<https://www.linuxtechi.com/set-ulimit-file-descriptors-limit-linux-servers/>

<https://www.youtube.com/watch?v=lI25KQpc0I4> (Timeout, keepalive), maxkeepaliverequest

Timeout

KeepAlive

MaxKeepAliveRequest (if value 0 meanse unlimited requested will be allowed. We should send higher value to better performance

KeepaliveTimeout ( Apache will wait for some mentioned time then it will close the connection) . we should set low value to increase performanceS

ThreadLimit :- if you set much higher limit it will consume memory

MaxClient (Directive)- if you set 100 . it will take 100 client request not more then that.

Server Limit & ThreadLimit: if server limit is 10 and Thread Limit is 10 then client will be 100 connection stablisted. If you will set higer ServerLimit then memory will be unused.

Status\_Module: real time monitoring web server

Configuration of Status\_module:- in .conf file

LoadModule status\_module modules/Mod\_status.so

<>Location /server-status>

Set Handler serer-status

Order deny,allow

Deny from all

Allow from .example.com

<>/Location>

http://your.server.name/server-status

[Linux ulimit Command – Linux Hint](https://linuxhint.com/linux_ulimit_command/)

[linuxhint.com › linux\_ulimit\_command](https://linuxhint.com/linux_ulimit_command/)

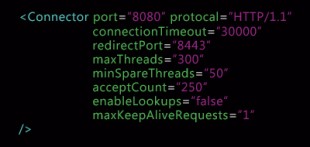
by Sidratul Muntaha. “**ulimit**” is an interesting Linux shell **command** that can set or report the resource limit of the current user. Of course, because of its nature, working with “**ulimit**” requires admin access (when changing value). Moreover, it'll only work on systems that allow control through the shell.

<https://www.cyberciti.biz/faq/how-to-find-ulimit-for-user-on-linux/#:~:text=In%20a%20nutshell%2C%20we%20find,process%20to%20tweak%20for%20performance.>

**Apache Tomcat**

<https://www.eginnovations.com/blog/tomcat-performance-tuning/>

* If the maxThreads attribute is set too low, requests will need to wait until a thread becomes available to process the request. This can increase response times seen by users. Hence, for best performance, set maxThreads to a high enough value that threads are always available in Tomcat to process incoming requests.
* Another important connector setting is the acceptCount. This is the max length of the accept queue where requests are placed while waiting for a processing thread. When the accept queue is full, additional incoming requests will be refused. The default value of 100 is inadequate for typical production workloads.

[](https://www.eginnovations.com/blog/wp-content/uploads/2019/12/tomcat-attribute-connectors.jpg)

<Connector port="8088" protocol="HTTP/1.1"

connectionTimeout="20000"

redirectPort="8443"

enableLookups="false"

compression="off"

maxConnections="8192"

maxThreads="1000"

tcpNoDelay="true"/>

Add here- 7

You can config:

acceptCount="2048"

and

maxConnections="1024"

[https://stackoverflow.com/questions/12410951/web-application-very-sl<https://stackoverflow.com/questions/12410951/web-application-very-slow-in-tomcat-7/56808621>](https://stackoverflow.com/questions/12410951/web-application-very-slow-in-tomcat-7/56808621)

<https://stackoverflow.com/questions/12410951/web-application-very-slow-in-tomcat-7/56808621>

## **CPU**

A constant 25% CPU usage in a 4 cores system can indicate that a single-core application/thread is running 100% CPU on the only core it is able to use.

Which application is eating the CPU ?

## **Memory**

20% memory is ~1.6GB. It is a bit more than I expect for an idle server running only tomcat + mysql. The -Xms1024 tells tomcat to preallocate 1GB memory so that explains it.

Change tomcat settings to -Xms512 and -Xmx2048. Watch tomcat memory usage while you throw some users at it. If it keeps growing until it reaches 2GB... then freezes, that can indicate a memory leak.

27

**Use following command to increase java heap size for tomcat7 (linux distributions) correctly:**

**echo 'export CATALINA\_OPTS="-Xms512M -Xmx1024M"' > /usr/share/tomcat7/bin/setenv.sh**

/usr/share/tomcat7/bin/setenv.sh

export JAVA\_OPTS="-Xms512M -Xmx1024M"

or

Go to "Tomcat Directory"/bin directory

if Linux then create setenv.sh else if Windows then create setenv.bat

content of setenv.\* file :

export CATALINA\_OPTS="$CATALINA\_OPTS -Xms512m"

export CATALINA\_OPTS="$CATALINA\_OPTS -Xmx8192m"

export CATALINA\_OPTS="$CATALINA\_OPTS -XX:MaxPermSize=256m"

<https://scoutapm.com/blog/slow_server_flow_chart>

<https://www.linuxtechi.com/lsof-command-examples-linux-geeks/>

# lsof command

[root@linuxtechi ~]# lsof -i 4

COMMAND   PID       USER   FD   TYPE DEVICE SIZE/OFF NODE NAME

sshd     2532       root    3u  IPv4  21120      0t0  TCP 192.168.1.6:ssh->192.168.1.5:65110 (ESTABLISHED)

sshd     2536       root    3u  IPv4  21191      0t0  TCP 192.168.1.6:ssh->192.168.1.5:65112 (ESTABLISHED)

sshd     2621       root    3u  IPv4  23506      0t0  TCP 192.168.1.6:ssh->192.168.1.9:65422 (ESTABLISHED

To list all open IPv4 network files used by a specific process whose process id “any\_number”, examples is shown below

Let’s assume we want to list all IPv4 network files for rpcbind process

**Syntax :** # lsof i 4 -a -p {process\_pid}

[root@linuxtechi ~]# lsof -i 4 -a  -p 1633

COMMAND  PID USER   FD   TYPE DEVICE SIZE/OFF NODE NAME

rpcbind 1633  rpc    4u  IPv4  16576      0t0  TCP \*:sunrpc (LISTEN)

rpcbind 1633  rpc    5u  IPv4  16577      0t0  UDP \*:sunrpc

rpcbind 1633  rpc   10u  IPv4  16649      0t0  UDP \*:960

[root@linuxtechi ~]#

#### **Example:8) List all TCP & UDP process running on specific port (lsof -i TCP/UDP:port)**

Let’s assume we want to list all the TCP process running on 80 port, use the below command

[root@linuxtechi ~]# lsof -i TCP:80

COMMAND  PID   USER   FD   TYPE DEVICE SIZE/OFF NODE NAME

httpd   2594   root    4u  IPv6  22703      0t0  TCP \*:http (LISTEN)

httpd   2595 apache    4u  IPv6  22703      0t0  TCP \*:http (LISTEN)

httpd   2596 apache    4u  IPv6  22703      0t0  TCP \*:http (LISTEN)

httpd   2597 apache    4u  IPv6  22703      0t0  TCP \*:http (LISTEN)

httpd   2598 apache    4u  IPv6  22703      0t0  TCP \*:http (LISTEN)

httpd   2599 apache    4u  IPv6  22703      0t0  TCP \*:http (LISTEN)

[root@linuxtechi ~]#