**How Tomcat works**

Tomcat:

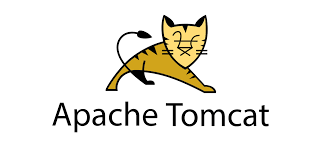
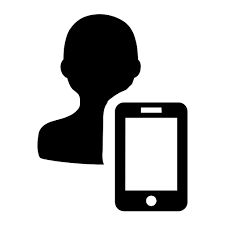
Apache Tomcat is a free and open-source implementation of the Jakarta Servlet, Jakarta Expression Language, and WebSocket technologies.

**Github: hieunguyeu810**

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| --- | --- |
| **Area** | **Contain** |
| Heap | Objects |
| Stack | Methods  Local variable  Reference Available |
| Code | Byte Code |
| Static | Static Methods and Data |

|  |
| --- |
| **Realms** |
| A “database of username, password, roles. |
| - Memory Based  - JDBC database  - DataSource database  - JNDI Directory  - User database  - JAAS |

|  |
| --- |
| **Valves** |
| Component that can be inserted into the request processing pipeline |
| - Remote Address Filter  - Remote Host Filter  - Request Dumper Valve  - Single Sign On Valve  - Access Log Valve |



Requests

Connector 1

Connector 2

Connector 3

Task - Task -Task - Task

Task Queue

**EXECUTOR**

**Thread Pool**

Thread

Thread

Thread

Thread

Logger

Resources

Logger

Manager

Realm

Logger

Realm

**Connectors**

- HTTP

- HTTPS

- AJP

**Server**

**Services**

**Engines (Catalina)**

**Hosts (localhost)**

**Contexts**

**Global Naming Resources**

**System**

- All unpacked classes and resources in the /WEB-INF/classes

- Classes and resources in JAR files under the /WEB-INF/lib

**Common**

- unpacked classes and resources in $CATALINA\_BASE/lib (or $$CATALINA\_HOME/lib)

- JAR files in $CATALINA\_BASE/lib (or $CATALINA\_HOME/lib)

**System**

- $CATALINA\_HOME/bin/bootstrap.jar

- $CATALINA\_BASE/bin/tomcat-juli.jar

- $CATALINA\_HOME/bin/commons-daemon.jar

**Bootstrap**

- Basic runtime classes provided by JVM

- System Extention ($JAVA\_HOME/jre/lib/ext)

***CLASS LOADER***

***DATABASE***

***WEB SERVER***

***CLIENT***

**Non-Heap Memory**

Perm Gen

Code cache

Reversed

-XX:PermSize

-XX:MaxPermSize

**Heap Memory**

Young Generation

(-XX: MaxNewSize)

Old Generation

Reversed

Tenured Pool

Eden Pool

Survivor Pool

Reversed

Initial Heap size

Heap Memory

**JVM**

**Host Operarting System**

Non-Heap Memory

-Xms

JVM Max Heap Size

-Xmx

JVM

memory

OS memory