**Apache HTTPD installation on Windows Server Environment**

1. Edit the Tomcat/conf/server.xml file

<Connector protocol="AJP/1.3"

maxThreads="300"

address="0.0.0.0"

port="8009"

redirectPort="9443" secretRequired="false"/>

<Engine name="Catalina" defaultHost="localhost" jvmRoute="tomcat1">

1. Restart the Tomcat server
2. Download and unarchieve apache httpd package.

<https://www.apachelounge.com/download/VS17/binaries/httpd-2.4.63-250207-win64-VS17.zip>

Page address: <https://www.apachelounge.com/download/#google_vignette>

1. Move the Apache24 folder to the dedicated directory
2. Open CMD with administrator access and cd into Apache24 directory &

Run the following command to install HTTPD in CMD with Run as Administrator:

httpd.exe -k install

1. To verify installation open services from start tab and check for Apache2.4
2. Edit the httpd.conf file in Apache24/conf
3. Load the modules
4. LoadModule headers\_module modules/mod\_headers.so
5. LoadModule include\_module modules/mod\_include.so
6. LoadModule proxy\_module modules/mod\_proxy.so
7. LoadModule proxy\_ajp\_module modules/mod\_proxy\_ajp.so
8. LoadModule ssl\_module modules/mod\_ssl.so
9. LoadModule security2\_module modules/mod\_security2.so

B. Add the Following configuration in httpd.conf

| LoadModule jk\_module modules/mod\_jk.so  <IfModule jk\_module>  JkWorkersFile conf/extra/workers.properties  JkLogFile logs/mod\_jk.log  JkLogLevel info  JkLogStampFormat "[%b %d %Y - %H:%M:%S] "  JkRequestLogFormat "%w %V %T"  JkMount /status stat  </IfModule> |
| --- |

C. Uncomment the following configurations

1. Include conf/extra/httpd-ssl.conf
2. Include conf/extra/httpd-vhosts.conf

D. Edit the Listen port from 80 to 8080

E. Edit the SRVROOT Variable to Apache24 installation directory in Windows Server

F. Add the following Configurations for Cache-Control and Pragma

| <IfModule mod\_headers.c>  Header set Cache-Control "no-store, no-cache, must-revalidate, max-age=0"  Header append Cache-Control "post-check=0, pre-check=0"  Header set Pragma "no-cache"  Header always edit Set-Cookie (.\*) "$1; HttpOnly; Secure"  Header always edit Set-Cookie (?i)^(.\*);\s?Secure;?\s?(.\*)?;?\s?Secure;?\s?(.\*)$ "$1; $2; $3; Secure"  Header always edit Set-Cookie (?i)^(.\*);\s?HttpOnly;?\s?(.\*)?;?\s?HttpOnly;?\s?(.\*)$ "$1; $2; $3; HttpOnly"  </IfModule> |
| --- |

8. Edit the Apache24/conf/extra/httpd-vhosts.conf file and add the following entires

| <VirtualHost \*:8080>  ServerName kmbl.kotak.com  #ProxyPass / ajp://localhost:8009/  #ProxyPassReverse / ajp://localhost:8009/  JkMount /\* kotak\_balancer  DocumentRoot "${SRVROOT}/htdocs"  #JkMount /\* kotak\_balancer  ErrorLog logs/kotak-error.log  CustomLog logs/kotak-access.log common  # Other HTTP configurations  </VirtualHost> |
| --- |

9. Edit the Apache24/conf/extra/httpd-ssl.conf and add the following entires

| <VirtualHost \_default\_:8443>  DocumentRoot "${SRVROOT}/htdocs"  ServerName www.example.com:8443  ServerAdmin admin@example.com  JkMount /\* kotak\_balancer  ErrorLog "${SRVROOT}/logs/error.log"  TransferLog "${SRVROOT}/logs/access.log"  SSLCertificateFile "${SRVROOT}/conf/cert/certificate.crt"  SSLCertificateKeyFile "${SRVROOT}/conf/cert/privatekey.key" |
| --- |

10. Create a new directory Apache24/conf/cert and add the certificates here

11. Create a new file workers.properties in Apache24/conf/extra/

| worker.list=kotak\_balancer,stat  # kotak Config  worker.kotak\_balancer.type=lb  worker.kotak\_balancer.balance\_workers=tomcat1  worker.kotak\_balancer.sticky\_session=1  worker.tomcat1.type=ajp13  worker.tomcat1.port=8009  worker.tomcat1.host=127.0.0.1  worker.tomcat1.lbfactor=10  #worker.tomcat2.type=ajp13  #worker.tomcat2.port=8009  #worker.tomcat2.host=127.0.0.1  #worker.tomcat2.lbfactor=10  worker.stat.type=status |
| --- |

12. Download mod\_jk.so file from apache and place it in Apache24/modules/ after unarchieving it

<https://www.apachelounge.com/download/VS17/modules/mod_jk-1.2.50-win64-VS17.zip>

Page Address: <https://www.apachelounge.com/download/#google_vignette>

13. Configure mod\_security in HTTPD

Add the following in httpd.conf

LoadModule security2\_module modules/mod\_security2.so

<IfModule security2\_module>

SecRuleEngine On

SecRequestBodyAccess On

SecResponseBodyAccess Off

SecResponseBodyMimeType text/plain text/html text/xml

SecResponseBodyLimit 524288

SecRequestBodyLimit 13107200

SecRequestBodyNoFilesLimit 131072

SecRequestBodyInMemoryLimit 131072

#SecRule REMOTE\_ADDR "^127\.0\.0\.1$" phase:1,nolog,allow,ctl:ruleEngine=Off

Include conf/modsecurity.conf

</IfModule>

14. Configure Prod configurations in HTTPD.conf

ServerSignature Off

ServerTokens Prod

Header unset Server

#SecServerSignature "Custom"