

Open-Source Technology Use Report: TCP Connections

[Flask]

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Code Repository	https://github.com/pallets/flask
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Who worked with this?	To be decided

Purpose

Flask allows us to build a server that establishes TCP connections with clients. To do this, we create a variable called `app`, which sets up the flask server (i.e: `app = Flask(__name__)`). This is done in the `app.py` file in the root directory of our project. This stores an instance of the Flask class.

We then call the `run` method of the flask class in the main function in the same `app.py` file (i.e: `app.run(debug=False, host='0.0.0.0', port=8000)`). This sets up the server and runs the application. This main method establishes a server that listens for connections on local port 8000. The server then allows us to form TCP connections with in-coming requests. Once we receive these requests, the flask server parses these requests and calls the `app.route` functions in our code to respond to the requested path. Flask provides TCP Connections that make it quick to handle requests.

The run method from the Flask class does the following to establish a server:

1. It imports the run_simple method from the werkzeug library and calls it [here](#)
2. The run_simple() method calls make_server() which returns an instance of the BaseWSGI server class [here](#) and stores it in a variable called srv.
3. The BaseWSGI server class constructor enables the server to begin listening for incoming TCP connections by calling self.server_bind() and self.server_activate() if fd is none [here](#).
4. self.server_activate() from BaseWSGI calls the socketserver.server_activate() method since BaseWSGI inherits from HTTPServer which inherits from socketServer.TCP server [here](#). This function allows the server to begin listening for incoming TCP connections.
5. srv.serve_forever() is then called [here](#) which calls the super().serve_forever() method [here](#). Because the BaseWSGI server class inherits from the HTTPServer class ([here](#)) and the HTTPServer class inherits the socketServer.TCPServer class [here](#), this is effectively a call to the serve_forever() method from the socketServer.TCPServer class which is what we used on homeworks to create TCP connections with incoming requests.