



```
### ( )
```

```
 CPU I/O
```

```
1. (* `top` / `htop` )*
```

```

`bash
top
...
* (load average): 1 5 15 CPU **
4 >4
* %CPU: %Cpu(s) %id` %wa` I/O
`%wa`
* %MEM: `Shift + M` `java` `tomcat`

```

```
2. (* Swap (`free` )*
```

```

`bash
free -h
...
* `available` Ubuntu 14.04 `free` `free`
`swap` `used`

```

```
3. (* I/O (`iostat`, `iotop` )*
```

```

`bash
# sysstat : sudo apt-get install sysstat
iostat -xm 2

# iotop root : sudo apt-get install iotop && sudo iotop
...
* `%util` 100% I/O
* `await` I/O >100ms

```

```
4. (* (`netstat`, `ss` )*
```

```

`bash
# Tomcat ESTABLISHED
netstat -natp | grep :8080 | grep ESTABLISHED | wc -l

# ss
ss -t sport = :8080 state established | wc -l
...
*

```

---

```
### Java ( )
```



getConnection()

XXXXXXXXXXXXXXXXXXXXXXXXXXXX  
XXXXXXXXXXXX

```

5. **XXXXXX (`jmap`) - XXXXXXXX **
   ``bash
   # XX Heap DumpXXXXXXXXXXXX
   jmap -dump:live,format=b,file=heap_dump.hprof 12345
   ...

   * XXXXXXXXXXXXXXXXXXXX STWXX Full GCXXXXXXXX
   * XXXXX `heap_dump.hprof` XXXXXXXX **Eclipse MAT (Memory Analyzer Tool)** XX
**jhat** XXXXXXXXXXXXXXXXXXXX

```

---  
### XXXX TomcatXXXXXXXX

```

1. **XXXXXX **
   XX ` $CATALINA_HOME/conf/server.xml ` XXXXXXXX
   ``xml
   <Connector port="8080" protocol="HTTP/1.1"
     connectionTimeout="20000"
     maxThreads="200"      <!-- XXXXXXXX -->
     acceptCount="100"    <!-- XXXXXX -->
     ... />
   ...

   * XXXXXXXX `maxThreads` XXXXXXXXXXXXXXXXXXXX

```

### XXXXXXX

1. \*\*`top`\*\* -> XX CPUXXXX
2. \*\*`jstat -gcutil`\*\* -> XXXXX Full GCXX
3. \*\*`jstack`\*\* -> XXXXXXXX GCXXXXXXXXXXXX
4. \*\*`jmap` + MAT`\*\* -> XXXXXXXXXXXXXXXXXXXX
5. \*\*XXXXXX \*\* -> XXXXXXXXXXXXXXXXXXXX
6. \*\*XXXXXX \*\* -> XX `maxThreads` XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXX GCXXXXXXXXXXXXXXXXXXXX

XX XX XXXXXXX XX **Ubuntu14.04 + Tomcat** XXXXXXX XX

XXXXXXXXXXXX jstack XX jstat XX Tomcat XX JVM

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

???? collect\_tomcat\_jvm.sh

```
#!/bin/bash
# Tomcat JVM jstack/jstat
# /var/log/tomcat_jvm_monitor.log

#
LOG_DIR="/var/log"
LOG_FILE="$LOG_DIR/tomcat_jvm_monitor.log"
JAVA_HOME="/usr/lib/jvm/java-7-openjdk-amd64" # JDK
TOMCAT_USER="tomcat" # tomcat
DATE=$(date +"%Y-%m-%d %H:%M:%S")

# Tomcat Java PID
PID=$(ps -u $TOMCAT_USER -o pid,comm | grep java | awk '{print $1}')

if [ -z "$PID" ]; then
    echo "[$DATE] Tomcat " >> $LOG_FILE
    exit 1
fi

#
echo "===== [$DATE] =====" >> $LOG_FILE

# jstat GC
$JAVA_HOME/bin/jstat -gc $PID >> $LOG_FILE 2>&1

#
$JAVA_HOME/bin/jstack -l $PID >> $LOG_FILE 2>&1

echo -e "\n" >> $LOG_FILE
```

????

1.

/usr/local/bin/collect\_tomcat\_jvm.sh

sudo chmod +x /usr/local/bin/collect\_tomcat\_jvm.sh

2.

/var/log/

3.

cron  2

```
crontab -e
```

```
0 2 * * * /usr/local/bin/collect_tomcat_jvm.sh
```

30

```
*/30 * * * * /usr/local/bin/collect_tomcat_jvm.sh
```

- JVM GC/
- 
- logrotate

**logrotate**

`collect_tomcat_jvm.sh`  **logrotate**

```
/home/shuncom/tomcat_jvm_monitor.log
```

## logrotate ????

`/etc/logrotate.d/tomcat_jvm_monitor`

```

/home/shuncom/tomcat_jvm_monitor.log {
    daily
    rotate 7
    compress
    delaycompress
    missingok
    notifempty
    create 0644 root root
    sharedscripts
    postrotate

```



“`tomcat_jvm_monitor.log`” + `tomcat_jvm_monitor.log` 200MB `tomcat_jvm_monitor.log`

`tomcat_jvm_monitor.log` + `tomcat_jvm_monitor.log` `tomcat_jvm_monitor.log`

- `tomcat_jvm_monitor.log`
- `tomcat_jvm_monitor.log` **100MB**`tomcat_jvm_monitor.log`

logrotate `tomcat_jvm_monitor`

???? `/etc/logrotate.d/tomcat_jvm_monitor`

```
/home/shuncom/tomcat_jvm_monitor.log {
    daily                # 每天
    size 100M           # 100MB 大小
    rotate 7            # 7 天
    compress             # 压缩
    delaycompress       # 延迟压缩
    missingok           # 文件不存在时不报错
    notifempty          # 文件为空时不旋转
    create 0644 root root # 创建新文件权限
    sharedscripts
    postrotate
        true
    endscript
}
```

??

`tomcat_jvm_monitor`

```
sudo logrotate -f /etc/logrotate.d/tomcat_jvm_monitor
```

`tomcat_jvm_monitor`

```
tomcat_jvm_monitor.log
tomcat_jvm_monitor.log.1
tomcat_jvm_monitor.log.2.gz
...
```

