Setup Apache Tomcat 8.5.x (CentOS 7.x)

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

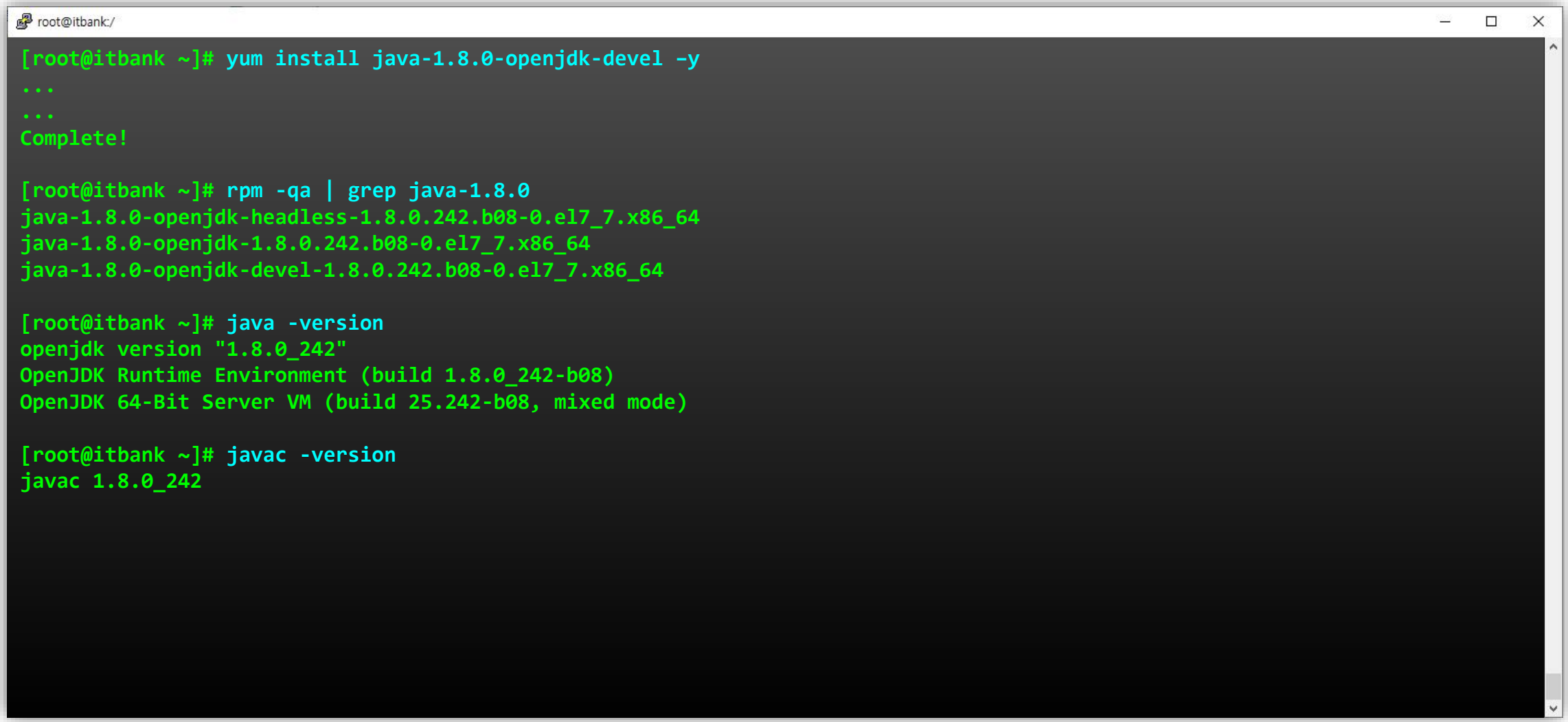
1. CentOS 에서 네트워크 설정과 DNS 설정 확인하기

root@itbank:/

```
[root@itbank bin]# ifconfig | head -2
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.25.100  netmask 255.255.255.0  broadcast 192.168.25.255

[root@itbank bin]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         192.168.25.2    0.0.0.0         UG    0      0        0 ens33


[root@itbank ~]# ping google.com -c 4

PING google.com (172.217.175.110) 56(84) bytes of data.
64 bytes from nrt20s21-in-f14.1e100.net (172.217.175.110): icmp_seq=1 ttl=128 time=36.3 ms
64 bytes from nrt20s21-in-f14.1e100.net (172.217.175.110): icmp_seq=2 ttl=128 time=36.5 ms
64 bytes from nrt20s21-in-f14.1e100.net (172.217.175.110): icmp_seq=3 ttl=128 time=36.4 ms
64 bytes from nrt20s21-in-f14.1e100.net (172.217.175.110): icmp_seq=4 ttl=128 time=36.4 ms

--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3013ms
rtt min/avg/max/mdev = 36.381/36.466/36.591/0.078 ms
```

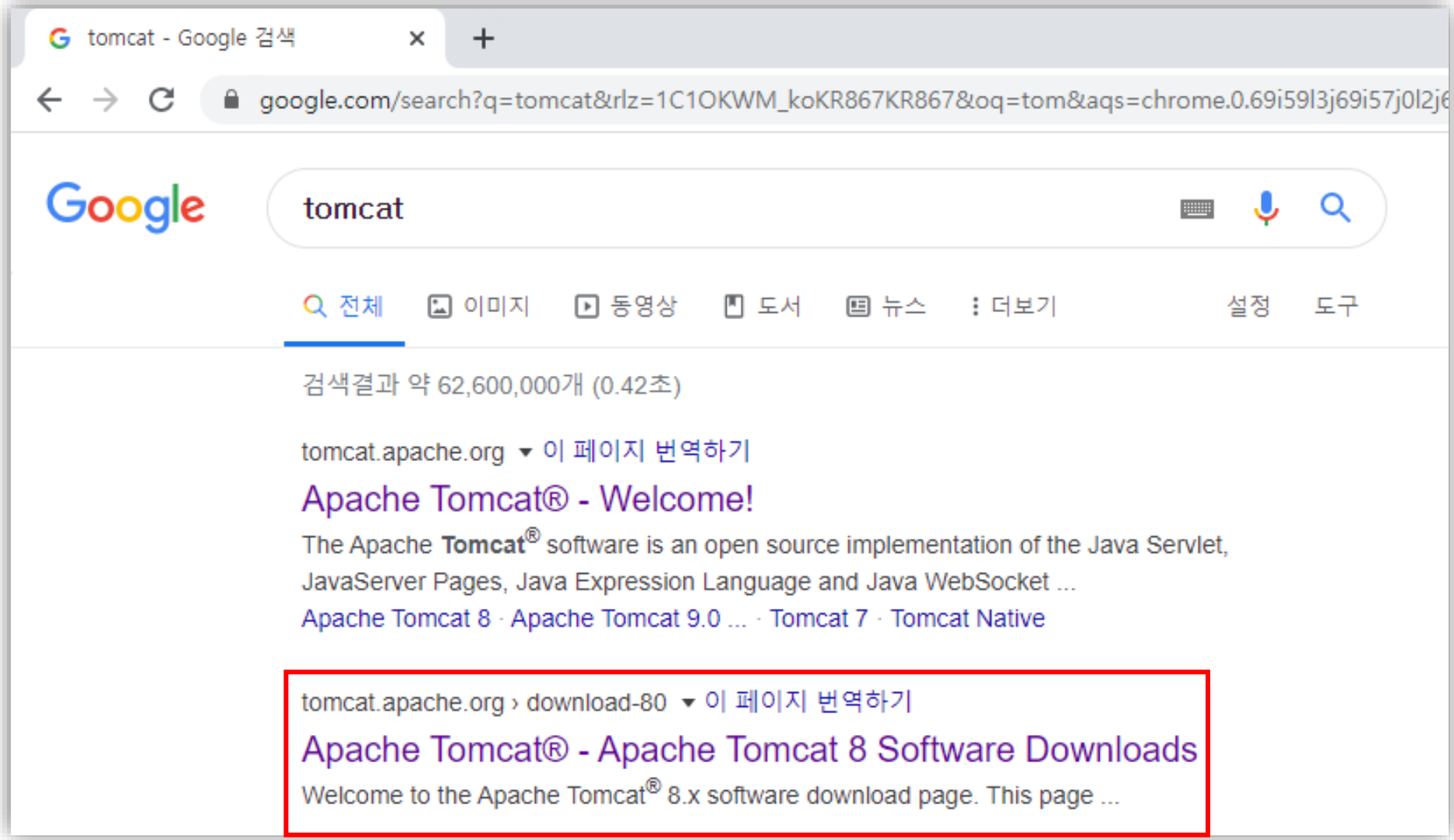
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

2. JRE, JDK 설치 및 작동 확인



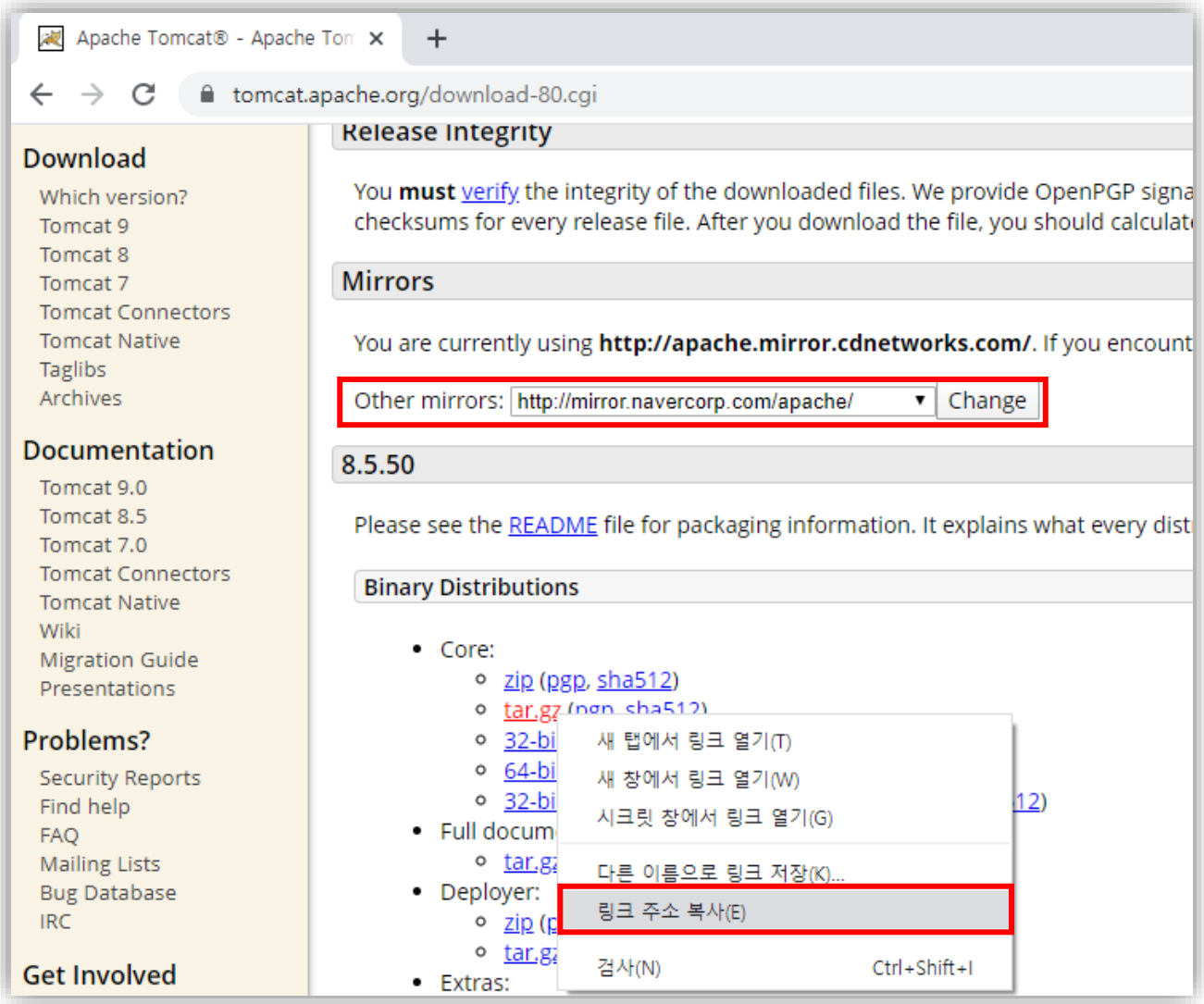
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

3. google.com 에서 tomcat 검색하여 Tomcat 8 Downloads 페이지로 이동



Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

4. Tomcat 8 최신버전의 tar.gz (리눅스용 Core) 우클릭 후 링크 주소 복사

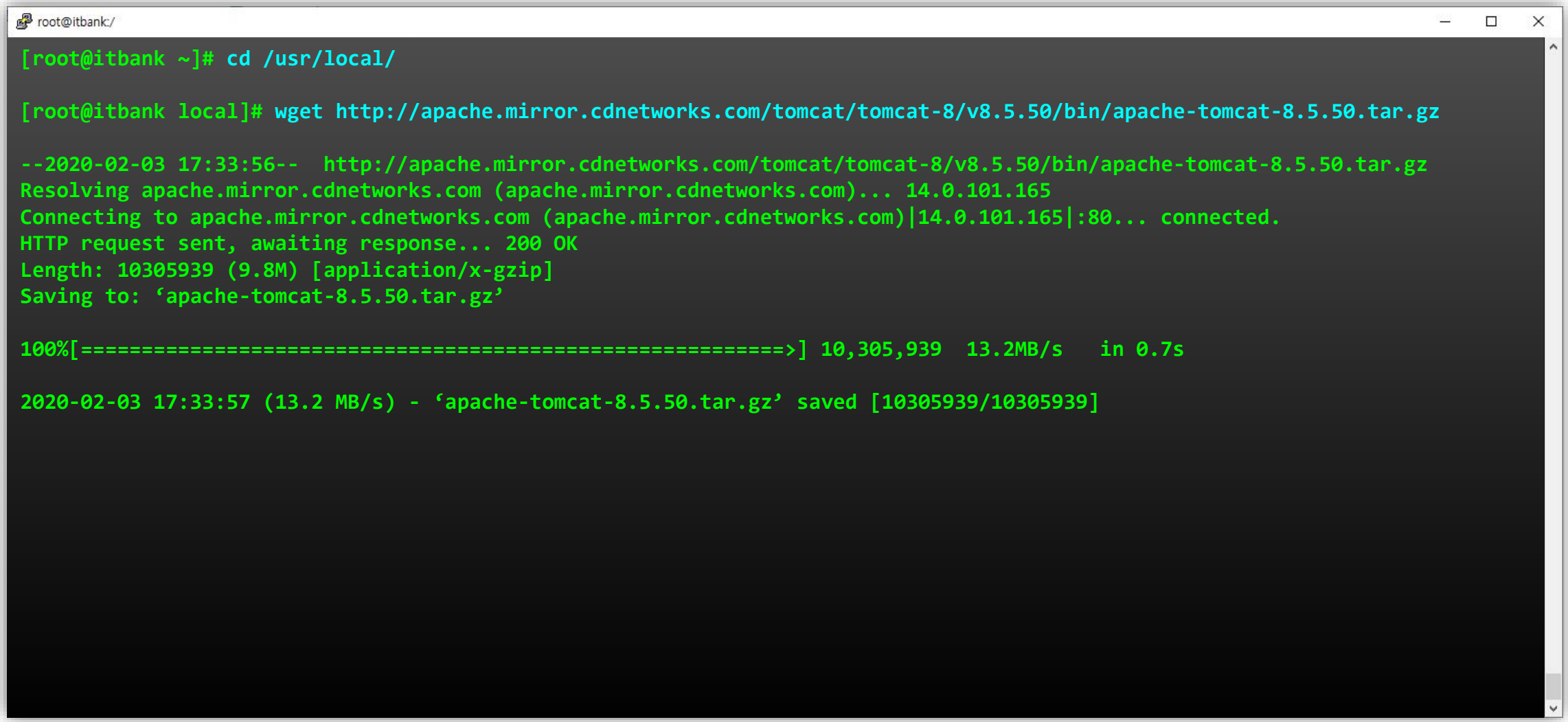


속도가 너무 느리면

Mirrors를 navercorp로 변경 후 다운받자

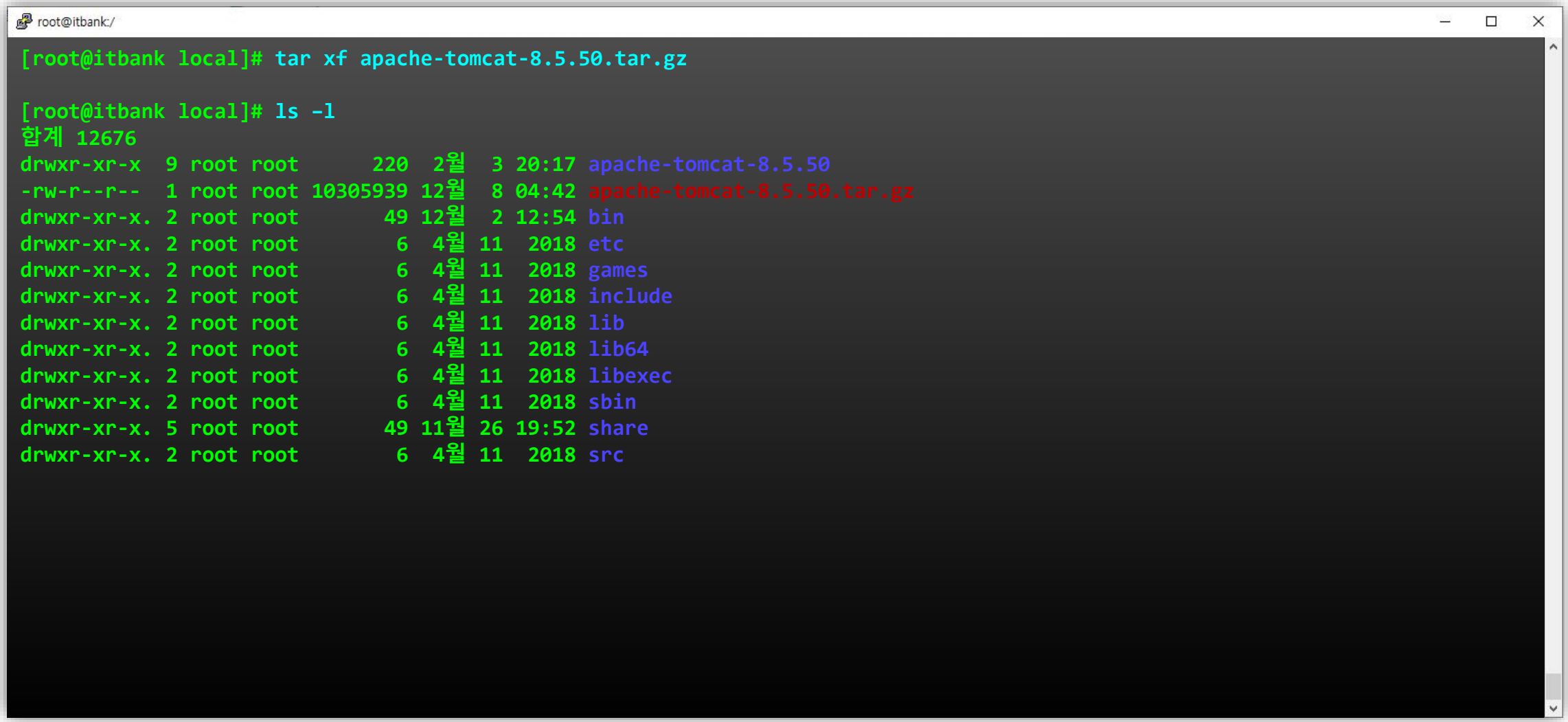
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

5. 복사해 둔 링크 주소를 CentOS 에서 다운로드 (wget)



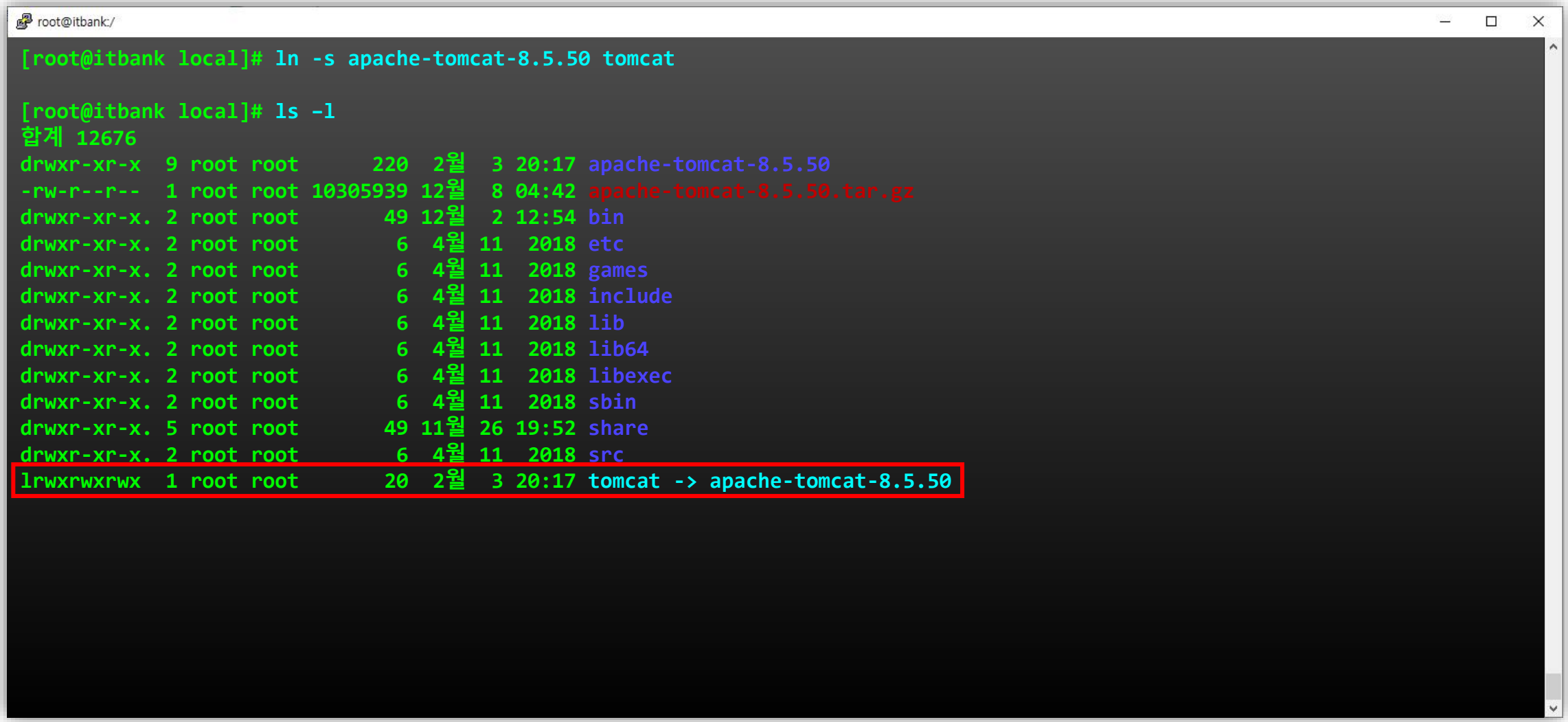
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

6. 압축 해제 및 확인



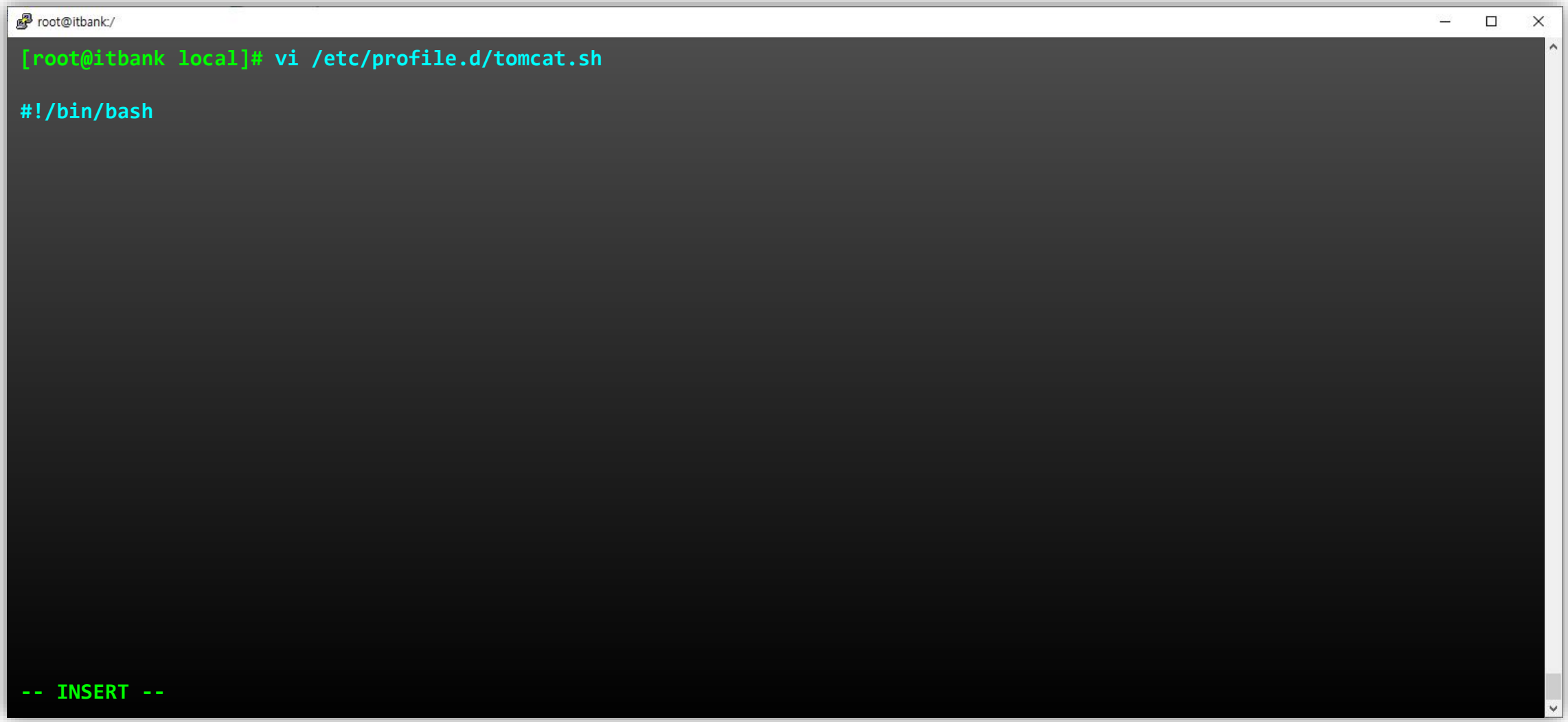
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

7. 심볼릭 링크 생성



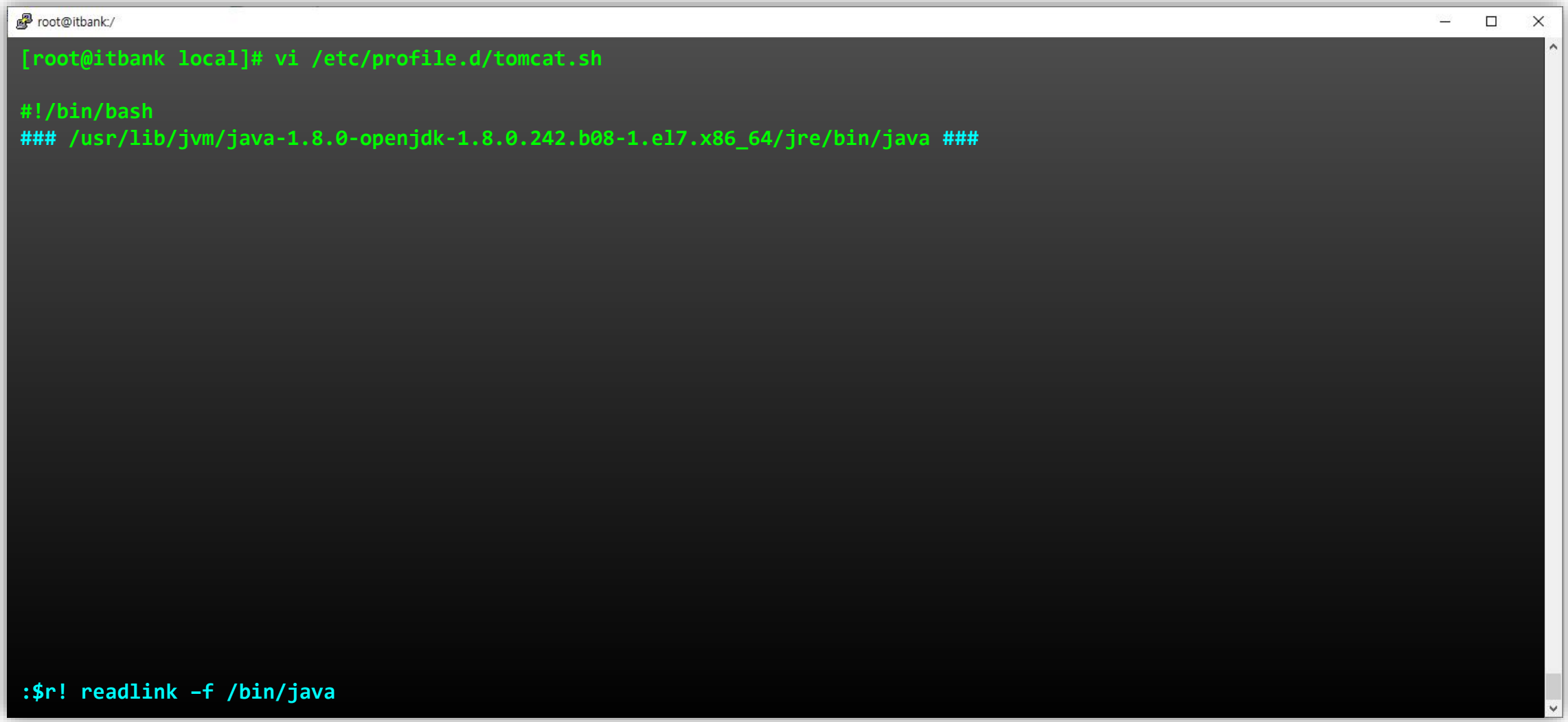
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

8. 환경 변수 설정 (1: 톰캣 환경변수 전용 파일 만들기)



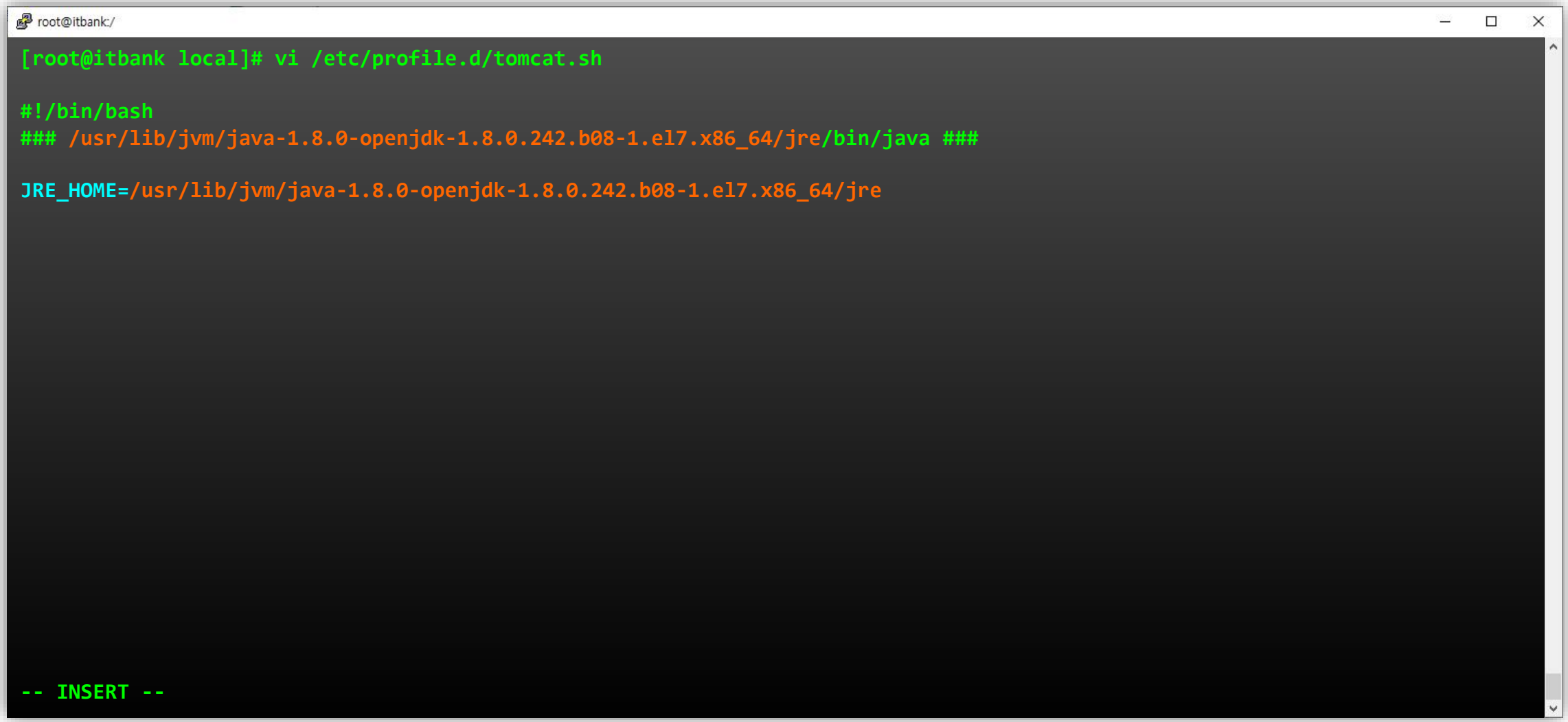
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

8. 환경 변수 설정 (2: java 실행파일의 경로 가져와서 주석 처리하기)



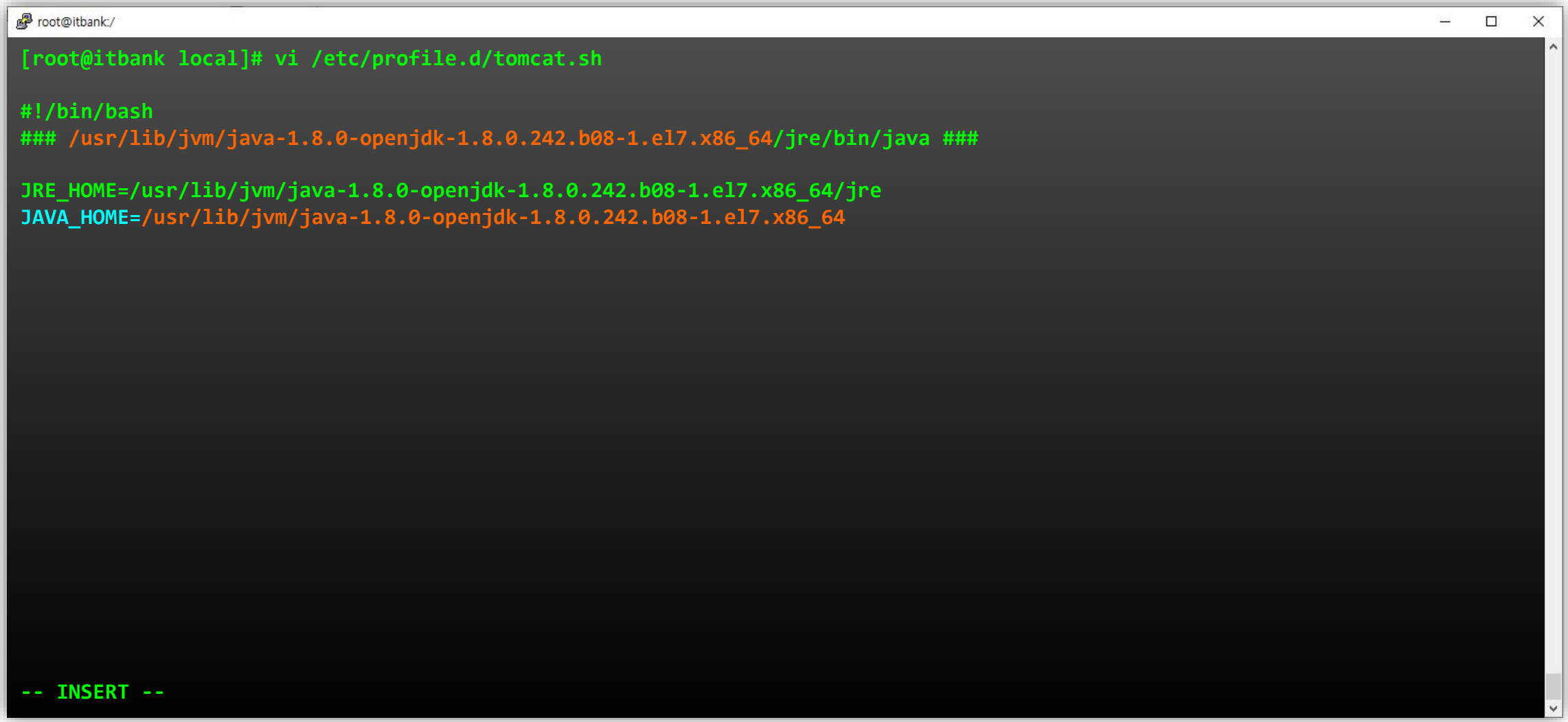
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

8. 환경 변수 설정 (3: JRE_HOME 설정, 가져온 경로에서 jre까지 복사)



Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

8. 환경 변수 설정 (4: JAVA_HOME 설정, 가져온 경로에서 64까지 복사)



Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

8. 환경 변수 설정 (5: 나머지 작성하고 저장 후 종료)

root@itbank:/

```
[root@itbank local]# vi /etc/profile.d/tomcat.sh

#!/bin/bash
### /usr/lib/jvm/java-1.8.0-openjdk-1.8.0.242.b08-1.el7.x86_64/jre/bin/java ###

JRE_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.242.b08-1.el7.x86_64/jre
JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.242.b08-1.el7.x86_64
CATALINA_HOME=/usr/local/tomcat
CLASSPATH=$JAVA_HOME/bin:$CATALINA_HOME/bin
PATH=$PATH:$JAVA_HOME/bin:$CATALINA_HOME/bin

export JRE_HOME JAVA_HOME CATALINA_HOME CLASSPATH PATH









:wq
```

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

9. 환경 변수 확인하고 적용하기 / Tomcat 기동 여부 확인

root@itbank:/

```
[root@itbank local]# cat -n /etc/profile.d/tomcat.sh
     1  #!/bin/bash
     2  ### /usr/lib/jvm/java-1.8.0-openjdk-1.8.0.242.b08-1.el7.x86_64/jre/bin/java ###
     3
     4  JRE_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.242.b08-1.el7.x86_64/jre
     5  JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.242.b08-1.el7.x86_64
     6  CATALINA_HOME=/usr/local/tomcat
     7  CLASSPATH=$JAVA_HOME/bin:$CATALINA_HOME/bin
     8  PATH=$PATH:$JAVA_HOME/bin:$CATALINA_HOME/bin
     9
    10  export JRE_HOME JAVA_HOME CATALINA_HOME CLASSPATH PATH
    11

[root@itbank local]# source /etc/profile.d/tomcat.sh

[root@itbank local]# echo $CATALINA_HOME
/usr/local/tomcat

[root@itbank local]# cd tomcat/bin
[root@itbank bin]# ./startup.sh
...
Tomcat started.

[root@itbank bin]# netstat -lntup | grep :8080
tcp6       0      0 :::8080                 :::*                    LISTEN      21699/java
```

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

10. 방화벽에 예외로 등록 및 포트포워딩 (클라이언트가 80포트로 접근하면 내부에서 8080으로 요청을 전달)

root@itbank:/

```
[root@itbank bin]# firewall-cmd --permanent --zone=public --add-port=8080/tcp
Success
[root@itbank bin]# firewall-cmd --permanent --zone=public --add-port=80/tcp
Success
[root@itbank bin]# firewall-cmd --permanent --zone=public --add-forward-port=port=80:proto=tcp:toport=8080
Success
[root@itbank bin]# firewall-cmd --reload
success

[root@itbank bin]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: ens33
  sources:
  services: dhcpv6-client ssh
  ports: 8080/tcp 80/tcp
  protocols:
  masquerade: no
  forward-ports: port=80:proto=tcp:toport=8080:toaddr=
  source-ports:
  icmp-blocks:
  rich rules:
```

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

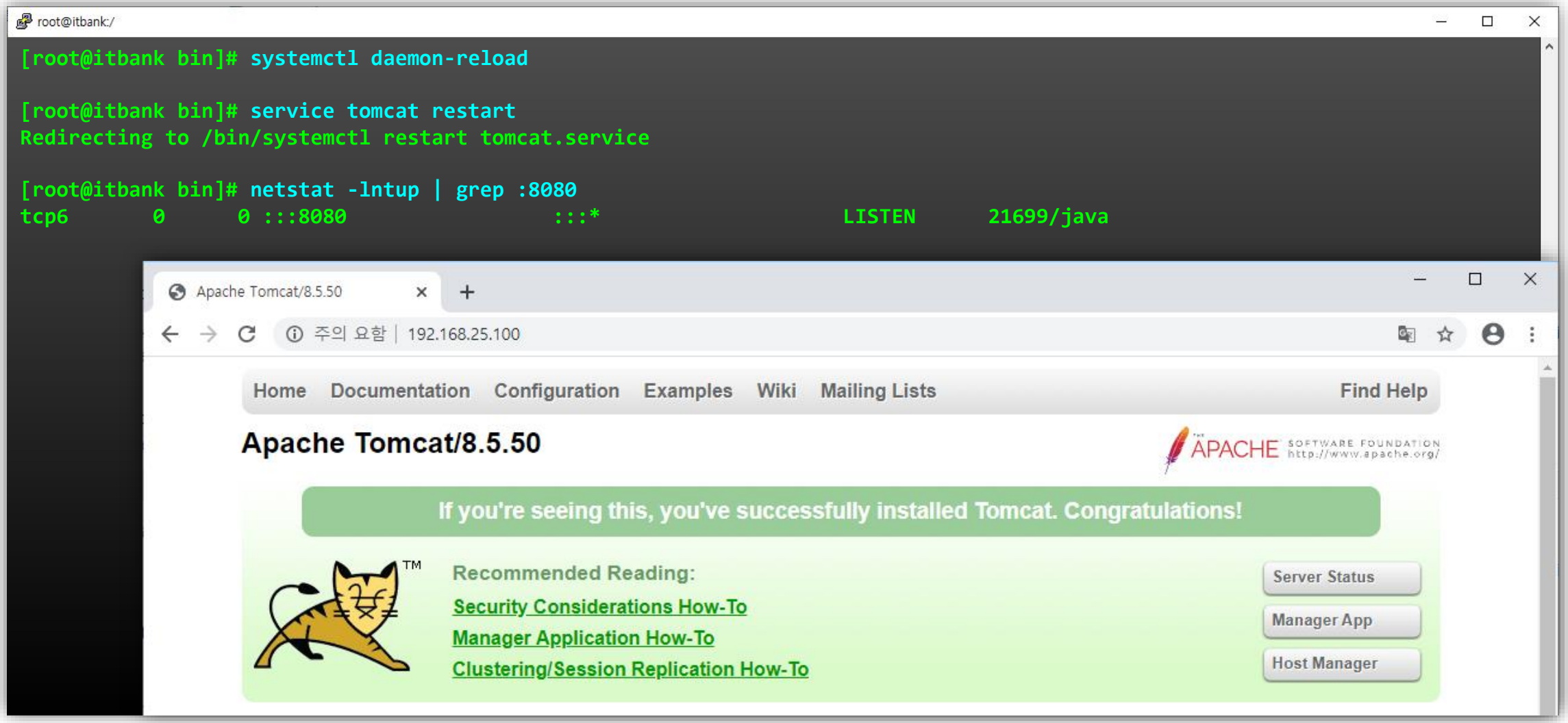
11. 서버 시작 시 자동으로 시작하기 위해 서비스 등록

root@itbank:/

```
[root@itbank bin]# vi /etc/systemd/system/tomcat.service
[root@itbank bin]# cat -n /etc/systemd/system/tomcat.service
     1
     2      [Unit]
     3      Description=tomcat 8.5
     4      After=network.target syslog.target
     5
     6      [Service]
     7      Type=forking
     8      User=root
     9      Group=root
    10      ExecStart=/usr/local/tomcat/bin/startup.sh
    11      ExecStop=/usr/local/tomcat/bin/shutdown.sh
    12
    13      [Install]
    14      WantedBy=multi-user.target
    15


[root@itbank bin]# systemctl enable tomcat.service
Created symlink from /etc/systemd/system/multi-user.target.wants/tomcat.service to /etc/systemd/system/tomcat.service
```

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

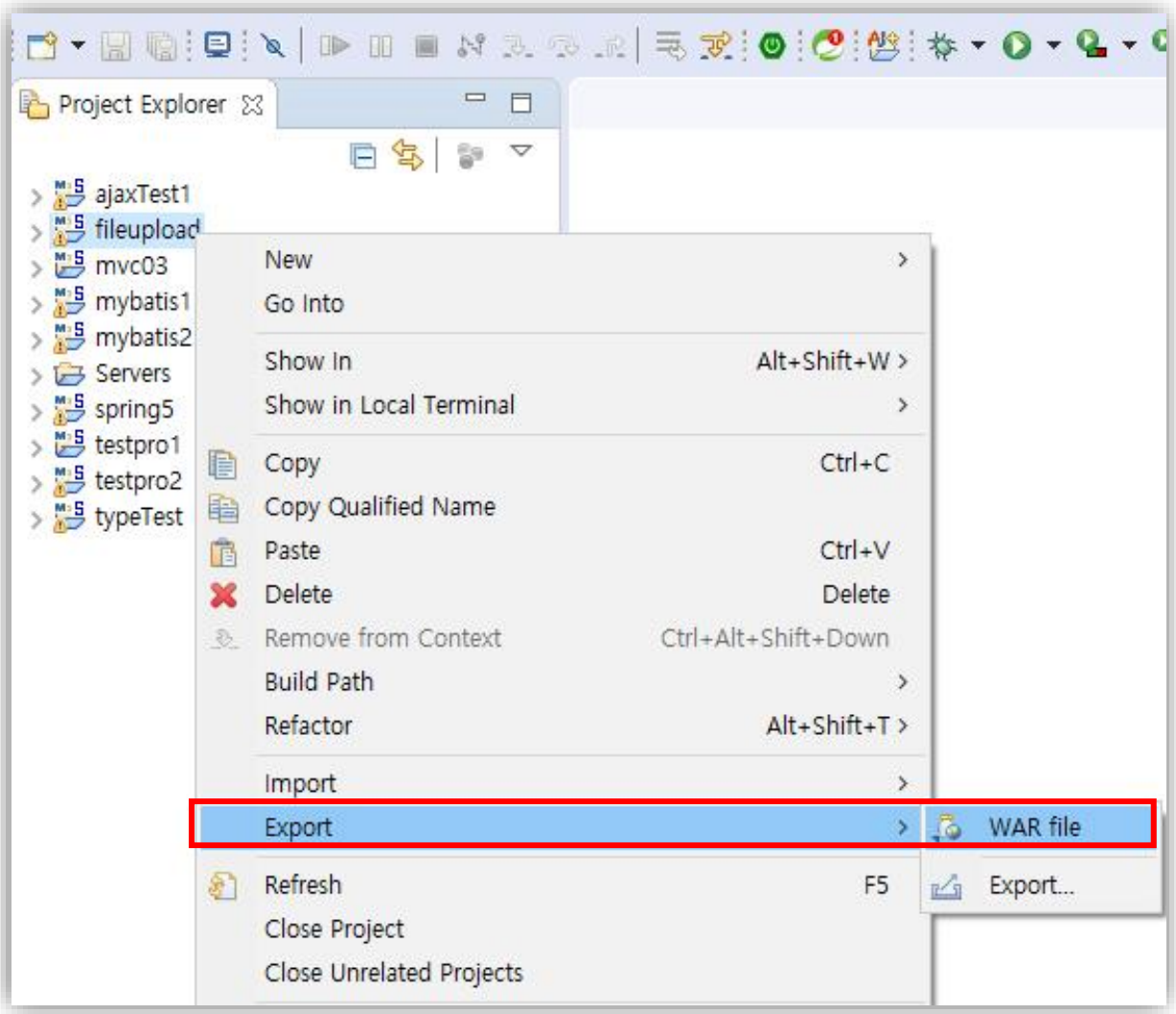
12. 서비스 등록 확인



Export Spring Project Web Application aRchive (WAR)

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

1. 이클립스에서 스프링 프로젝트 Export 하기

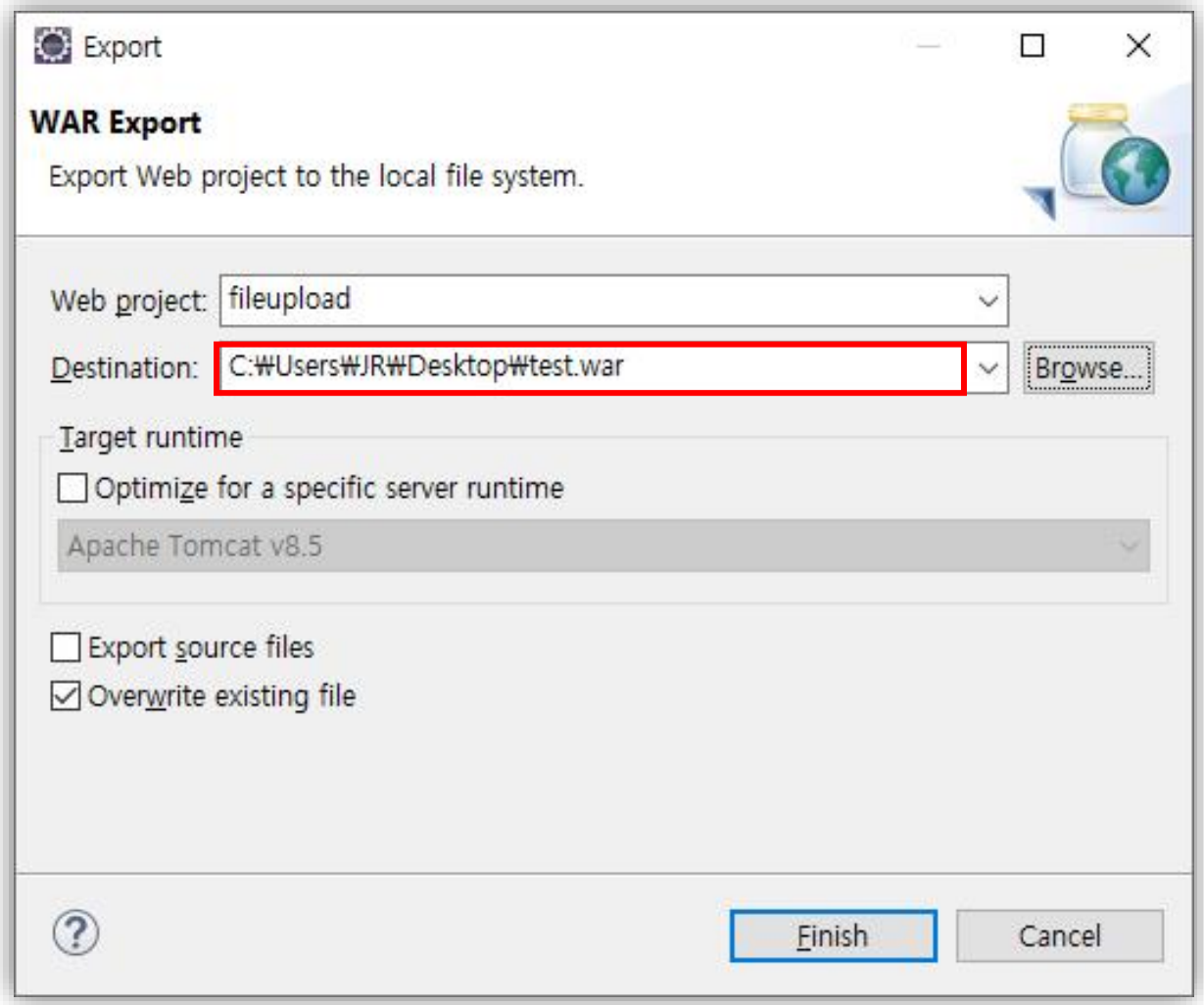


이클립스에서 원하는 프로젝트를 선택

우클릭 메뉴에서 Export – WAR 파일 선택

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

2. war 파일의 경로를 지정하고, Export

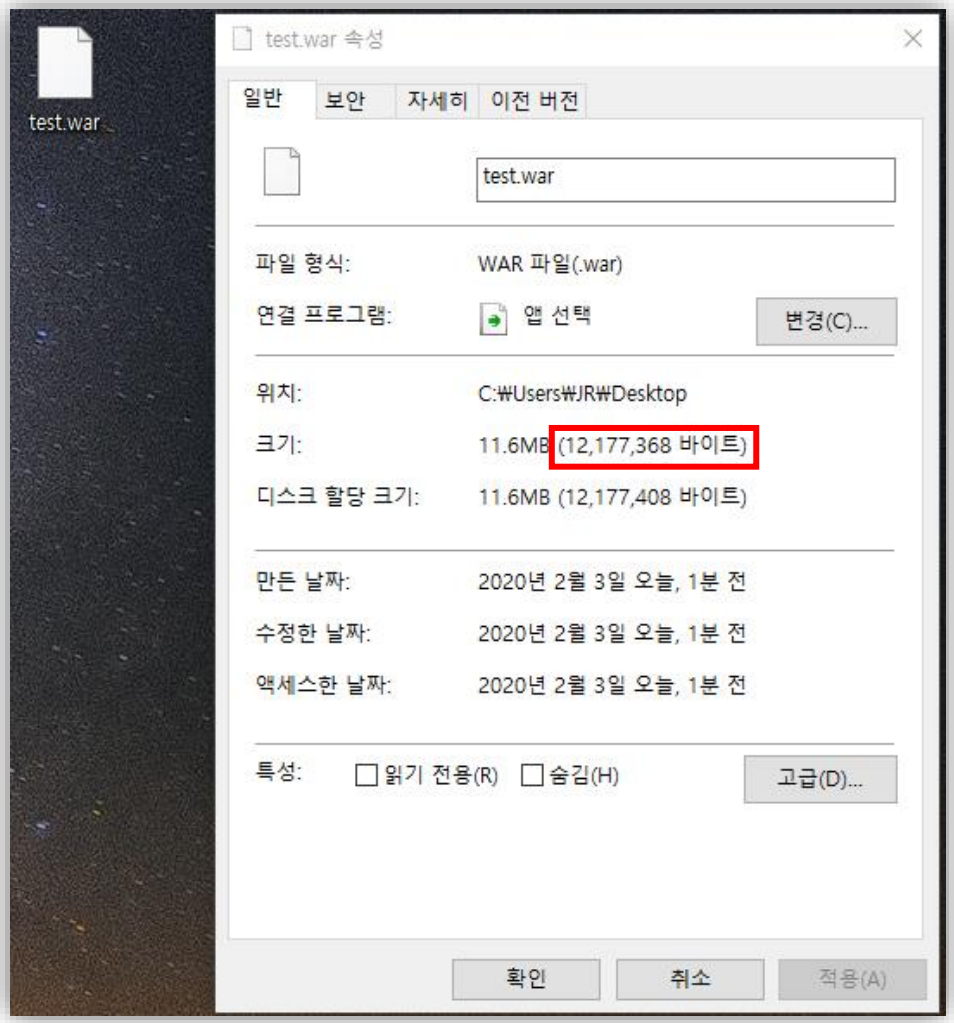


Destination에 경로와 파일이름 지정

Overwrite existing file 선택하면 덮어쓰기

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

3. 추출된 war 파일 확인



생성된 파일의 이름과 용량을 확인해두기

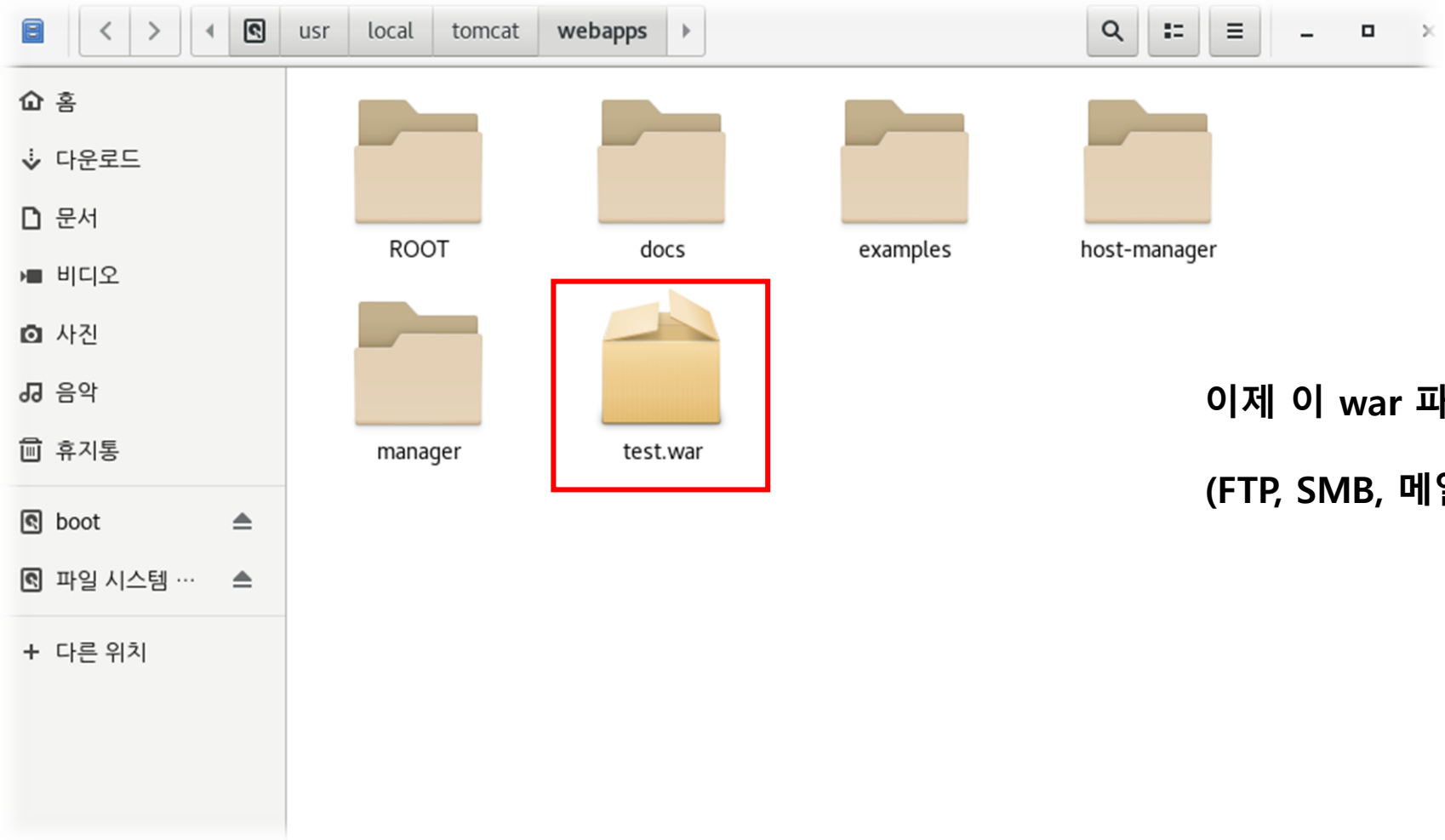
이제 이 파일을 서버에 업로드한다

(FTP, SMB 등의 방법으로 업로드하기)

Deploy WAR in Tomcat

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

1. 리눅스 서버에 파일 업로드 (경로 : $CATALINA_HOME/webapps/)



이제 이 war 파일을 서버에 업로드한다

(FTP, SMB, 메일 등의 방법으로 업로드하기)

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

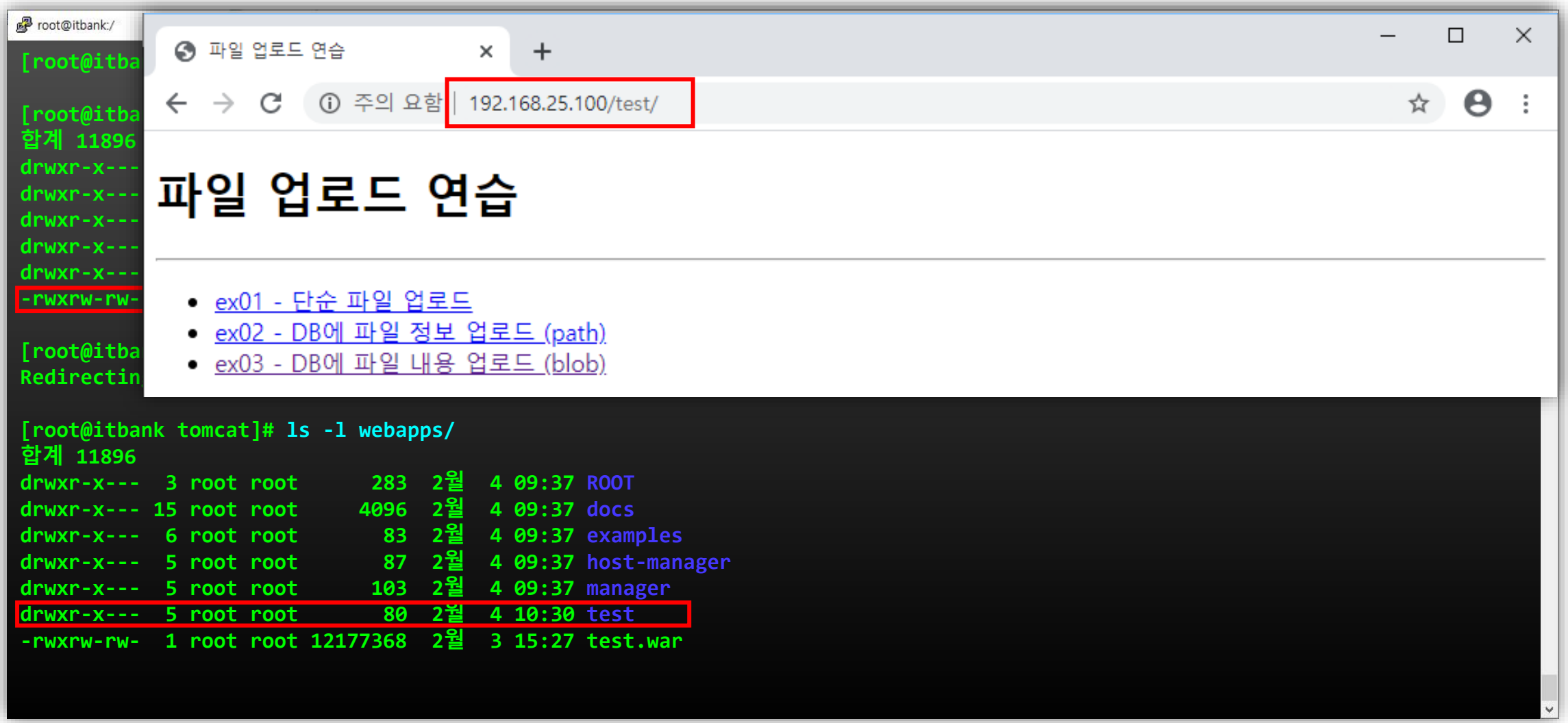
2. 터미널에서 확인하고 서비스 재시작

root@itbank:/

```
[root@itbank bin]# cd $CATALINA_HOME

[root@itbank tomcat]# ls -l webapps/
합계 11896
drwxr-x---  3 root root      283  2월  4 09:37 ROOT
drwxr-x--- 15 root root     4096  2월  4 09:37 docs
drwxr-x---  6 root root       83  2월  4 09:37 examples
drwxr-x---  5 root root       87  2월  4 09:37 host-manager
drwxr-x---  5 root root      103  2월  4 09:37 manager
-rwxrw-rw-  1 root root 12177368  2월  3 15:27 test.war

[root@itbank tomcat]# service tomcat restart
Redirecting to /bin/systemctl restart tomcat.service

[root@itbank tomcat]# ls -l webapps/
합계 11896
drwxr-x---  3 root root      283  2월  4 09:37 ROOT
drwxr-x--- 15 root root     4096  2월  4 09:37 docs
drwxr-x---  6 root root       83  2월  4 09:37 examples
drwxr-x---  5 root root       87  2월  4 09:37 host-manager
drwxr-x---  5 root root      103  2월  4 09:37 manager
drwxr-x---  5 root root       80  2월  4 10:30 test
-rwxrw-rw-  1 root root 12177368  2월  3 15:27 test.war
```

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

3. 폴더이름으로 접근 (http://ServerName/folderName)



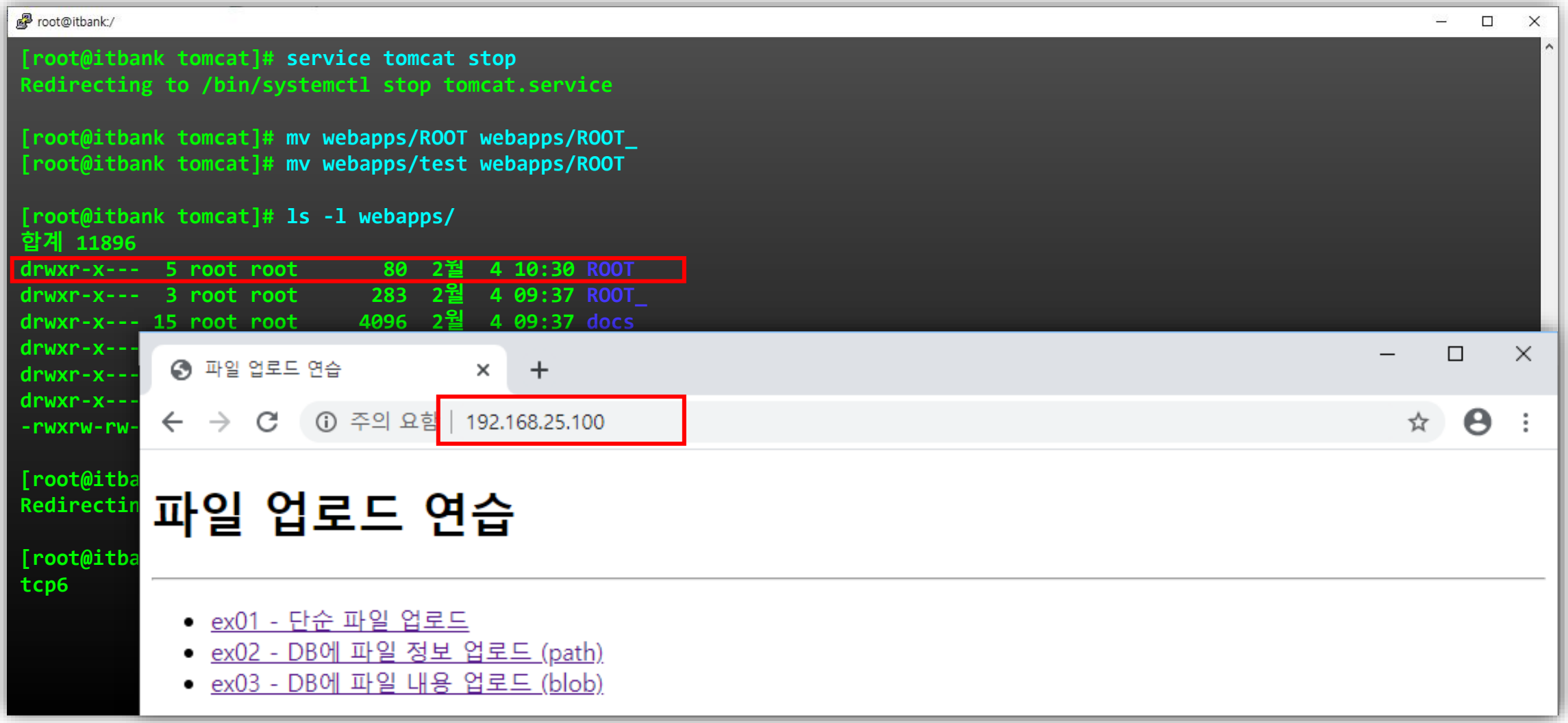
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

4. 서비스 재시작 후 압축 해제된 폴더의 이름이 ROOT 이면 최상위 경로로 접근 가능해진다

```
root@itbank:/
[root@itbank tomcat]# service tomcat stop
Redirecting to /bin/systemctl stop tomcat.service

[root@itbank tomcat]# mv webapps/ROOT webapps/ROOT_
[root@itbank tomcat]# mv webapps/test webapps/ROOT

[root@itbank tomcat]# ls -l webapps/
합계 11896
drwxr-x---  5 root root       80  2월  4 10:30 ROOT
drwxr-x---  3 root root      283  2월  4 09:37 ROOT_
drwxr-x--- 15 root root     4096  2월  4 09:37 docs
drwxr-x---  6 root root       83  2월  4 09:37 examples
drwxr-x---  5 root root       87  2월  4 09:37 host-manager
drwxr-x---  5 root root      103  2월  4 09:37 manager
-rwxrw-rw-  1 root root 12177368  2월  3 15:27 test.war

[root@itbank tomcat]# service tomcat restart
Redirecting to /bin/systemctl restart tomcat.service

[root@itbank tomcat]# netstat -lntup | grep :8080
tcp6       0      0 :::8080                 :::*                    LISTEN      11423/java
```

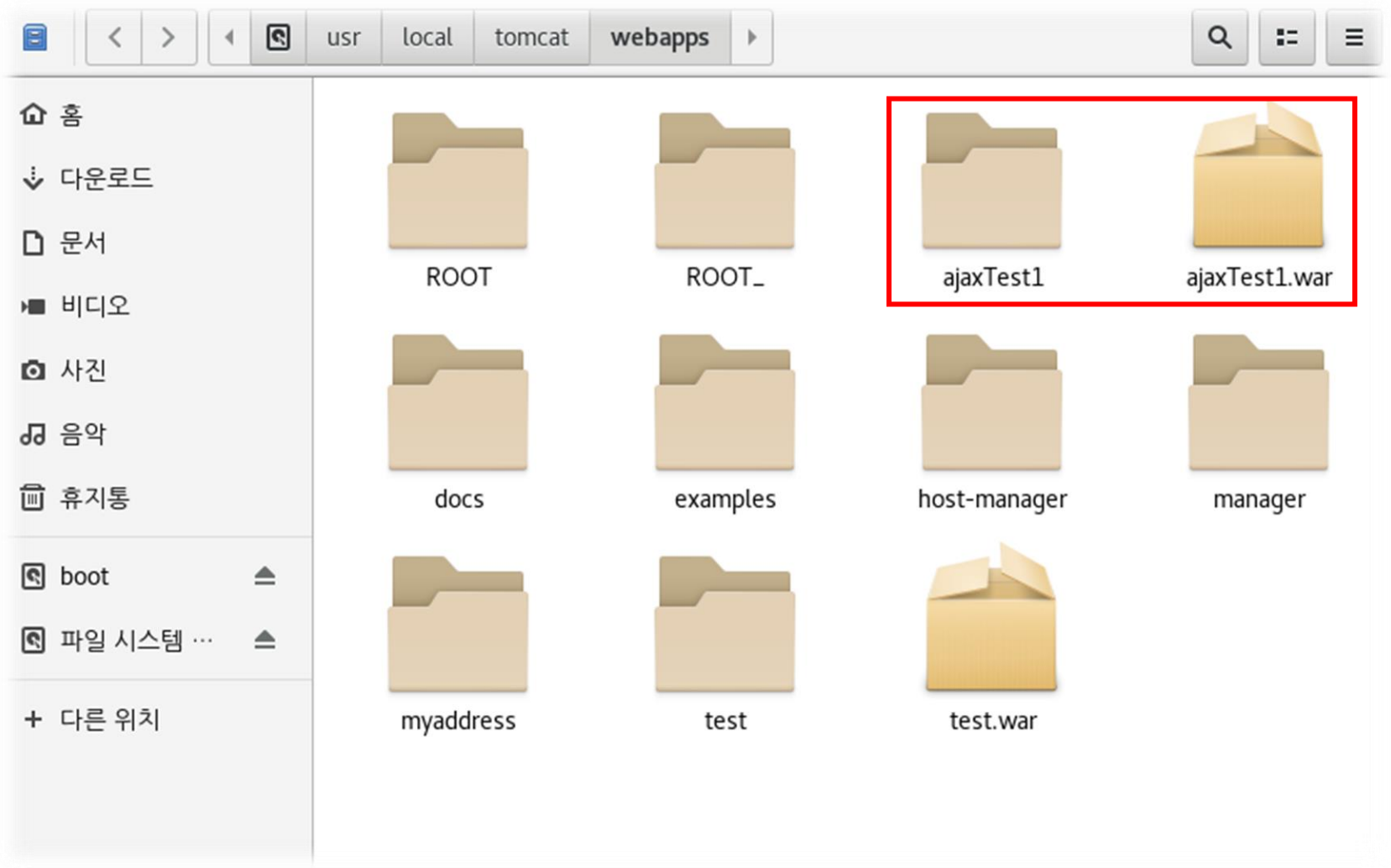
Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

5. 서버이름으로 접근 (http://ServerName)



Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

6. 추가 프로젝트 업로드 및 경로 설정 (server.xml)



Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

7. 상세 설정을 위해서는 $CATALINA_HOME/conf/server.xml 의 설정을 참조하기

root@itbank:/

```
[root@itbank tomcat]# cat -n conf/server.xml | tail -21
   147
   148        <Host name="localhost"  appBase="webapps"
   149              unpackWARs="true" autoDeploy="true">
   150
   151          <!-- SingleSignOn valve, share authentication between web applications
   152               Documentation at: /docs/config/valve.html -->
   153          <!--
   154          <Valve className="org.apache.catalina.authenticator.SingleSignOn" />
   155          -->
   156
   157          <!-- Access log processes all example.
   158               Documentation at: /docs/config/valve.html
   159               Note: The pattern used is equivalent to using pattern="common" -->
   160          <Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
   161                 prefix="localhost_access_log" suffix=".txt"
   162                 pattern="%h %l %u %t &amp;quot;%r&amp;quot; %s %b" />
   163
   164        </Host>
   165      </Engine>
   166    </Service>
   167  </Server>
```

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

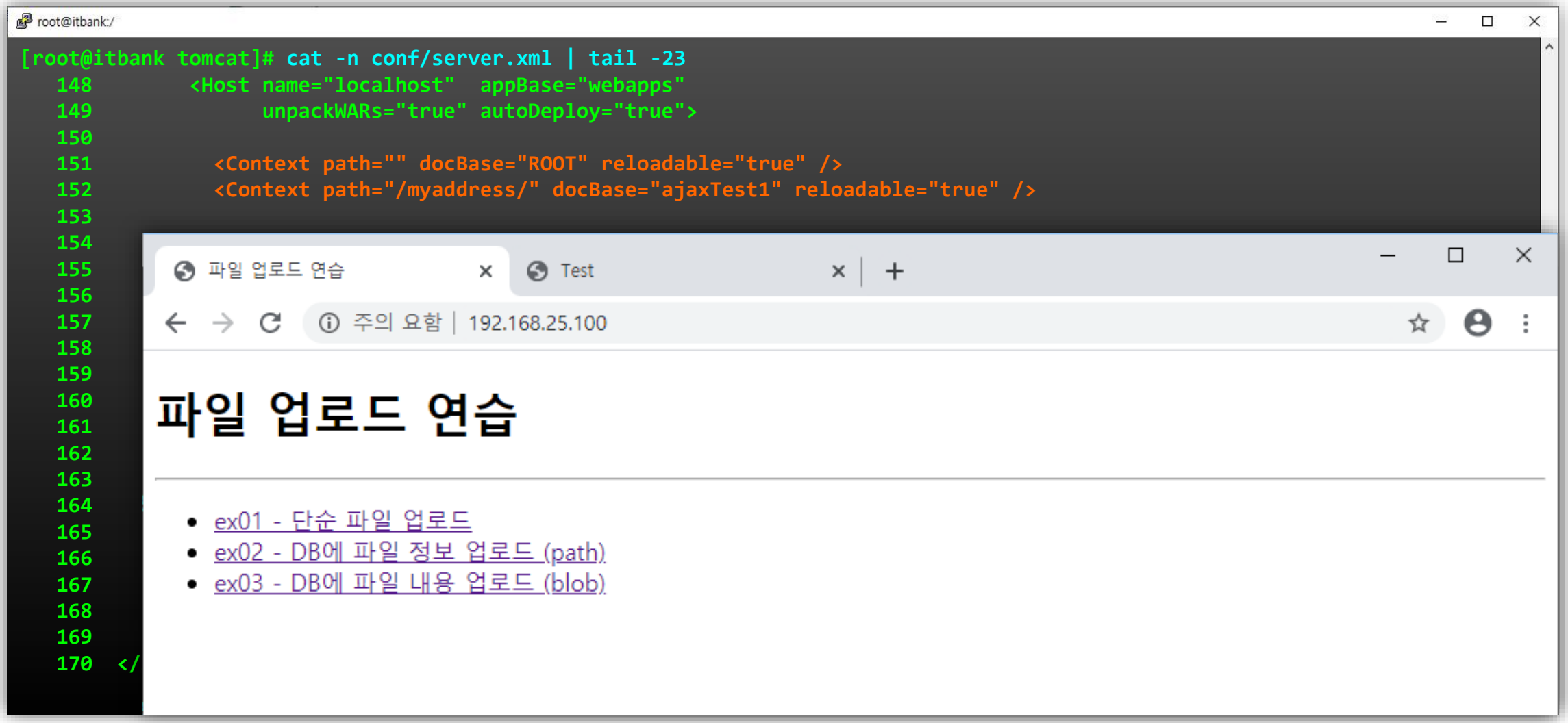
8. <Host> 태그 내에서 <Context> 를 설정하기

root@itbank:/

```
[root@itbank tomcat]# cat -n conf/server.xml | tail -23
   148        <Host name="localhost"  appBase="webapps"
   149              unpackWARs="true" autoDeploy="true">
   150
   151          <Context path="" docBase="ROOT" reloadable="true" />
   152          <Context path="/myaddress/" docBase="ajaxTest1" reloadable="true" />
   153
   154          <!-- SingleSignOn valve, share authentication between web applications
   155               Documentation at: /docs/config/valve.html -->
   156          <!--
   157          <Valve className="org.apache.catalina.authenticator.SingleSignOn" />
   158          -->
   159
   160          <!-- Access log processes all example.
   161               Documentation at: /docs/config/valve.html
   162               Note: The pattern used is equivalent to using pattern="common" -->
   163          <Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
   164                 prefix="localhost_access_log" suffix=".txt"
   165                 pattern="%h %l %u %t &amp;quot;%r&amp;quot; %s %b" />
   166
   167        </Host>
   168      </Engine>
   169    </Service>
   170  </Server>
```

Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

9. 서비스 재 시작 이후, 지정한 경로로 접근되는지 (최상위 경로)



Spring Project Deploy (war) in Apache Tomcat CentOS 7.x

10. 서비스 재 시작 이후, 지정한 경로로 접근되는지 (지정 주소)