -D[Standalone] -server -Xms64m -Xmx512m -XX:MetaspaceS...
```

```
May 08 16:02:54 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:54 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:54 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:54 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:54 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:55 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:55 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:55 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:55 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
May 08 16:02:55 ip-172-31-25-248.us-west-1.compute.internal standalone.sh[9492]: ...
```

```
Hint: Some lines were ellipsized, use -l to show in full.
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]# history
```

```
1 cd /opt
```

```
2 yum install wget -y
```

```
3 sudo wget https://downloads.jboss.org/keycloak/9.0.0/keycloak-9.0.0.tar.gz
```

```
4 sudo tar xzf keycloak-9.0.0.tar.gz
```

```
5 sudo groupadd -r keycloak
6 sudo useradd -m -d /var/lib/keycloak -s /sbin/nologin -r -g keycloak keycloak
7 sudo chown keycloak: -R keycloak-9.0.0
8 cd keycloak-9.0.0
9 sudo -u keycloak chmod 700 standalone
10 sudo yum install java-1.8.0-openjdk-devel
11 openssl rand -hex 20 # generate a password to use for admin user
12 sudo -u keycloak ./bin/add-user-keycloak.sh --user admin --password KEYCLOAKPASS --realm
master
13 sudo -u keycloak ./bin/jboss-cli.sh 'embed-server,/subsystem=undertow/server=default-
server/http-listener=default:write-attribute(name=proxy-address-forwarding,value=true)'
14 sudo -u keycloak ./bin/jboss-cli.sh 'embed-server,/socket-binding-group=standard-
sockets/socket-binding=proxy-https:add(port=443)'
15 sudo -u keycloak ./bin/jboss-cli.sh 'embed-server,/subsystem=undertow/server=default-
server/http-listener=default:write-attribute(name=redirect-socket,value=proxy-https)'
16 sudo systemctl daemon-reload
17 sudo systemctl start keycloak
18 sudo cat > /etc/systemd/system/keycloak.service
19 cat > /etc/systemd/system/keycloak.service
20 sudo systemctl daemon-reload
21 sudo systemctl start keycloak
22 systemctl wpa_keycloak.service
23 systemctl status wpa_keycloak.service
24 systemctl unmask
25 file /etc/systemd/system/keycloak.service
26 file /lib/systemd/system/keycloak.service
27 sudo -u keycloak ./bin/jboss-cli.sh --file=config.cli
28 cat > /etc/systemd/system/keycloak.service
29 ls -la
30 pwd
31 sudo systemctl daemon-reload
32 sudo systemctl start keycloak
33 systemctl unmask keycloak.service
34 sudo systemctl daemon-reload
35 sudo systemctl start keycloak
36 systemctl status keycloak
37 cat > /etc/systemd/system/keycloak.service
38 sudo systemctl daemon-reload
39 sudo systemctl start keycloak
40 systemctl unmask keycloak.service
41 sudo systemctl daemon-reload
42 systemctl status keycloak
43 install keycloak.service
44 ./jboss-cli.[sh|bat] --file=keycloak-install.cli
45 sudo -u keycloak ./jboss-cli.[sh|bat] --file=keycloak-install.cli
46 ./jboss-cli.sh --file=keycloak-install.cli
47 pwd
48 sudo -u keycloak ./jboss-cli.sh --file=keycloak-install.cli
49 ls -la
50 pwd
51 sudo systemctl daemon-reload
52 sudo systemctl start keycloak
53 sudo system status keycloak
54 sudo systemctl status keycloak
```

```
55 /etc/systemd/system/keycloak.service
56 sudo cat > /etc/systemd/system/keycloak.service <<EOF
```

[Unit]

Description=Jboss Application Server

After=network.target

[Service]

Type=idle

User=keycloak

Group=keycloak

ExecStart=/opt/keycloak-9.0.0/bin/standalone.sh -b 0.0.0.0

TimeoutStartSec=600

TimeoutStopSec=600

[Install]

WantedBy=multi-user.target

EOF

```
57 sudo systemctl daemon-reload
```

```
58 sudo systemctl start keycloak
```

```
59 sudo systemctl start keycloak
```

```
60 sudo systemctl status keycloak
```

```
61 history
```

```
[root@ip-172-31-25-248 keycloak-9.0.0]#
```