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Course: DS 561

Homework 4

Setup

- Create VMs for each app

← Create an instance

CREATE VM FROM...

• VM basics
webserver-vm, us-central1

• Machine configuration
e2-micro

• OS and storage
Debian GNU/Linux 12 (bookworm)

• Networking
2 firewall rules, 1 network interface

• Observability

• Security

• Advanced

Identify your VM

Name *
webserver-vm

Region *
us-central1 (Iowa)

Zone *
Any

MANAGE TAGS AND LABELS

Availability policies
VM provisioning model
Standard

VM PROVISIONING MODEL ADVANCED SETTINGS

CREATE

CANCEL

EQUIVALENT CODE

← Create an instance

CREATE VM FROM...

EQUIVAL

• VM basics
Instance-20241014-195752, us-east4

• Machine configuration
e2-highcpu-8

• OS and storage
Debian GNU/Linux 12 (bookworm)

• Networking
1 network interface

• Observability

• Security

• Advanced

Machine configuration

NEW: Google Axion virtual machines in Preview

Try Google Axion Arm-based Processors. Sign up for early access now

SIGN UP

General purpose

Compute optimized

Memory optimized

Storage optimized

GPUs

Machine types for common workloads, optimized for cost and flexibility

Series	Description	vCPUs	Memory	Platform
<input type="radio"/> C4	Consistently high performance	2 - 192	4 - 1,488 GB	Intel Emerald Rapids
<input type="radio"/> N4	Flexible & cost-optimized	2 - 80	4 - 640 GB	Intel Emerald Rapids
<input type="radio"/> C3	Consistently high performance	4 - 192	8 - 1,536 GB	Intel Sapphire Rapids
<input type="radio"/> C3D	Consistently high performance	4 - 360	8 - 2,880 GB	AMD Genoa
<input checked="" type="radio"/> E2	Low cost, day-to-day computing	0.25 - 32	1 - 128 GB	Based on availability
<input type="radio"/> N2	Balanced price & performance	2 - 128	2 - 864 GB	Intel Cascade and Ice Lake
<input type="radio"/> N2D	Balanced price & performance	2 - 224	2 - 896 GB	AMD EPYC
<input type="radio"/> T2A	Scale-out workloads	1 - 48	4 - 192 GB	Ampere Altra Arm
<input type="radio"/> T2D	Scale-out workloads	1 - 60	4 - 240 GB	AMD EPYC Milan

Monthly estimate

\$163.80

That's about \$0.22 hourly

Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
8 vCPU + 8 GB memory	\$162.70
10 GB balanced persistent disk	\$1.10
Total	\$163.80

Compute Engine pricing

LESS

CREATE

CANCEL

EQUIVALENT CODE

- VM basics
banned-tracker, us-central1
- Machine configuration
e2-medium
- OS and storage
Debian GNU/Linux 12 (bookworm)
- Networking
1 network interface
- Observability
- Security
- Advanced

Identify your VM

Name *
banned-tracker

Region *
us-central1 (Iowa)
Region is permanent

Zone *
Any
Google will choose a zone on your behalf, maximizing VM obtainability. Zone is permanent.

MANAGE TAGS AND LABELS

Availability policies

VM provisioning model
Standard

Choose "Spot" to get a discounted, preemptible VM. Otherwise, stick to "Standard". [Learn more](#)

VM PROVISIONING MODEL ADVANCED SETTINGS

CREATE CANCEL EQUIVALENT CODE

- Ssh (gcloud compute ssh webserver-vm --zone=us-central1-c, etc) into VMs and install dependencies
 - sudo apt-get install python3-venv
 - python3 -m venv venv
 - source venv/bin/activate
 - pip3 install google-cloud-storage google-cloud-logging
- SCP scripts into respective VMs

```
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ gcloud compute scp tracker.py tracker-vm:~/
--zone=us-central1-c
Warning: Permanently added 'compute.6441410671675476024' (ED25519) to the list of known hosts.
tracker.py 100% 670 13.0KB/s 00:00
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ gcloud compute scp web-server.py webserver-
vm:~/ --zone=us-central1-c
web-server.py 100% 2227 43.6KB/s 00:00
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ gcloud compute scp http-client.py httpclien
t-vm:~/ --zone=us-central1-c
Warning: Permanently added 'compute.2750545145926551597' (ED25519) to the list of known hosts.
```

- Share service key json with proper permissions (pub sub, cloud storage, etc) to vms
 - gcloud auth activate-service-account --key-file ds561-bucs-fc70776a6621.json

```
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ gcloud compute scp ds561-bucs-fc70776a
6621.json webserver-vm:~/ --zone=us-central1-c
ds561-bucs-fc70776a6621.json 100% 2352 47.8KB/s 00:00
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ gcloud compute scp ds561-bucs-fc70776a
6621.json tracker-vm:~/ --zone=us-central1-c
ds561-bucs-fc70776a6621.json 100% 2352 45.1KB/s 00:00
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ gcloud compute scp ds561-bucs-fc70776a
6621.json httpclient-vm:~/ --zone=us-central1-c
ds561-bucs-fc70776a6621.json 100% 2352 46.1KB/s 00:00
```

- Get webserver-vm's ip address to use for the http-client.py
- I needed some of the permissions in each VM to properly allow the traffic and pubsub:
 - gcloud compute instances set-service-account webserver-vm \
--zone=us-central1-c \
--scopes=<https://www.googleapis.com/auth/cloud-platform>

- gcloud compute firewall-rules create allow-http-8080 --allow tcp:8080 --target-tags=http-server --direction=INGRESS (for the web server app)
- gcloud compute firewall-rules create allow-http-tracker --allow tcp:8081 --source-ranges=0.0.0.0/0 --target-tags=tracker-vm (for tracker app)
- gcloud projects add-iam-policy-binding ds561-bucs --member=serviceAccount:problemset-4@ds561-bucs.iam.gserviceaccount.com --role=roles/storage.objectViewer
- gcloud projects add-iam-policy-binding ds561-bucs --member=serviceAccount:problemset-4@ds561-bucs.iam.gserviceaccount.com --role=roles/pubsub.subscriber
- Allow webserver to start up whenever the webserver-vm is started:

Automation

Startup script

```
source venv/bin/activate
python web-server.py
```



You can choose to specify a startup script that will run when your instance boots up or restarts. Startup scripts can be used to install software and updates, and to ensure that services are running within the virtual machine. [Learn more](#)

- We need to find each external IP for the webserver, as it changes with each restart:
 - gcloud compute instances list --format="table(name, networkInterfaces[0].accessConfigs[0].natIP)"
- To run each script in their respective VM, we need to do:
 - Tracker-vm: python3 tracker.py
 - Httpclient-vm: http-client.sh
 - We need to change the ip this targets to the one of webapp-vm.

Code Writeup

web-server.py

```
from http.server import BaseHTTPRequestHandler, HTTPServer
from google.cloud import storage, logging as cloudLogging, pubsub_v1
import json
import socket

cloudLoggingClient = cloudLogging.Client()
cloudLogger = cloudLoggingClient.logger("httpServerLog")
bannedCountries = ['North Korea', 'Iran', 'Cuba', 'Myanmar', 'Iraq', 'Libya', 'Sudan', 'Zimbabwe', 'Syria']
```

```

projectId = 'ds561-bucs'
topicId = 'banned-country-topic'

requestCount = 0

def notifyTrackerApp(country):
    publisher = pubsub_v1.PublisherClient()
    topicPath = publisher.topic_path(projectId, topicId)
    messageData = json.dumps({'country': country}).encode('utf-8')
    publisher.publish(topicPath, messageData)

def fetchFileFromBucket(bucketPath):
    bucketName, filePath = bucketPath.split("/", 1)
    bucket = storage.Client().get_bucket(bucketName)
    blob = bucket.blob(filePath)
    if blob.exists():
        return blob.download_as_text()
    return None

class RequestHandler(BaseHTTPRequestHandler):
    def log_message(self, format, *args):
        global requestCount
        if self.command == 'GET' and getattr(self, 'response_code', None)
        != 400:
            requestCount += 1
            super().log_message(format + " (Request count: %d)", *args,
            requestCount)

    def do_GET(self):
        country = self.headers.get('X-Country', 'unknown')
        if country in bannedCountries:
            cloudLogger.log_text("Access denied from banned country: " +
            country, severity="ERROR")
            notifyTrackerApp(country)
            self.response_code = 400
            self.send_response(400)
            self.end_headers()
            self.wfile.write(b"Access denied: Request from banned
            country")

```

```

        return

    try:
        fileContent = fetchFileFromBucket(self.path.strip("/"))
        if fileContent is None:
            cloudLogger.log_text("File " + self.path + " not found",
severity="ERROR")
            self.response_code = 404
            self.send_response(404)
            self.end_headers()
            self.wfile.write(b"File not found")
        else:
            self.response_code = 200
            self.send_response(200)
            self.end_headers()
            self.wfile.write(fileContent.encode("utf-8"))
    except BrokenPipeError:
        cloudLogger.log_text("The server has timed out!",
severity="ERROR")
        print("The server has timed out!")
    except Exception as e:
        cloudLogger.log_text("Error occurred: " + str(e),
severity="ERROR")
        self.response_code = 500
        self.send_response(500)
        self.end_headers()

    def handle_unsupported_methods(self):
        cloudLogger.log_text("Unsupported method " + self.command + " was
used for " + self.path, severity="ERROR")
        self.response_code = 501
        self.send_response(501)
        self.end_headers()
        self.wfile.write((self.command + " not
implemented").encode("utf-8"))

    def do_POST(self):
        self.handle_unsupported_methods()

    def do_PUT(self):

```

```

        self.handle_unsupported_methods()

    def do_DELETE(self):
        self.handle_unsupported_methods()

    def do_HEAD(self):
        self.handle_unsupported_methods()

    def do_CONNECT(self):
        self.handle_unsupported_methods()

    def do_OPTIONS(self):
        self.handle_unsupported_methods()

    def do_TRACE(self):
        self.handle_unsupported_methods()

    def do_PATCH(self):
        self.handle_unsupported_methods()

def runServer(serverAddress, port):
    server = HTTPServer((serverAddress, port), RequestHandler)
    server.serve_forever()

if __name__ == "__main__":
    runServer("0.0.0.0", 8080)

```

- Python web server using http.server
- Fetches files from google cloud storage bucket and returns the content or returns an error message depending on the type
- Main handler for requests in RequestHandler
- do_GET() checks if the requested file is in the google cloud storage bucket, fetches the content, else returns a 404 error
- Checks if the X-Country header is in the list of banned countries, if it matches, returns a 400 response, logs the request, and notifies the tracker app via Pub/Sub
- Notifies the tracker app by sending a message to Pub/Sub using pubsub_v1.PublisherClient
- If we try to call an unimplemented method (POST, DELETE, etc.), returns a 501 error

- Handles methods like POST, PUT, DELETE, PATCH, OPTIONS, etc., by logging the method and returning 501
- Track every log request using google cloud logging via `cloudLogger.log_text`, including both successful and error cases
- Keep a `requestCount` for every successful GET request that is not a 400 (banned country) by incrementing it in `log_message` method
- Each incoming request is logged and increments the `requestCount` except for requests from banned countries
- The app works with the tracker app by accepting a GET request, fetching the file, and communicating with the tracker app when a banned country request is identified via pub/sub
- Communicate with the tracker app using `requests.post` for real-time logging of requests from banned countries
- Handle exceptions during file fetching or other operations by returning 500 error and logging the exception details
- Use google cloud logging to track file retrieval, banned country access, and unsupported HTTP methods
- Set up the app to use the smallest VM setting (e2-micro) to minimize costs while performing the required operations
- Uses pub/sub for communication between the webserver and the tracker app running on a different VM

tracker.py

```
from google.cloud import pubsub_v1

def callback(message):
    print("Received message from banned country: " +
          message.data.decode('utf-8'))
    message.ack()

def listenToBannedCountryMessages():
    subscriber = pubsub_v1.SubscriberClient()
    subscriptionPath = subscriber.subscription_path('ds561-bucs',
                                                    'banned-country-subscription')
    print("Listening for messages on " + subscriptionPath + "...")
    streamingPullFuture = subscriber.subscribe(subscriptionPath,
                                                callback=callback)

    try:
        streamingPullFuture.result()
```

```

except KeyboardInterrupt:
    streamingPullFuture.cancel()

if __name__ == "__main__":
    listenToBannedCountryMessages()

```

- Python app using pubsub_v1 to listen for messages from Pub/Sub
- Callback function prints messages from banned countries and acknowledges them
- Subscribes to the banned-country-subscription in project ds561-bucs
- Listens for messages from the Pub/Sub topic with subscriber.subscribe
- Runs in the background, waiting for messages until manually stopped
- Handles interrupts to stop listening gracefully with streamingPullFuture.cancel
- When a message is received, it shows the banned country and tracks the request
- Uses pub/sub to connect and share info between this app and the web server

```

#!/bin/bash

num_clients=50

for i in $(seq 1 $num_clients); do
    python3 http-client.py --domain 104.197.59.40 --bucket jeremybui_ps2
--webdir files --num_requests 1000 --index 1000 --port 8080 --timeout 10
--verbose &
done

trap "kill 0" SIGINT

wait

```

- Runs 50 (change for testing) concurrent HTTP clients to stress test the server
- Each client sends 1000 requests to the web server
- Clients request files from the specified cloud storage bucket
- The script runs clients in the background and allows stopping with Ctrl+C
- The script waits for all clients to finish before exiting

4) Demonstrate functionality with http-client

- Start up web-server.py and tracker.py on respective VMs

- Run this on httpclient-vm: `python3 http-client.py --domain 104.197.59.40 --bucket jeremybui_ps2 --webdir files --num_requests 300 --index 1000 --port 8080 --timeout 10`

```

34.86.221.138 - - [15/Oct/2024 03:29:16] "GET jeremybui_ps2/files/589.html HTTP/1.1" 200 - (Request count: 242)
34.86.221.138 - - [15/Oct/2024 03:29:16] "GET jeremybui_ps2/files/688.html HTTP/1.1" 200 - (Request count: 243)
34.86.221.138 - - [15/Oct/2024 03:29:16] "GET jeremybui_ps2/files/686.html HTTP/1.1" 200 - (Request count: 244)
34.86.221.138 - - [15/Oct/2024 03:29:16] "GET jeremybui_ps2/files/567.html HTTP/1.1" 200 - (Request count: 245)
34.86.221.138 - - [15/Oct/2024 03:29:17] "GET jeremybui_ps2/files/233.html HTTP/1.1" 200 - (Request count: 246)
34.86.221.138 - - [15/Oct/2024 03:29:17] "GET jeremybui_ps2/files/322.html HTTP/1.1" 200 - (Request count: 247)
34.86.221.138 - - [15/Oct/2024 03:29:17] "GET jeremybui_ps2/files/461.html HTTP/1.1" 200 - (Request count: 248)
34.86.221.138 - - [15/Oct/2024 03:29:17] "GET jeremybui_ps2/files/228.html HTTP/1.1" 200 - (Request count: 249)
34.86.221.138 - - [15/Oct/2024 03:29:17] "GET jeremybui_ps2/files/191.html HTTP/1.1" 200 - (Request count: 250)
34.86.221.138 - - [15/Oct/2024 03:29:18] "GET jeremybui_ps2/files/38.html HTTP/1.1" 200 - (Request count: 251)
34.86.221.138 - - [15/Oct/2024 03:29:18] "GET jeremybui_ps2/files/500.html HTTP/1.1" 200 - (Request count: 252)
34.86.221.138 - - [15/Oct/2024 03:29:18] "GET jeremybui_ps2/files/781.html HTTP/1.1" 200 - (Request count: 253)
34.86.221.138 - - [15/Oct/2024 03:29:18] "GET jeremybui_ps2/files/689.html HTTP/1.1" 200 - (Request count: 254)
34.86.221.138 - - [15/Oct/2024 03:29:18] "GET jeremybui_ps2/files/893.html HTTP/1.1" 200 - (Request count: 255)
34.86.221.138 - - [15/Oct/2024 03:29:19] "GET jeremybui_ps2/files/585.html HTTP/1.1" 200 - (Request count: 256)
34.86.221.138 - - [15/Oct/2024 03:29:19] "GET jeremybui_ps2/files/541.html HTTP/1.1" 200 - (Request count: 257)
34.86.221.138 - - [15/Oct/2024 03:29:19] "GET jeremybui_ps2/files/807.html HTTP/1.1" 200 - (Request count: 258)
34.86.221.138 - - [15/Oct/2024 03:29:19] "GET jeremybui_ps2/files/269.html HTTP/1.1" 200 - (Request count: 259)
34.86.221.138 - - [15/Oct/2024 03:29:19] "GET jeremybui_ps2/files/873.html HTTP/1.1" 200 - (Request count: 260)
34.86.221.138 - - [15/Oct/2024 03:29:20] "GET jeremybui_ps2/files/747.html HTTP/1.1" 200 - (Request count: 261)
34.86.221.138 - - [15/Oct/2024 03:29:20] "GET jeremybui_ps2/files/150.html HTTP/1.1" 200 - (Request count: 262)
34.86.221.138 - - [15/Oct/2024 03:29:20] "GET jeremybui_ps2/files/750.html HTTP/1.1" 200 - (Request count: 263)
34.86.221.138 - - [15/Oct/2024 03:29:20] "GET jeremybui_ps2/files/540.html HTTP/1.1" 400 - (Request count: 263)
34.86.221.138 - - [15/Oct/2024 03:29:20] "GET jeremybui_ps2/files/484.html HTTP/1.1" 200 - (Request count: 264)

```

```

(venv) jbui@tracker-vm:~$ python tracker.py
Listening for messages on projects/ds561-bucs/subscriptions/banned-country-subscription...
Received message from banned country: {"country": "Syria"}
Received message from banned country: {"country": "Libya"}
Received message from banned country: {"country": "Myanmar"}
Received message from banned country: {"country": "Libya"}
Received message from banned country: {"country": "Iran"}
Received message from banned country: {"country": "Zimbabwe"}
Received message from banned country: {"country": "North Korea"}
Received message from banned country: {"country": "Myanmar"}
Received message from banned country: {"country": "Syria"}
Received message from banned country: {"country": "Iran"}
Received message from banned country: {"country": "North Korea"}
Received message from banned country: {"country": "North Korea"}
Received message from banned country: {"country": "Myanmar"}
Received message from banned country: {"country": "Sudan"}

```

```

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7.html"> This is a link </a>\n<p>\n</body>\n</html>\n'
(venv) jbui@instance-20241014-195752:~$

```

> !!	2024-10-14 23:28:40.200	webserver-vm	Access denied from banned country: Myanmar
> !!	2024-10-14 23:28:44.170	webserver-vm	Access denied from banned country: Syria
> !!	2024-10-14 23:28:49.945	webserver-vm	Access denied from banned country: Iran
> !!	2024-10-14 23:29:00.134	webserver-vm	Access denied from banned country: North Korea
> !!	2024-10-14 23:29:09.347	webserver-vm	Access denied from banned country: North Korea
> !!	2024-10-14 23:29:09.948	webserver-vm	Access denied from banned country: Myanmar
> !!	2024-10-14 23:29:20.705	webserver-vm	Access denied from banned country: Sudan

5) Demonstrate App with Curl

- 200 OK

```
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ curl -X GET http://104.197.59.40:8080/jeremybui_ps2/files/100.html
<!DOCTYPE html>
<html>
<body>
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse
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  <p>
  <a HREF="2135.html"> This is a link </a>
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  <p>
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  <a HREF="9458.html"> This is a link </a>
  <p>
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  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
  <p>
  <a HREF="974.html"> This is a link </a>
  <p>
  </>
```

```
(venv) jbui@webserver-vm:~$ python3 web-server.py
128.197.28.129 - - [15/Oct/2024 03:32:24] "GET /jeremybui_ps2/files/100.html HTTP/1.1" 200 - (Request count: 1)
```

- 404 Not Found

```
jbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$ curl -X GET http://104.197.59.40:8080/jeremybui_ps2/files/nonexistent.html
File not foundjbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/04-vms-stress-testing-and-pub-sub-bui-jeremy$
```

```
128.197.28.129 - - [15/Oct/2024 03:33:36] "GET /jeremybui_ps2/files/nonexistent.html HTTP/1.1" 404 - (Request count: 4)
```

```
> !! 2024-10-14 23:33:36.204 webserver-vm File /jeremybui_ps2/files/nonexistent.html not found
```

- 400 Bad Request

```
curl -X GET http://104.197.59.40:8080/jeremybui_ps2/files/100.html -H "X-Country: North Korea"
Access denied: Request from banned countryjbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561
```

```
(venv) jbui@webserver-vm:~$ python3 web-server.py
128.197.28.129 - - [15/Oct/2024 03:35:25] "GET /jeremybui_ps2/files/100.html HTTP/1.1" 400 - (Request count: 0)
```

```
Received message from banned country: {"country": "North Korea"}
```

```
> !! 2024-10-14 23:35:25.356 webserver-vm Access denied from banned country: North Korea
```

- 501 Not implemented


```
curl -X POST http://104.197.59.40:8080/jeremybui_ps2/files/100.html
POST not implementedjbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github
```

```
128.197.28.129 - - [15/Oct/2024 03:36:50] "POST /jeremybui_ps2/files/100.html HTTP/1.1" 501 - (Request count: 0)
```

>  2024-10-14 23:36:50.120  webserver-vm Unsupported method POST was used for /jeremybui_ps2/files/100.html

6) Demonstrate App with Browser

- 200 OK

← → ↻  Not secure 104.197.59.40:8080/jeremybui_ps2/files/100.html

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- 404 Not Found

← → ↻  Not secure 104.197.59.40:8080/jeremybui_ps2/files/nonexistent.html

File not found

```
128.197.28.129 - - [15/Oct/2024 03:39:37] "GET /jeremybui_ps2/files/nonexistent.html HTTP/1.1" 404 - (Request count: 3)
```

>  2024-10-14 23:39:36.930  webserver-vm File /jeremybui_ps2/files/nonexistent.html not found

- 400 Bad Request

Status	Meth...	Domain	File	Initiator	Type	Transferred	Size	Headers	Cookies	Request	Response
200	GET	104.197.59.4...	100.html	document	html	68.93 kB (raced)	68.83...	Filter Headers			
500	GET	104.197.59.4...	favicon.ico	FaviconLoader...	x-icon	cached	0 B	Status		400 Bad Request (?)	
400	GET	104.197.59.4...	100.html	NetUtil.sys.mjs:...	html	143 B	42 B	Version	HTTP/1		
									Transferred	143 B (42 B size)	
									DNS Resolution	System	
									Response Headers (101 B)		
									Date: Tue, 15 Oct 2024 03:42:36 GMT		
									Server: BaseHTTP/0.6 Python/3.11.2		
									Request Headers (489 B)		
									Accept: text/html,application/xhtml+xml,application/javascript;q=0.8		
									Accept-Encoding: gzip, deflate		
									Accept-Language: en-US,en;q=0.5		
									Cache-Control: no-cache		
									Connection: keep-alive		
									Host: 104.197.59.40:8080		
									Pragma: no-cache		
									Priority: u=0, i		
									Upgrade-Insecure-Requests: 1		
									User-Agent: Mozilla/5.0 (Windows NT 10.0; WinI		
									X-Country: North Korea		
3 requests 68.88 kB / 69.07 kB transferred Finish: 28.37 s DOMContentLoaded: 340 ms load: 344 ms											

Received message from banned country: {"country": "North Korea"}

> !! 2024-10-14 23:42:36.571 webserver-vm Access denied from banned country: North Korea

- 501 Not implemented

> !! 2024-10-14 23:44:05.581 webserver-vm Unsupported method POST was used for /jeremybui_ps2/files/100.html

128.197.28.129 - - [15/Oct/2024 03:44:05] "POST /jeremybui_ps2/files/100.html HTTP/1.1" 501 - (Request count: 15)

9) Concurrent Client - Error/Time Out Appearance Analysis

- 10 concurrent clients: Broken pipe around 626 requests

34.21.33.201 - - [15/Oct/2024 14:57:34] "GET jeremybui_ps2/files/381.html HTTP/1.1" 200 - (Request count: 615)
The server has timed out!

- 15 concurrent clients: Times out around 529 requests

34.21.33.201 - - [15/Oct/2024 15:00:32] "GET jeremybui_ps2/files/412.html HTTP/1.1" 200 - (Request count: 529)
The server has timed out!

- 25 concurrent clients: Times out around 426 requests

```
34.86.221.138 - - [15/Oct/2024 03:22:55] "GET jeremybui_ps2/files/605.html HTTP/1.1" 200 - (Request count: 425)
34.86.221.138 - - [15/Oct/2024 03:22:55] "GET jeremybui_ps2/files/681.html HTTP/1.1" 200 - (Request count: 426)
^CTraceback (most recent call last):
```

```
in <code>petit esse inestiam doctore ea fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa
qui officia deserunt mollit anim id est laborum.\n<p>\n<a HREF="1927.html"> This is a link </a>\n<p>\n</body>\n</html>\n'
Requesting jeremybui_ps2/files/511.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/889.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/809.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/119.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/93.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/411.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/949.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/421.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/465.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/494.html from 104.197.59.40 8080
Timeout received
Requesting jeremybui_ps2/files/226.html from 104.197.59.40 8080
Timeout received
```

- 50 concurrent clients: Times out around 199 requests

```
34.86.221.138 - - [15/Oct/2024 03:17:00] "GET jeremybui_ps2/files/980.html HTTP/1.1" 200 - (Request count: 199)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:17:00] "GET jeremybui_ps2/files/23.html HTTP/1.1" 200 - (Request count: 200)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:17:01] "GET jeremybui_ps2/files/662.html HTTP/1.1" 200 - (Request count: 201)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:17:01] "GET jeremybui_ps2/files/424.html HTTP/1.1" 200 - (Request count: 202)
The server has timed out!
```

- 75 concurrent clients: Times out around 100 requests)

```
34.86.221.138 - - [15/Oct/2024 03:13:56] "GET jeremybui_ps2/files/998.html HTTP/1.1" 200 - (Request count: 99)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:13:57] "GET jeremybui_ps2/files/676.html HTTP/1.1" 200 - (Request count: 101)
34.86.221.138 - - [15/Oct/2024 03:13:57] "GET jeremybui_ps2/files/387.html HTTP/1.1" 200 - (Request count: 102)
34.86.221.138 - - [15/Oct/2024 03:13:57] "GET jeremybui_ps2/files/338.html HTTP/1.1" 200 - (Request count: 103)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:13:57] "GET jeremybui_ps2/files/93.html HTTP/1.1" 200 - (Request count: 104)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:13:57] "GET jeremybui_ps2/files/459.html HTTP/1.1" 200 - (Request count: 105)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:13:57] "GET jeremybui_ps2/files/336.html HTTP/1.1" 200 - (Request count: 106)
The server has timed out!
34.86.221.138 - - [15/Oct/2024 03:13:57] "GET jeremybui_ps2/files/371.html HTTP/1.1" 200 - (Request count: 107)
The server has timed out!
```

```

Requesting jeremybui_ps2/files/361.html from 104.197.59.40 8080
Traceback (most recent call last):
  File "/home/jbui/http-client.py", line 205, in <module>
    main()
  File "/home/jbui/http-client.py", line 199, in main
    make_request(args.domain, args.port, country, ip, filename, \
  File "/home/jbui/http-client.py", line 151, in make_request
    res = conn.getresponse()
          ^^^^^^^^^^^^^^^^^
  File "/usr/lib/python3.11/http/client.py", line 1374, in getresponse
    response.begin()
  File "/usr/lib/python3.11/http/client.py", line 318, in begin
    version, status, reason = self._read_status()
                              ^^^^^^^^^^^^^^^^^
  File "/usr/lib/python3.11/http/client.py", line 279, in _read_status
    line = str(self.fp.readline(_MAXLINE + 1), "iso-8859-1")
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "/usr/lib/python3.11/socket.py", line 706, in readinto
    return self._sock.recv_into(b)
           ^^^^^^^^^^^^^^^^^^^^^^
ConnectionResetError: [Errno 104] Connection reset by peer
Stopping all clients...

```

- 100 concurrent clients: Times out around 66 requests

```

34.86.221.138 - - [15/Oct/2024 03:11:36] "GET jeremybui_ps2/files/892.html HTTP/1.1" 200 - (Request count: 65)
34.86.221.138 - - [15/Oct/2024 03:11:36] "GET jeremybui_ps2/files/829.html HTTP/1.1" 200 - (Request count: 66)
The server has timed out!

```

Cost

Your total cost (October 8 – 15, 2024) ⓘ

Cost		Credits used
\$1.57	—	\$1.57
		View details