WebServer

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Extensions Implemented

1. Multi threading
2. Keep Alive timeout/Persistent connection
3. Pipelining
4. Cookie
5. Dropbox kind of server
6. Preventing DOS attack

1.Multi Threading : A new process is not created for each connection saving load on server.

2. Keep Alive/Persistent : Sockets are not closed as soon request is served. We set a timeout after which socket gets closed. This saves tcp handshaking for each request.
3. Pipelining : All requests are served together
4. Cookie : We maintain a mapping (hashmap) of user and cookie. If request with same cookie value comes, we don’t ask for credentials.

5. Dropbox : User puts files in public_html and public_html/resources folder. Then he can login to server to download them which only he can access.

   cookies are used to avoid login for maintaining states.

6. DOS Attack Prevention : Following methods are used -
a. As soon as request for connection comes, we check for DOS attack. If found we close the connection.
b. A file blackListedIps.txt is kept which stores ips whose connection will never be accepted.
c. All requests are saved in log.txt for later analysis
d. New Data structure defined : IpData which stores last n connections times for that ip
e. We don’t accept new socket connection within some time interval of last accepted
f. The user should not have made connection more often, this can be checked using history of ip

References

Read about socket programming from stackoverflow, wikipedia, and links given in document