server-push

There has always been problem for pushing data from server side to client side. Here is the solution using web sockets and tornado webserver(python).

This is plug and play kind of websocket server which can push data to the client side and vice-versa.

Prerequisite: tornado webserver. Install using following command in the cmd line

```
pip install tornado OR easy_install tornado
```

Step 1: Run server.py on server(Now server is ready for conversation using websockets) using following cmd

```
python server.py
```

Step 2: Copy and paste the below code on client's HTML page

```
<script>
    $(document).ready(function () {

        var ws;
        var host = '192.168.1.1'; //server IP
        var port = '8888'; //server port
        var uri = 'ws'; //websocket uri
        ws = new WebSocket("ws://" + host + ":" + port + uri); //create web socket object

        //Called when connection is established with server
        ws.onopen = function (evt) {
            alert("Connection open");
        };

        //Called when message is sent from server
        ws.onmessage = function (evt) {
            alert("message received: " + evt.data)
        };

        //Called when connection is closed from server
        ws.onclose = function (evt) {
            alert("Connection close");
        };
    });
</script>
```

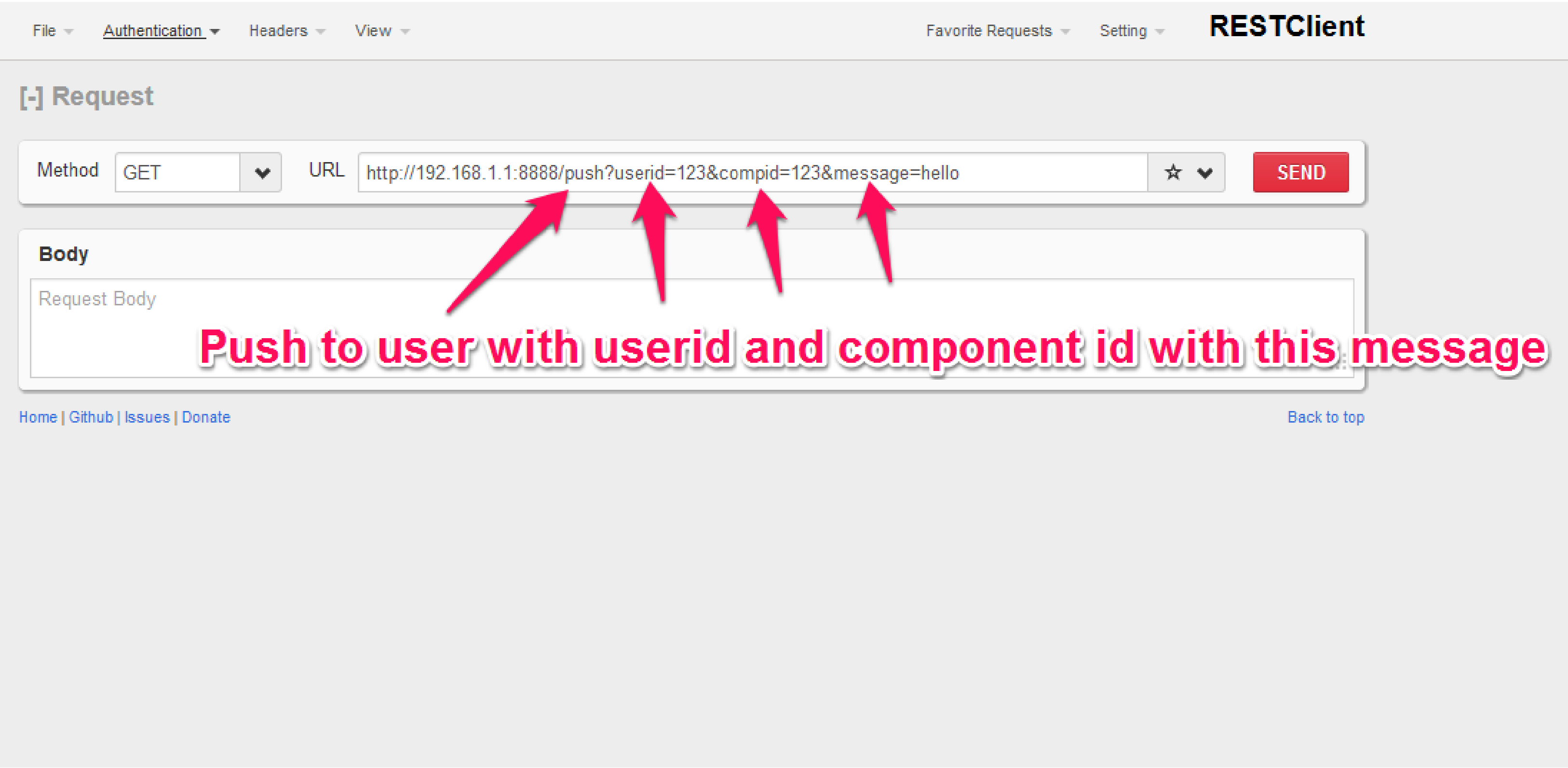
Step 3: Understanding server side code(server.py)

```
from tornado import httpserver
import tornado.websocket
import tornado.ioloop
import tornado.web

clients = []
userid = 0
class WSHandler(tornado.websocket.WebSocketHandler):

    #Called when attempt is made for connection from client
    def open(self):
        obj = SessionManagement()
        obj.createsession(self)#storing web socket object for further
communication with client
```

```
    #Called when client sends message
    def on_message(self, message):
        print 'message received %s' % userid

    #Called when user refreshes or closes the page
    def on_close(self):
        obj = SessionManagement()
        obj.deletesession(self)#deleting web socket object
        print 'connection closed'


class SessionManagement():
    #Create session and stores into array
    def createsession(self, obj):
        userid = obj.get_argument("userid")
        componentid = obj.get_argument("compid")
        clients.append({"wsobj":obj, "userid":userid, "compid":componentid})
        for w in clients:
            print w
    #Delete session from array when client refreshes the page or closes the
page
    def deletesession(self, obj):
        for temp in clients:
            if cmp(obj, temp['wsobj']):
                clients.remove(temp)
        for w in clients:
            print w

class PushToUser(tornado.web.RequestHandler):
    def get(self):
        userid = self.get_argument('userid')
        compid = self.get_argument('compid')
        message = self.get_argument('message')
        for temp in clients:
            if (temp['userid'] == userid and temp['compid'] == compid):
                temp['wsobj'].write_message(message)

class PushToAll(tornado.web.RequestHandler):
    def get(self):
        message=self.get_argument('message')
        for temp in clients:
            temp['wsobj'].write_message(message)

application = tornado.web.Application([
    (r'/ws', WSHandler),
    (r'/push', PushToUser), #Ex. /push?userid=123&compid=123&message=hello
    (r'/pushtoall', PushToAll), #Ex. /pushtoall?message="hello"
])

if __name__ == "__main__":
    http_server = tornado.httpserver.HTTPServer(application)
    http_server.listen(8888)
    tornado.ioloop.IOLoop.instance().start()
```

Step 4: Sending message to client using REST

- Push message to specific user

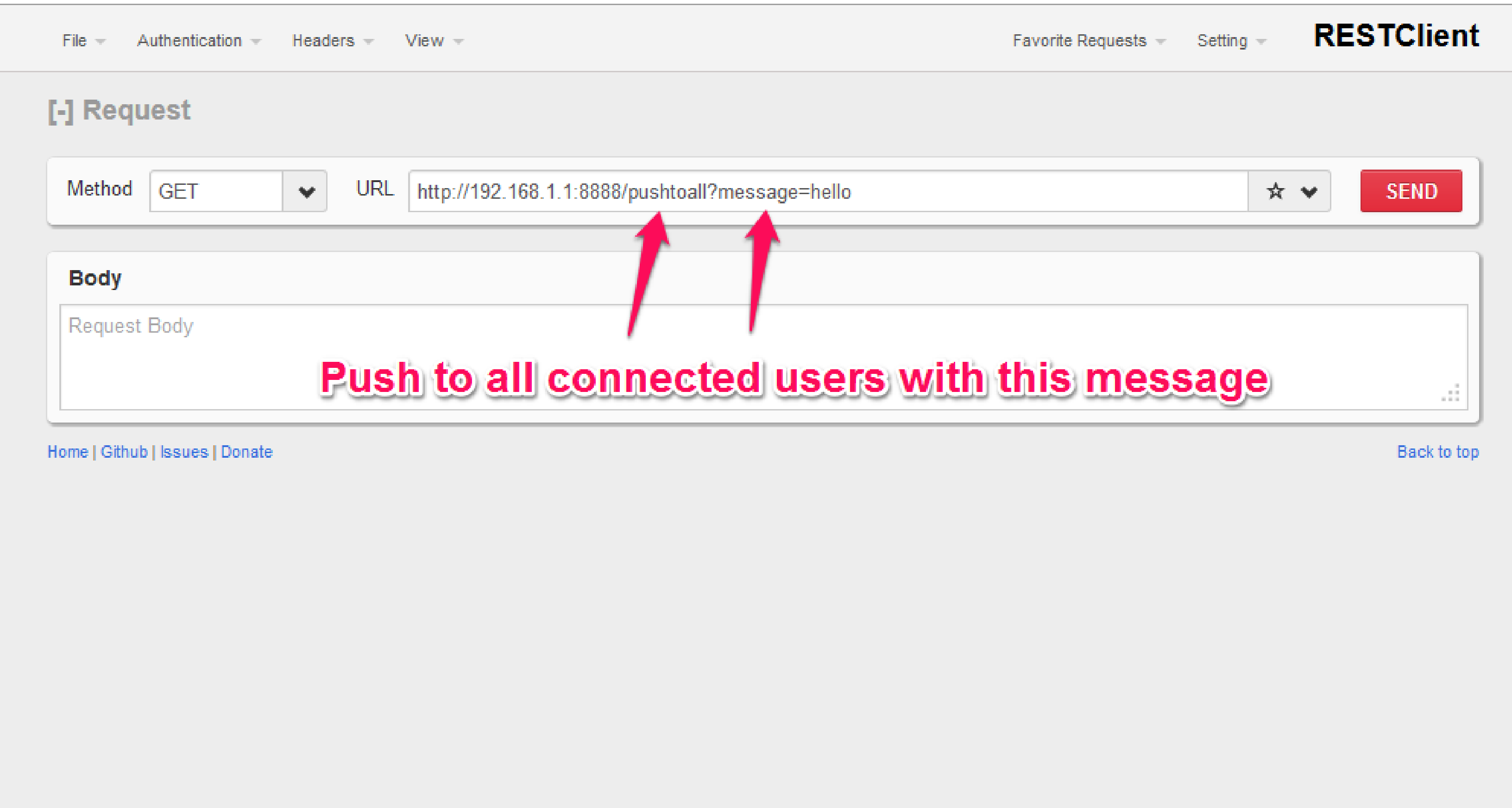


Method: GET

URL: http://192.168.1.1:8888/push?userid=123&compid=123&message=hello

Push to user with userid and component id with this message

- Push message to all users



Method: GET

URL: http://192.168.1.1:8888/pushtoall?message=hello

Push to all connected users with this message

Done!!!!!