

FirstStep.ai

Client Server Design

Setup Guide

Servers: **Cloud-based or LAN**

Document Revision: **2021-12-17**



1) Purpose

The purpose of this guide is to set up a cloud-based / LAN server to receive data from FirstStep.ai IoT devices.

2) Outcomes

The outcome of this tutorial is to provide instruction on:

- Creating server endpoint
- Processing HTTP server requests
- Decoding and saving image data

3) Server Endpoint

The device will need to send data to:

```
<server_url>/upload_file
```

Ensure that this endpoint is available.

4) Device Simulation Script

The following script will simulate the device API call:

```
import requests
import json

# =====

# User Config

base_url = "http://192.168.2.3:5001"

# =====

# Image: Small Red Heart (20 x 20 px)

img_file_b64_str =
"/9j/4AAQSkZJRgABAQAAQABAAD/2wBDAAgGBgcGBQgHBwcJCQgKDBQNDAsLDBkSEw8UHRofHh0aHBwgJC4n
ICIsIxwckDcpLDAxNDQ0Hyc5PTgyPC4zNDNL/2wBDAAQkJCQwLDBgNDRgyIRwhMjIyMjIyMjIyMjIyMjIyMj
jIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMj
EAAAAAAAAAAAECAwQFBgcICQoL/8QAtRAAAgEDAwIEAwUFBAQAAAF9AQIDAAQRBRIhMUEGE1FhByJxFDKBkaE
II0KxwRVS0fAkM2JyggkKFhcYGRolJicoKSo0NTY3ODk6Q0RFRkdISUpTVFVWV1hZWmNkZWZnaGlqc3R1dnd4
eXqDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uHi4+Tl5ufo6
erx8vP09fb3+Pn6/8QAHwEAAwEBAQEBAQEBAQAAAAAAAAECAwQFBgcICQoL/8QAtREAAgECBAQDBAcFBAQAAQ
J3AAECAxEEBSExBhJBUQdhcRMiMoEIFEKRobHBCSMzUvAVYnLRChYkNOEl8RcYGRomJygpKjU2Nzg5OkNERUz
HSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eH16goOEhYaHiImKkpOUlZaXmJmaoqOkpaanqKmqsrO0tba3uLm6
wsPExcbyMnK0tPULdbX2Nna4uPk5ebn6Onq8vP09fb3+Pn6/9oADAMBAAIRAxEAPwB/inxXqWqa3cFLqaG2i
kZiY43KgAHGTjvVC+8T6zqIgfXqE/7hAi7HK59zjqfeuh8feD59Jv5tUtUMlh05dscmJieQfbPQ/h9eOsrK51
C7jtbSFpZ5DtVF6mvBreljUcW3qfo2CWDqYaFSCVory00lueleGPiBcJoyxagrXE0blBLnlwMZ9+aK6Lw14I
s9K0ZIL1EnumYvI3YE44HsMUUV3whiOVany1fEZW6smqbevTY6qWKOeJ4pUV43GGVhkEGsTQPC+laFLcTWMBWS
Vjlm04qv90egoormlzpnkU6k1TlFPR20gooorQxP//Z"

# =====

print ("\nSending HTTP request...\n")

base_url = "http://192.168.2.3:5001"
request_url = "%s/%s" % (base_url, "upload_file")
json_data = {"data_type": "image",
             "session_id": "111-111",
             "device_id": "222",
             "detect_date": "2022-01-01 00:00:00.000",
             "camera_img": img_file_b64_str}
message_data = json.dumps(json_data)
response = requests.post(url=request_url, data=message_data, timeout=1)
status_code_return = response.status_code

print (" >> Status Code: %s" % status_code_return)

# =====
```

5) Image Decoding Script

To decode the image data, use the following script:

```
import base64

# =====
# Raw Image data received from HTTP POST request:

img_file_b64_str =
"/9j/4AAQSkZJRgABAQAAQABAAD/2wBDAAgGBgcGBQgHBwcJCQgKDBQNDAsLDBkSEw8UHRofHh0aHBwgJC4n
ICIsIxwckDcpLDAxNDQ0Hyc5PTgyPC4zNDL/2wBDAQkJCQwLDBgNDRgyIRwhMjIyMjIyMjIyMjIyMjIyMj
IyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjL/wAARCAAUABQDASIAAhEBAxEB/8QAHwAAAQUBAQEBAQ
EAAAAAAAAAAAECAwQFBgcICQoL/8QAtRAAAgEDAwIEAwUFBAQAAAF9AQIDAAQRBRIhMUEGE1FhByJxFDKBkaE
II0KxwRVS0fAkM2JyggkKFhcYGRolJicoKSo0NTY3ODk6Q0RFRkdISUpTVFVWV1hZWmNkZWZnaGlqc3R1dnd4
eXqDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLTlNXW19jZ2uHi4+Tl5ufo6
erx8vP09fb3+Pn6/8QAHwEAAwEBAQEBAQEBAQAAAAAAAAECAwQFBgcICQoL/8QAtREAAgECBAQDBAcFBAQAAQ
J3AAECAxEEBSExBhJBUQdhcRMiMoEIFEKRobHBCSMzUvAVYnLRChYkNOEl8RcYGRomJygpKjU2Nzg5OkNERUz
HSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6goOEhYaHiImKkpOUlZaXmJmaoqOkpaanqKmqsr00tba3uLm6
wsPExcBHyMnK0tPU1dbX2Nna4uPk5ebn6Onq8vP09fb3+Pn6/9oADAMBAAIRAxEAPwB/inxXqWqa3cFLqaG2i
kZiY43KgAHGTjvVC+8T6zqIgfXqE/7hAi7HK59zjqfeuh8feD59Jv5tUtUmlh05dscmJieQfbPQ/h9eOsrK51
C7jtbSFpZ5DtVF6mvBreljUcW3qfo2CWDqYaFSCVory001ueleGPiBcJoyxagrXE0b1BLnl1wMZ9+aK6Lw14I
s9K0ZIL1EnumYvI3YE44HsMUv3whiOVany1fEZW6smqbevTY6qWKOeJ4pUV43GGVhkEGsTQPC+laFLcTWMBWS
Vjlm04qv90egoormlzpnkU6k1TlFPR2OgoorQxP//Z"

# =====

print ("\nWriting to image file...\n")

img_path = "output.jpg"
img_data = base64.b64decode(img_file_b64_str)
with open(img_path, 'wb') as f:
    f.write(img_data)

# =====
```

This example above should save the following image to your drive:



Support

For additional support, contact: support@firststep.ai