Azure Front Door – Serving VM Application and Static Website Using a Single Endpoint

1. Introduction

This document explains the Proof of Concept (POC) for configuring **Azure Front Door (Standard)** to serve content from **two different origins**:

- An **Azure Virtual Machine (VM)** hosting a dynamic web application
- An **Azure Storage Account** hosting a static website

Both applications are accessed using **a single Azure Front Door endpoint URL** through **path-based routing**.

2. Task Description

Task Assigned

I have been assigned a task to configure **Azure Front Door (CDN)** to serve content from two different origins—an **Azure Virtual Machine hosting a sample application** and an **Azure Storage Account hosting a static website**.

The goal is to configure **routing rules** in Azure Front Door so that both the VM-based application and the static website can be accessed through **a single Front Door endpoint URL**, and to validate access through that endpoint.

3. High-Level Architecture

Architecture Flow

User (Browser)

|

v

Azure Front Door (Global CDN + L7 Load Balancer)

|

|----> Azure VM (Dynamic Web Application)

|

|----> Azure Storage Account (Static Website)

Why This Architecture?

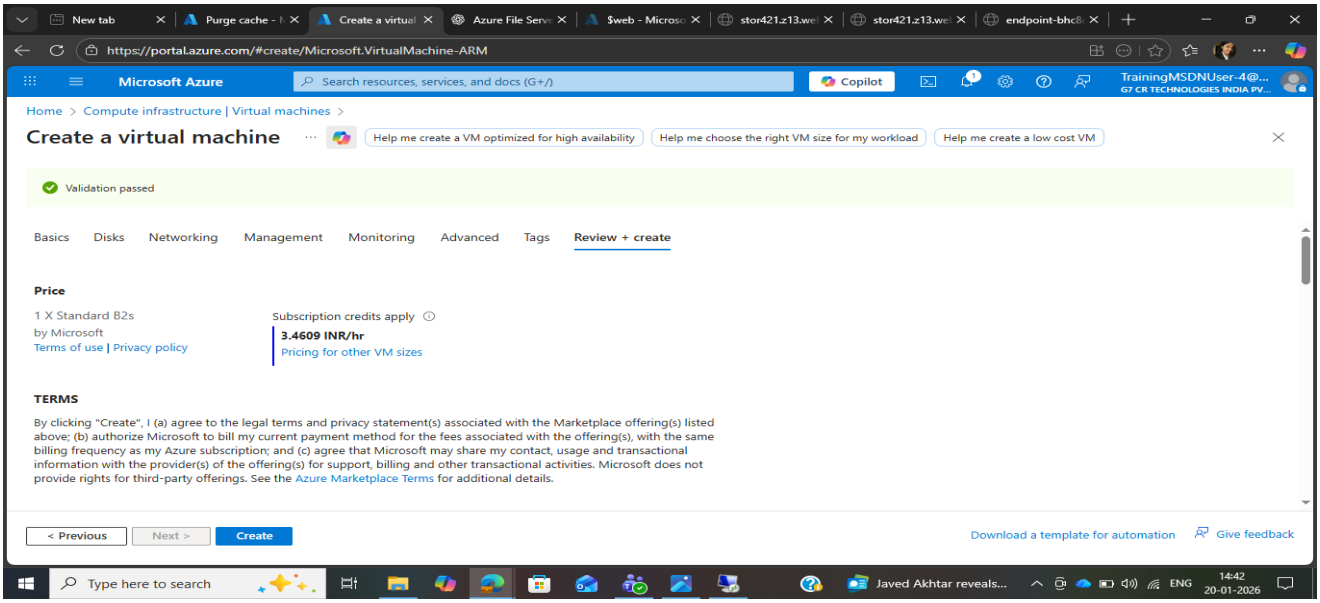
- Azure Front Door provides:
    - Global entry point for applications
    - Content Delivery Network (CDN)
    - Layer-7 (HTTP/HTTPS) load balancing
- Multiple backend services can be exposed using:
    - A **single public URL**
    - **Path-based routing**

4. Prerequisites

4.1 Azure Virtual Machine

Configuration:

- VM running Windows
- Web server installed (IIS)
- Sample web application running on:
    - Port **80 (HTTP)** or **443 (HTTPS)**
- Public IP enabled
- Network Security Group (NSG) allows HTTP/HTTPS traffic



Purpose:

Azure Front Door must be able to **publicly reach the VM** to forward client requests.

4.2 Azure Storage Account (Static Website)

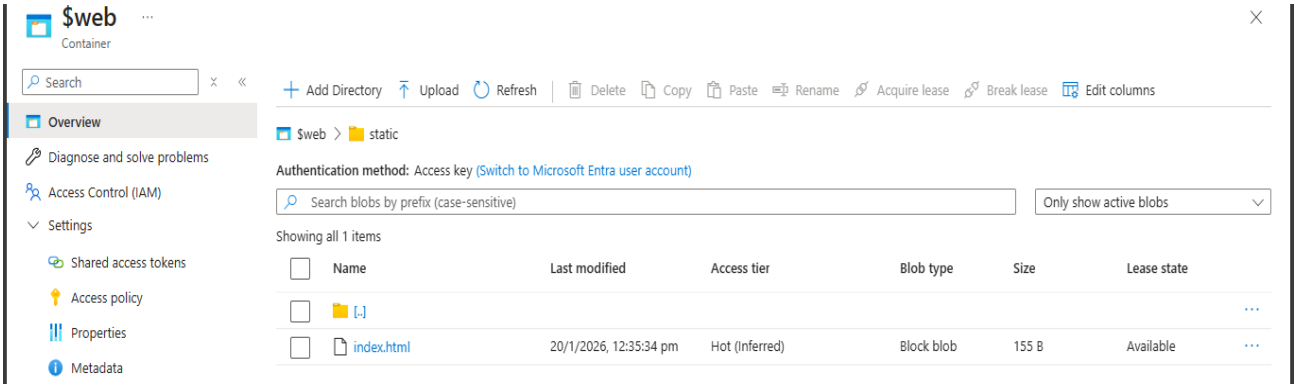
Configuration:

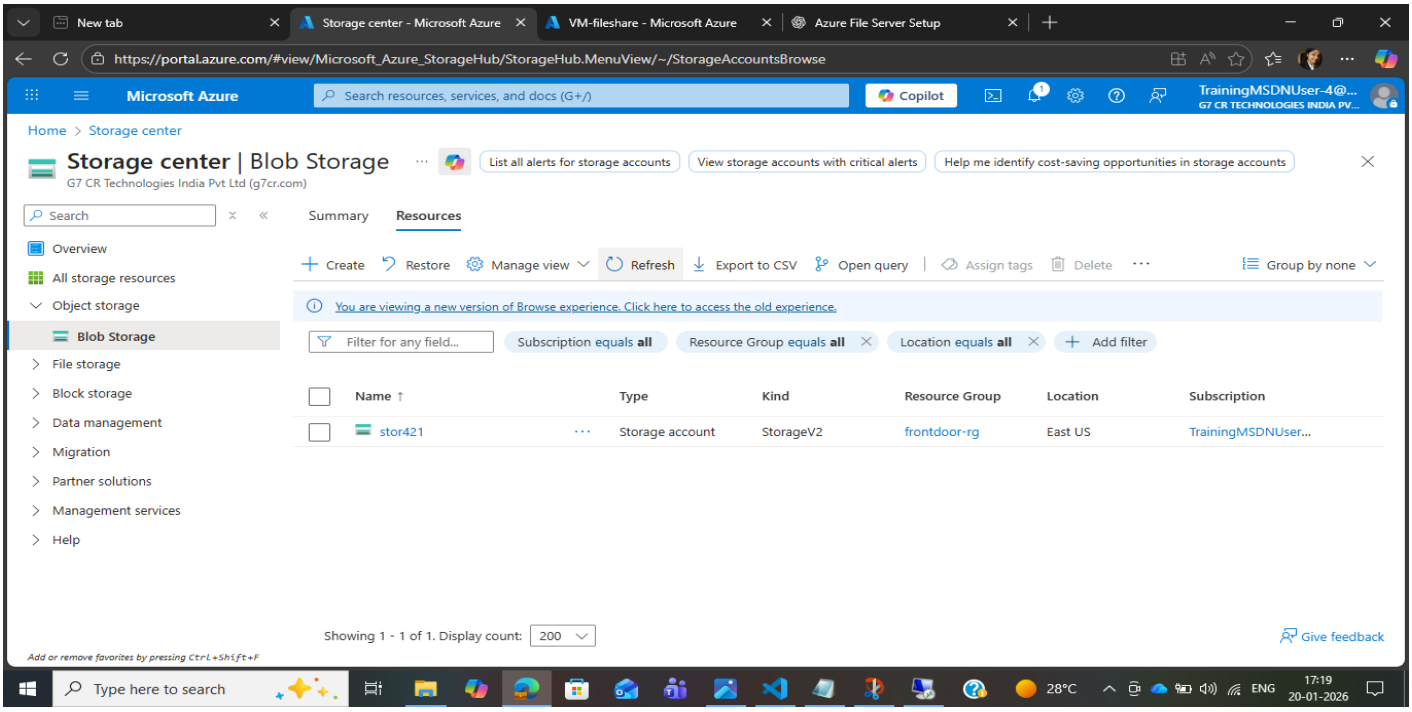
- Static Website feature enabled
- index.html uploaded
- Static website endpoint URL noted

https://<storage-name>.z13.web.core.windows.net

Purpose:

The storage account acts as a **static content origin** for HTML, CSS, and JavaScript files.

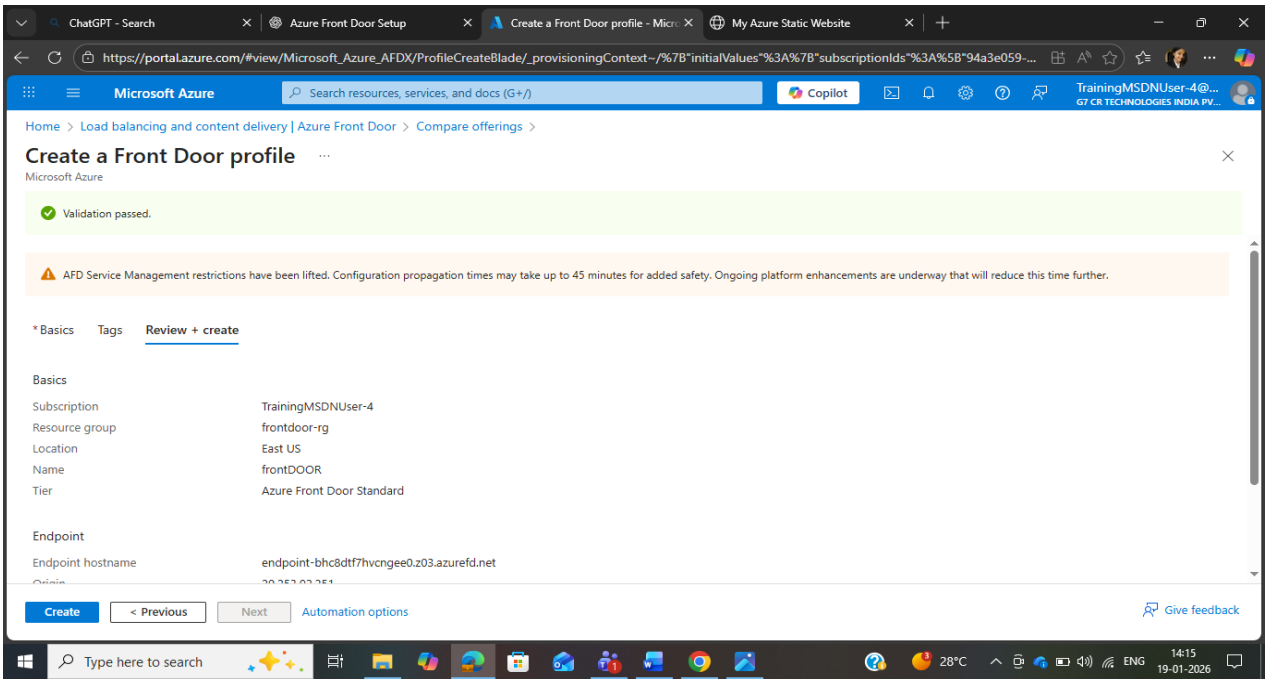




5. Azure Front Door Creation

Step 1: Create Azure Front Door

1. Login to **Microsoft Azure Portal**
2. Search for **Azure Front Door**
3. Click **Create**
4. Select:
    - Tier: **Front Door Standard**
    - Resource Group
    - Front Door name (DNS name)

5. 

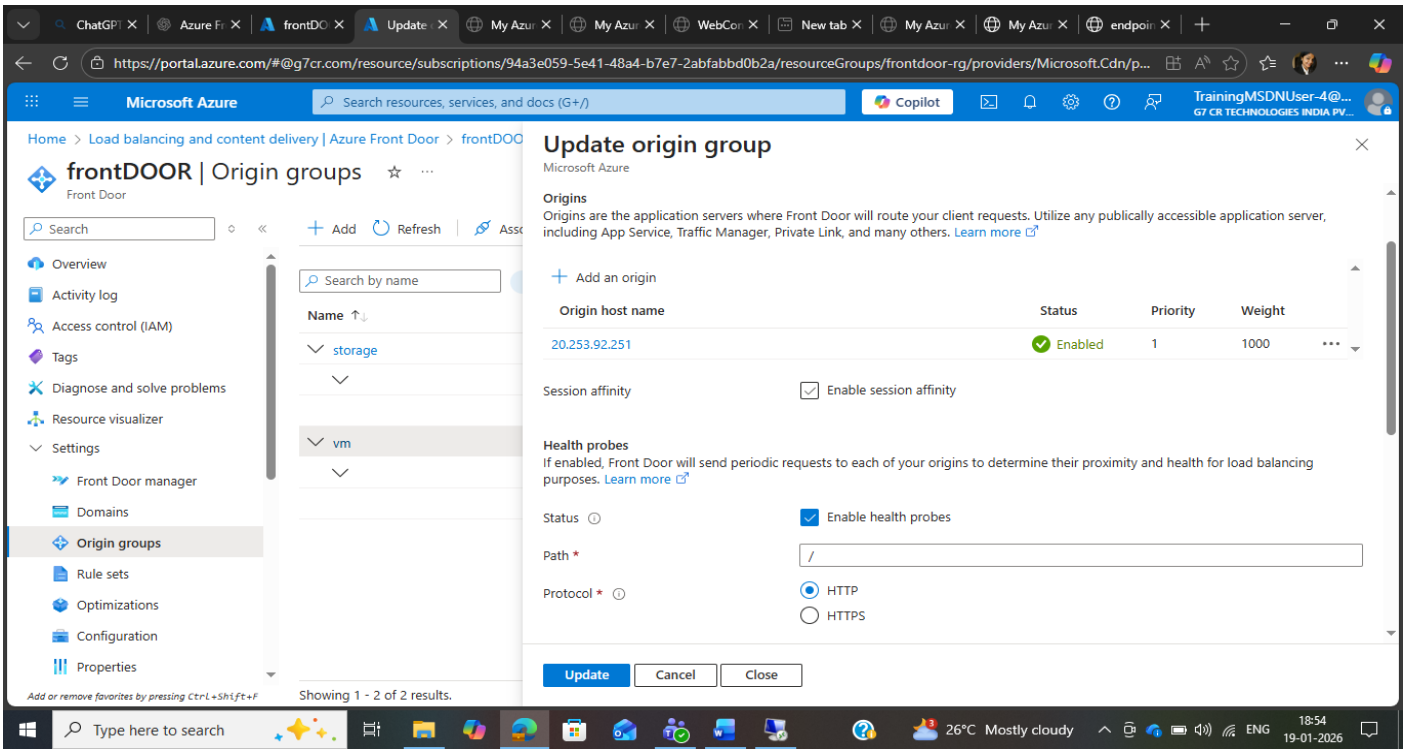
Purpose:
This creates a **global Front Door endpoint** that users will access.

6. Origin Configuration

6.1 Origin Group – Azure VM

1. Navigate to **Front Door → Origin Groups**
2. Create a new origin group:
    - Name: vm
3. Add an origin:
    - Origin type: **Custom**
    - Host name: **VM Public IP or DNS**
    - HTTP port: **80**
    - HTTPS port: **443**

Purpose:
This tells Azure Front Door where to send requests meant for the **dynamic VM-based application**.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Copilot
Home > Load balancing and content delivery | Azure Front Door > frontDOO
frontDOOR | Origin groups
Front Door
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Add
Refresh
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Resource visualizer
Settings
Front Door manager
Domains
Origin groups
Rule sets
Optimizations
Configuration
Properties
Search by name
Name
storage
vm
Showing 1 - 2 of 2 results.
Update origin group
Microsoft Azure
Origins
Origins are the application servers where Front Door will route your client requests. Utilize any publically accessible application server, including App Service, Traffic Manager, Private Link, and many others. Learn more
Add an origin
Origin host name
Status
Priority
Weight
20.253.92.251
Enabled
1
1000
Session affinity
Enable session affinity
Health probes
If enabled, Front Door will send periodic requests to each of your origins to determine their proximity and health for load balancing purposes. Learn more
Status
Enable health probes
Path *
/
Protocol *
HTTP
HTTPS
Update
Cancel
Close
Type here to search
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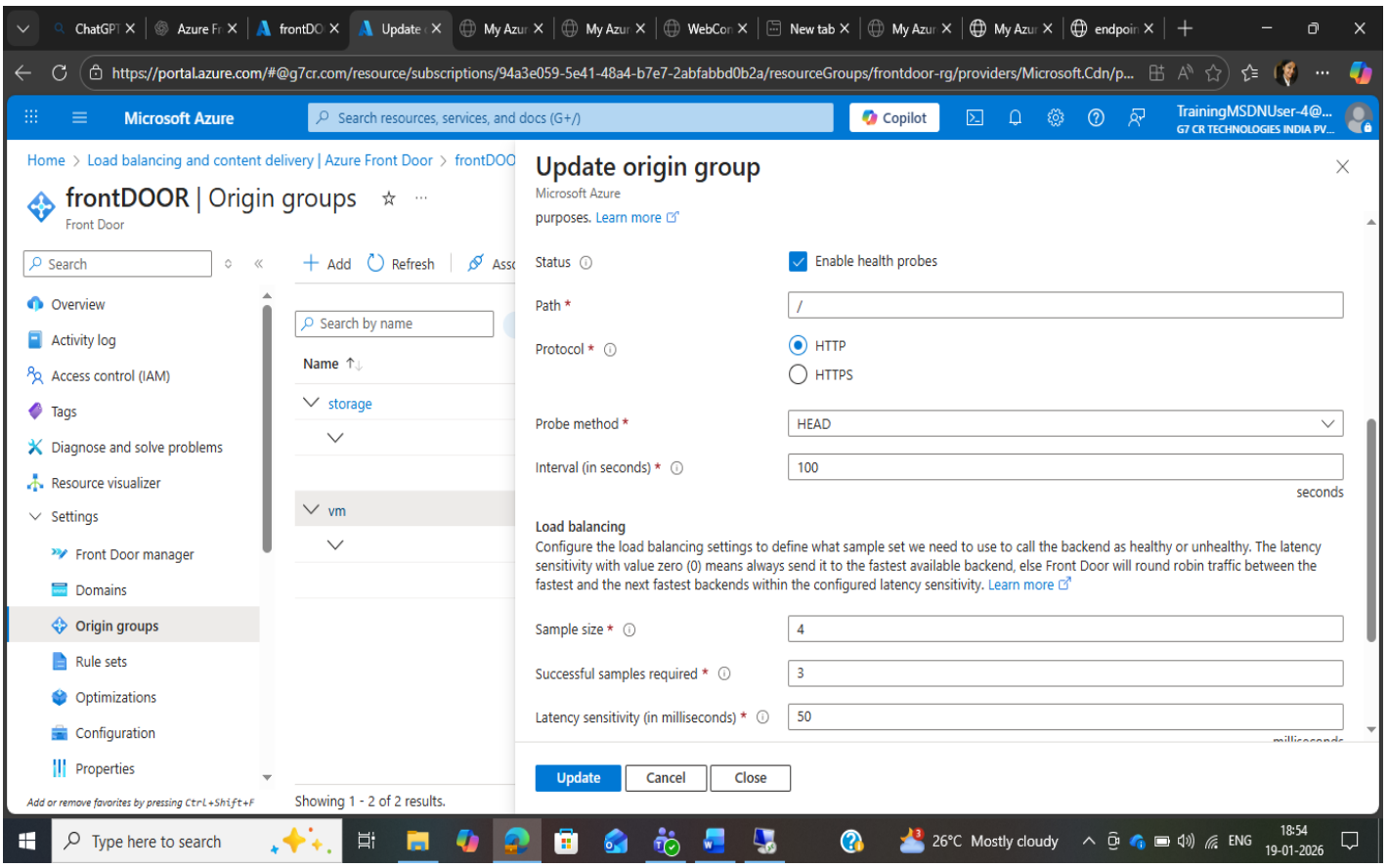
ENG
18:54
19-01-2026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HTTPS
Probe method *
HEAD
Interval (in seconds) *
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seconds
Load balancing
Configure the load balancing settings to define what sample set we need to use to call the backend as healthy or unhealthy. The latency sensitivity with value zero (0) means always send it to the fastest available backend, else Front Door will round robin traffic between the fastest and the next fastest backends within the configured latency sensitivity. Learn more
Sample size *
4
Successful samples required *
3
Latency sensitivity (in milliseconds) *
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Update
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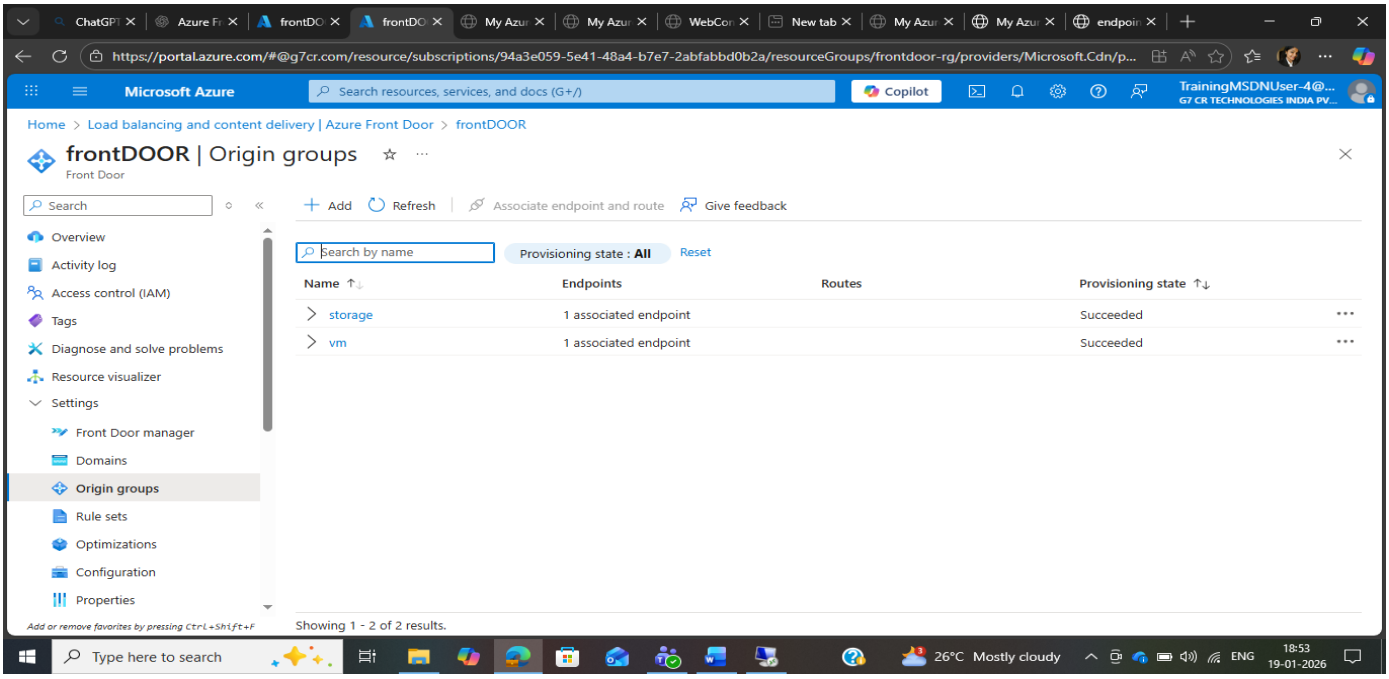
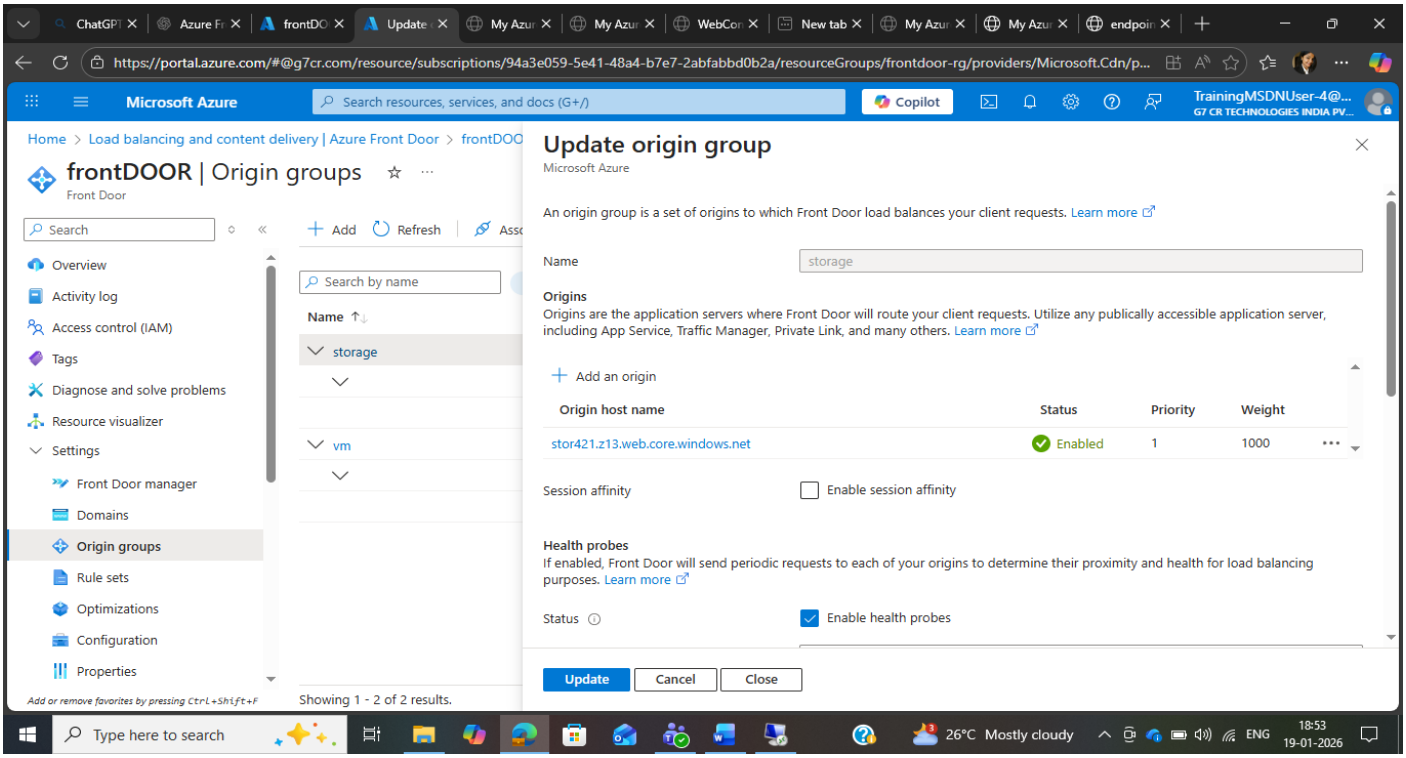


6.2 Origin Group – Azure Storage Static Website

1. Create another origin group:
    - Name: storage
2. Add an origin:
    - Origin type: **Storage (Static Website)**
    - Host name: <storage-name>.z13.web.core.windows.net
    - Protocol: **HTTPS**

Purpose:

This allows Azure Front Door to serve **static website content** directly from Azure Storage.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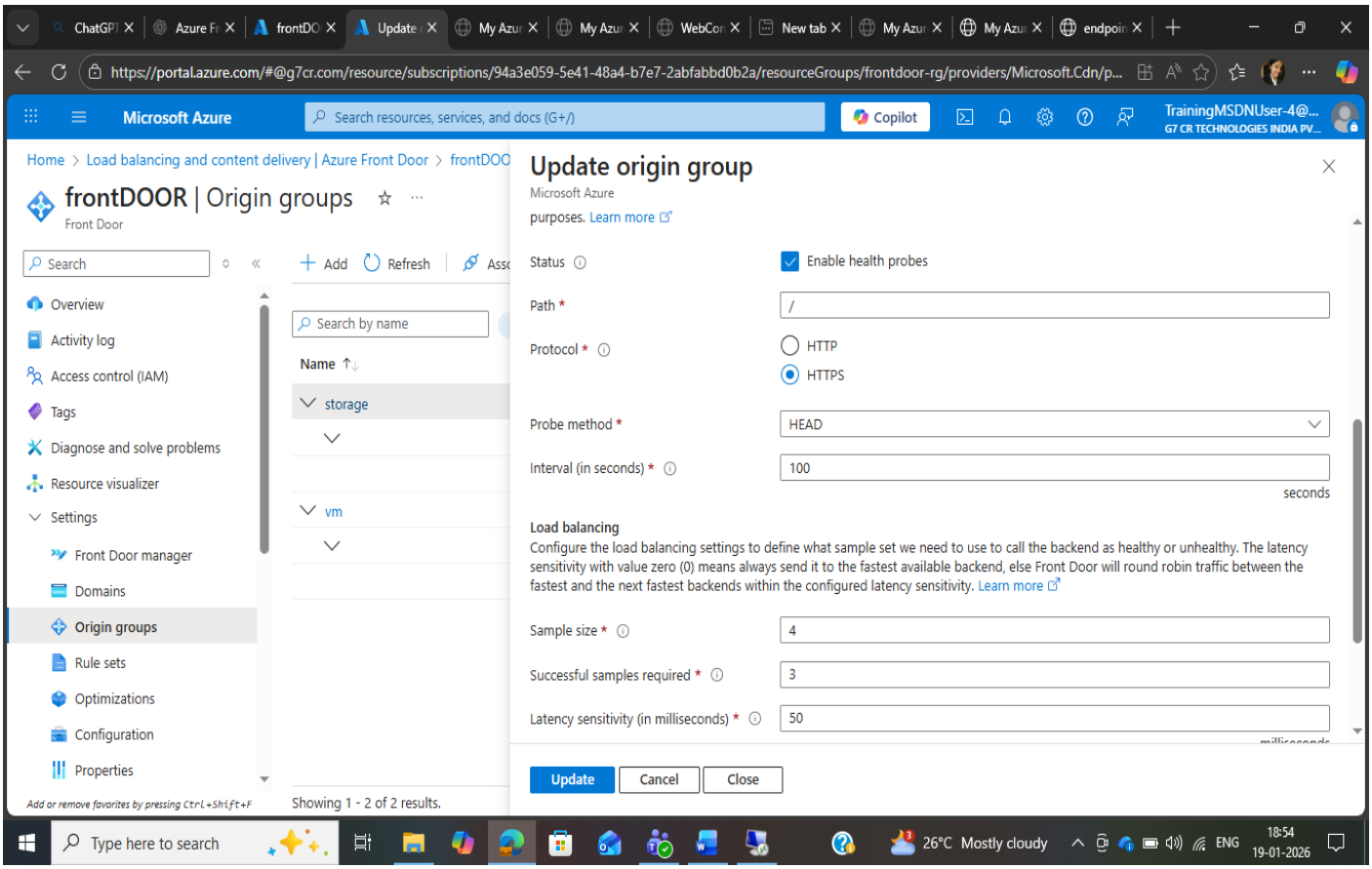
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Successful samples required *
3
Latency sensitivity (in milliseconds) *
50
Update
Cancel
Close
Showing 1 - 2 of 2 results.
Type here to search
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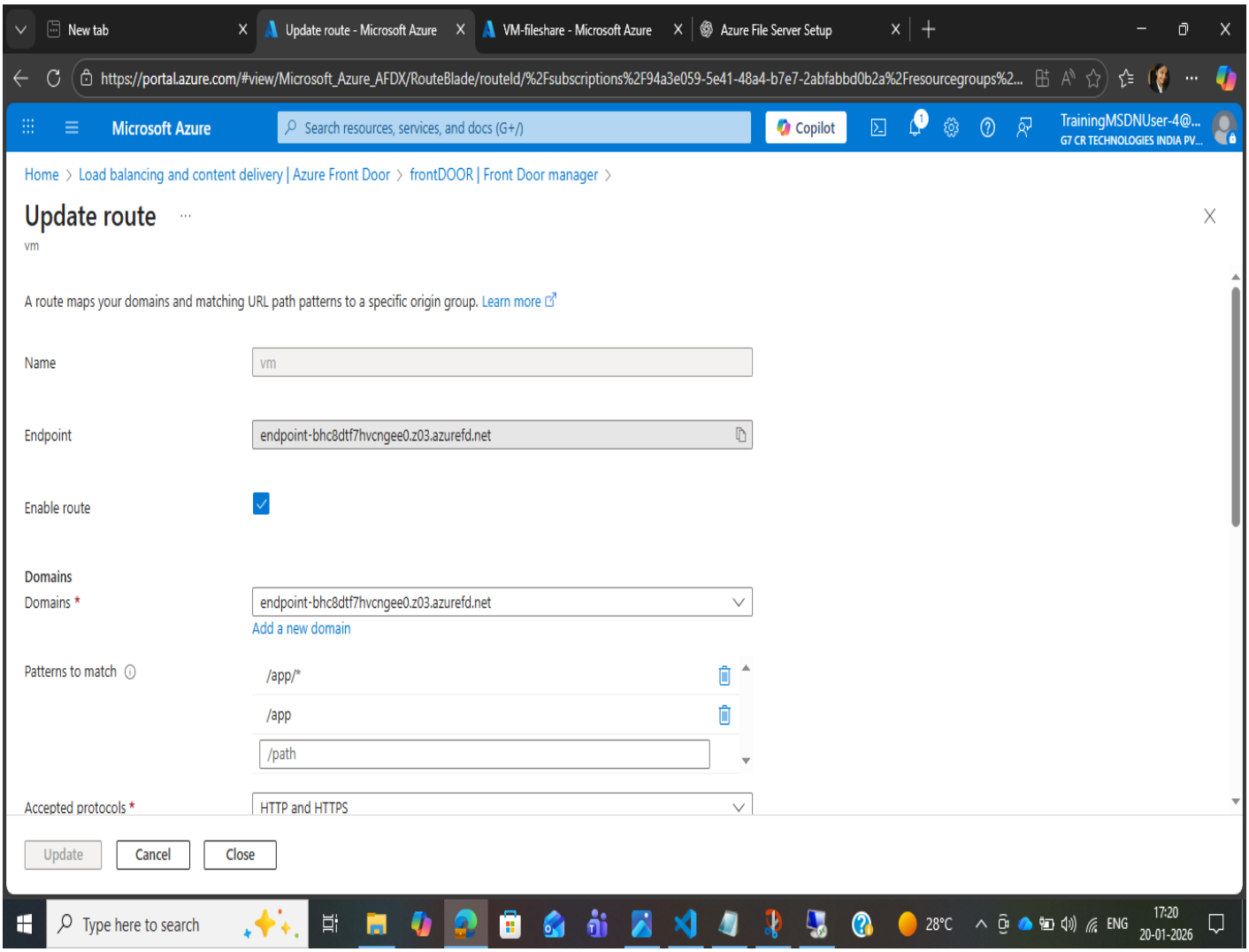
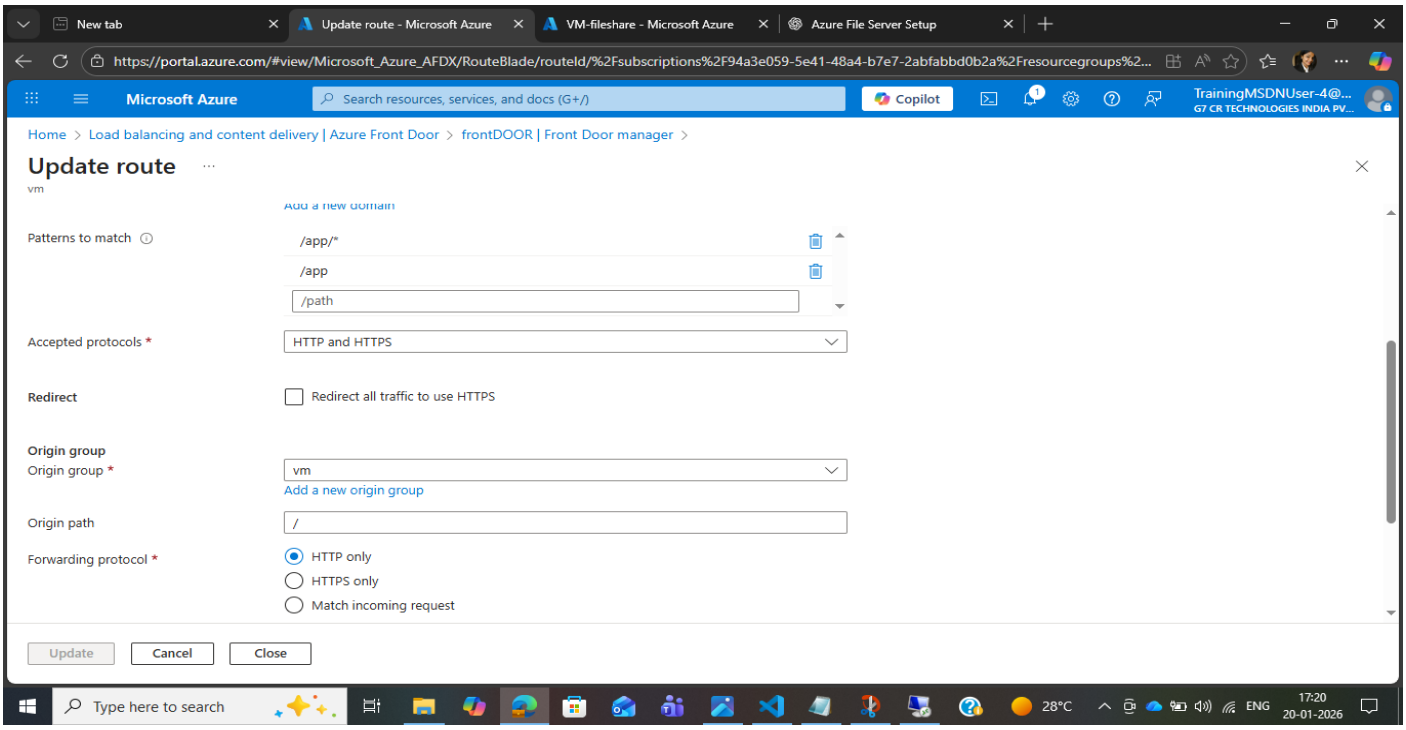
7.1 Route for VM Application

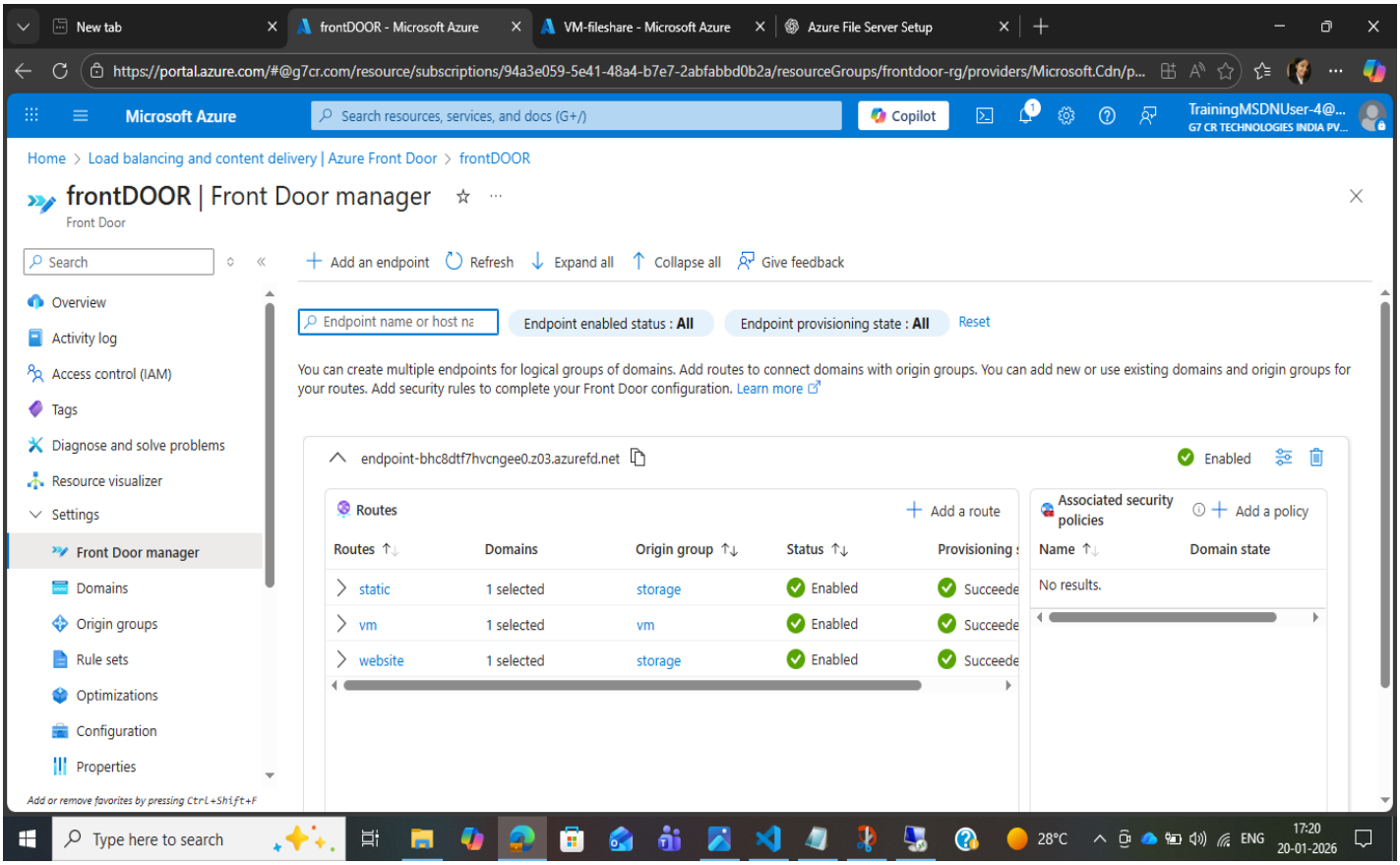
Configuration:

- Route name: vm
- Domain: Front Door default domain
- Path pattern: /app/*
- Origin group: vm
- Accepted protocols: HTTP & HTTPS

Purpose:
Any request starting with /app is routed to the **Azure VM**.







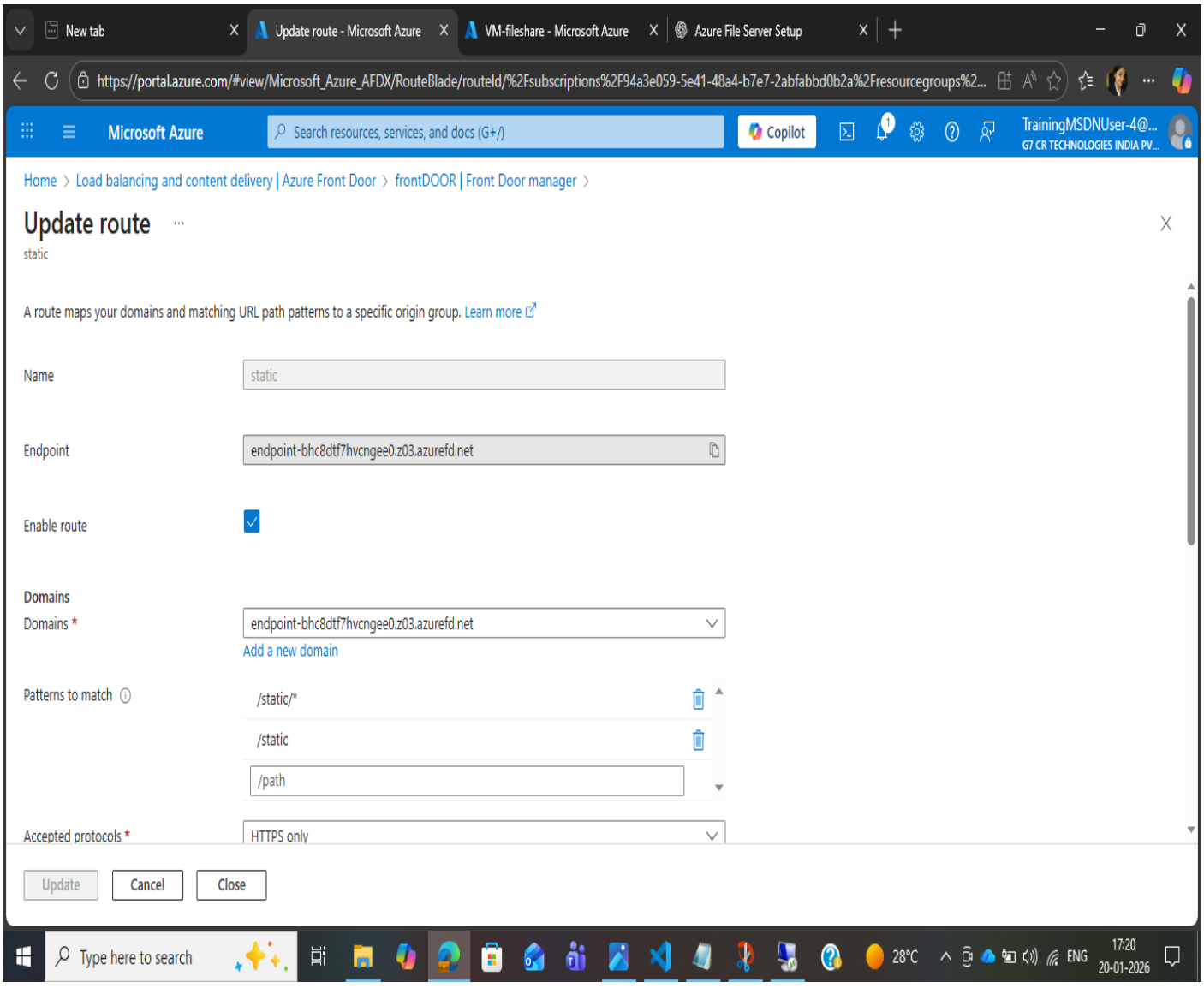
https://<frontdoor-name>.azurefd.net/app

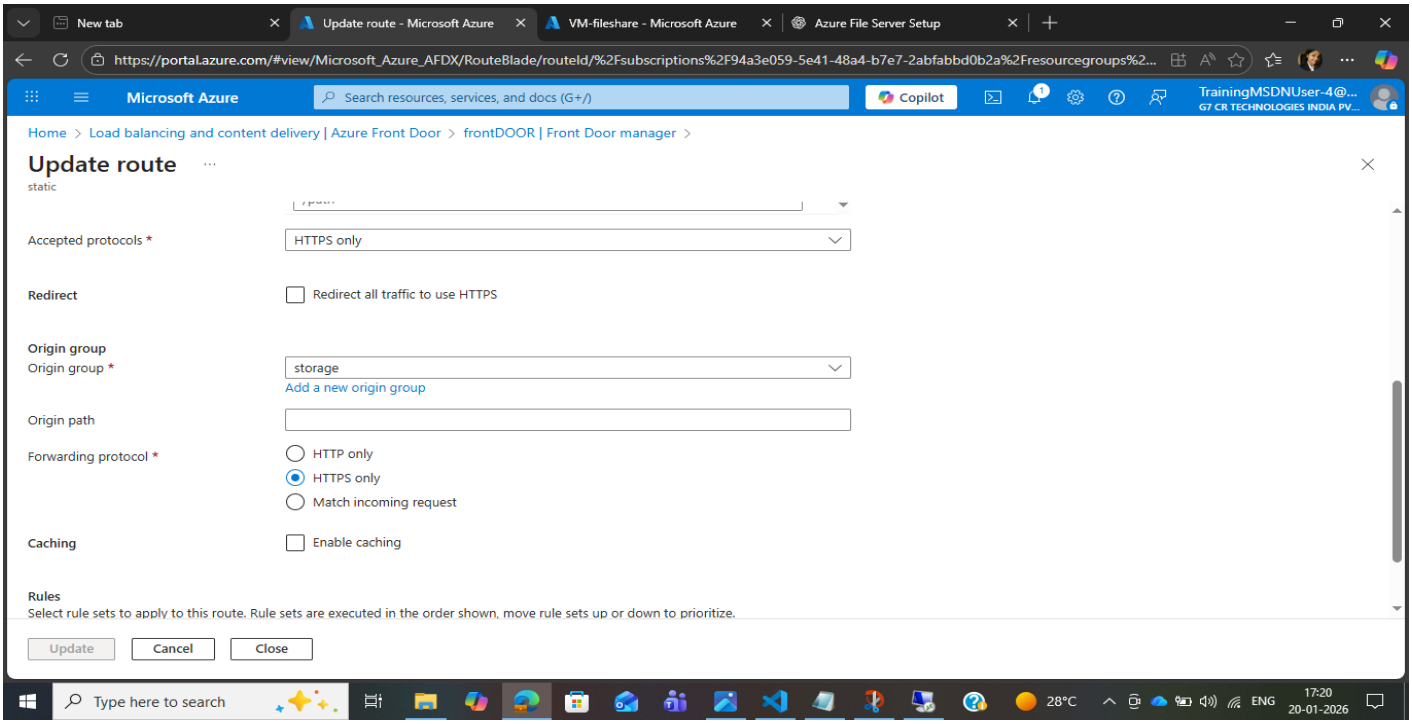
7.2 Route for Static Website

Configuration:

- Route name: static
- Path pattern:/static /*
- Origin group: storage

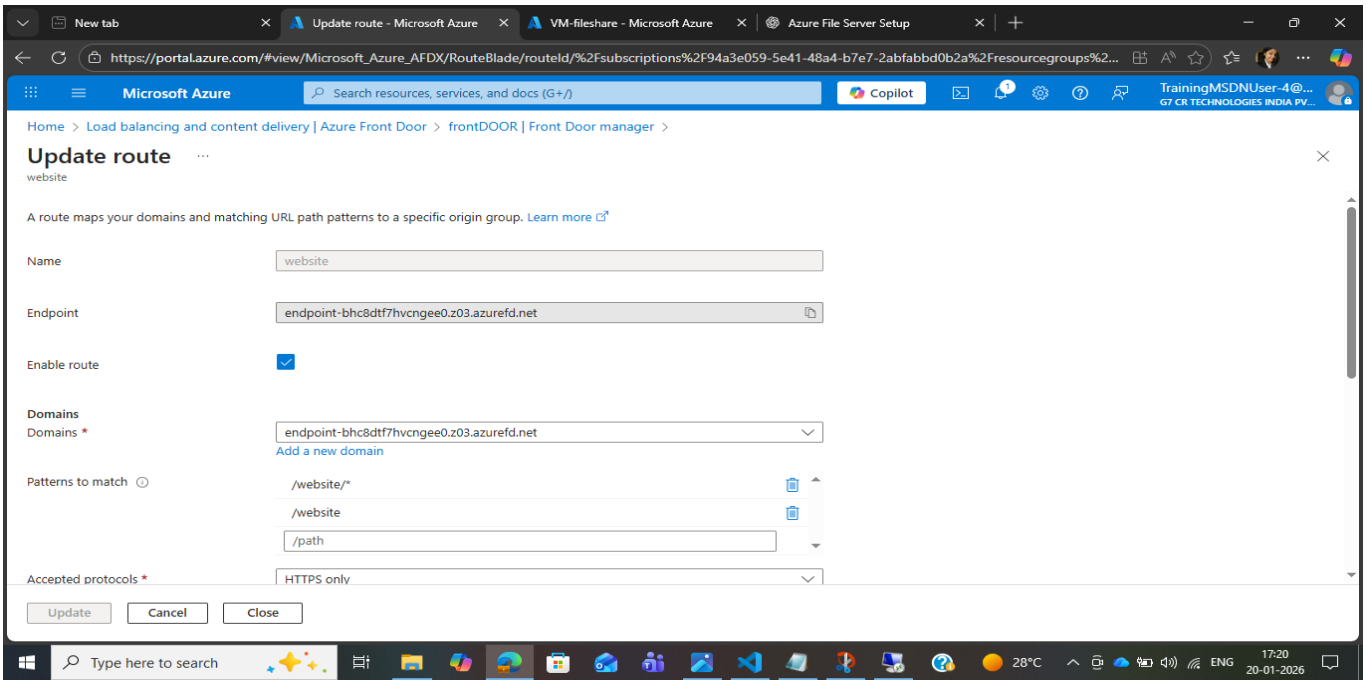
Purpose:
This is the **default route**, which serves static content from Azure Storage.

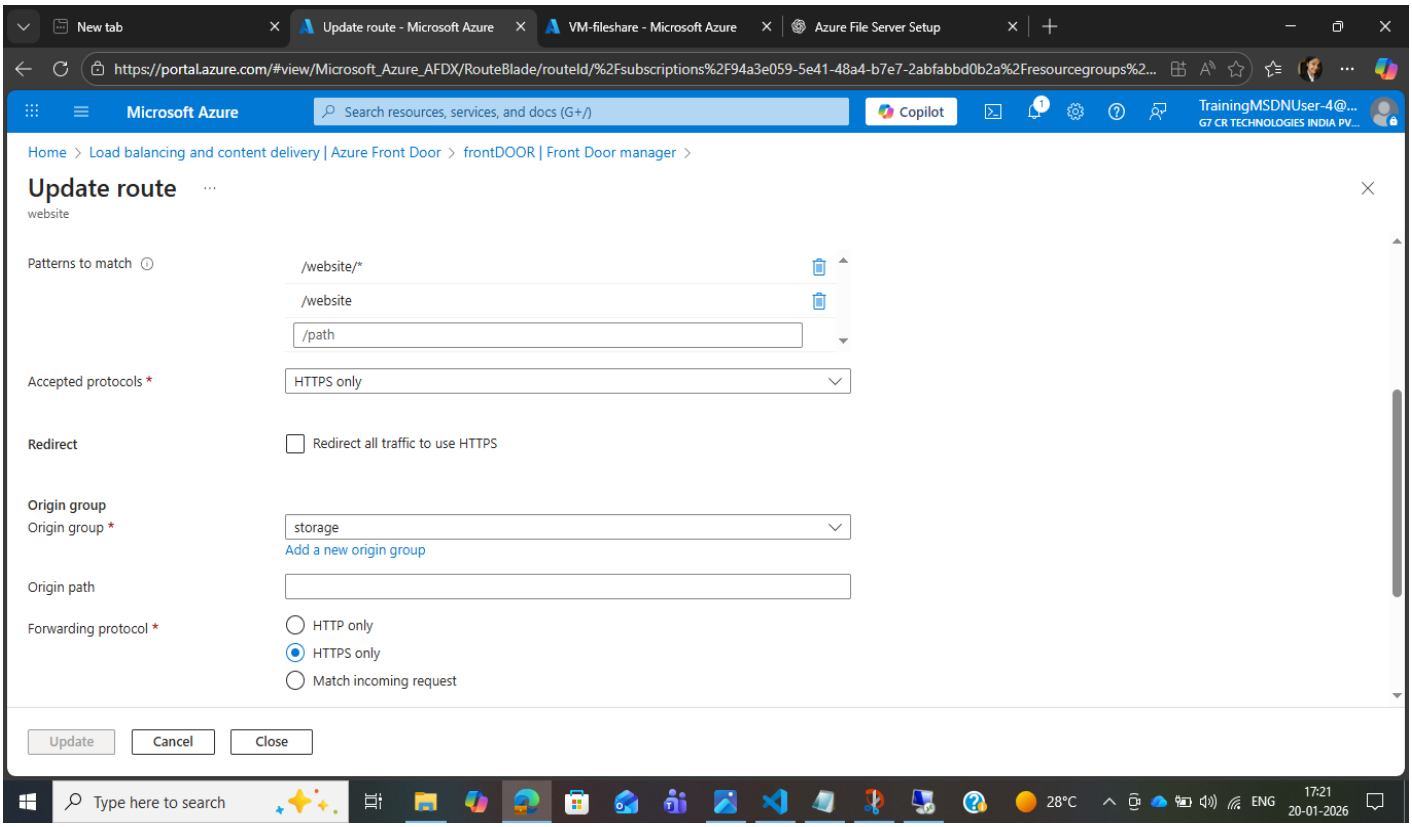




Configuration:

- Route name: static
- Path pattern:/website /*
- Origin group: storage




New tab
Update route - Microsoft Azure
VM-fileshare - Microsoft Azure
Azure File Server Setup
https://portal.azure.com/#view/Microsoft_Azure_AFDX/RouteBlade/routeId/%2Fsubscriptions%2F94a3e059-5e41-48a4-b7e7-2abfabbd0b2a%2Fresourcegroups%2...
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TrainingMSDNUser-4@...
G7 CR TECHNOLOGIES INDIA PV...
Home > Load balancing and content delivery | Azure Front Door > frontDOOR | Front Door manager >
Update route
website
Patterns to match
/website/*
/website
/path
Accepted protocols *
HTTPS only
Redirect
Redirect all traffic to use HTTPS
Origin group
Origin group *
storage
Add a new origin group
Origin path
Forwarding protocol *
HTTP only
HTTPS only
Match incoming request
Update
Cancel
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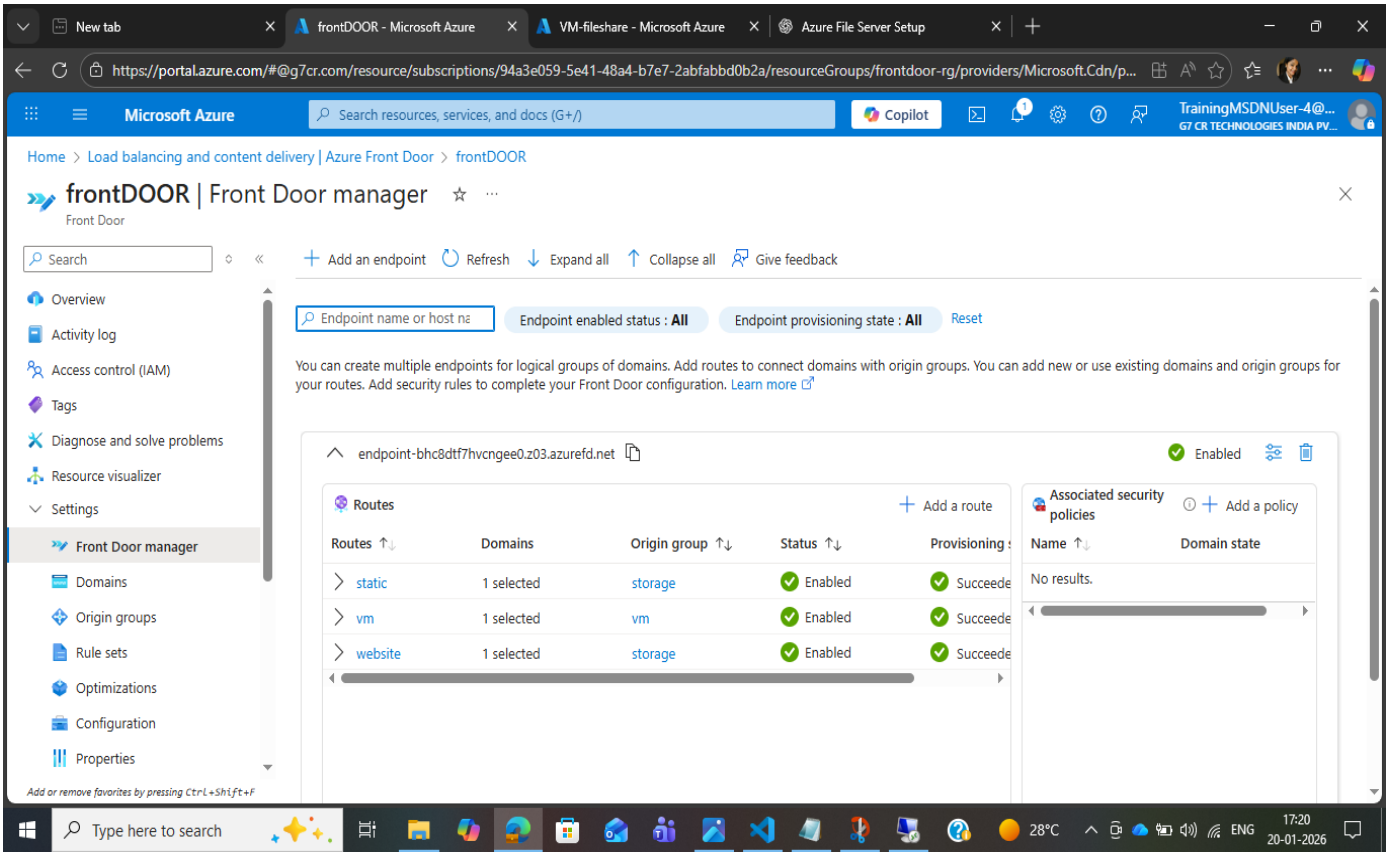
New tab
frontDOOR - Microsoft Azure
VM-fileshare - Microsoft Azure
Azure File Server Setup
https://portal.azure.com/#@g7cr.com/resource/subscriptions/94a3e059-5e41-48a4-b7e7-2abfabbd0b2a/resourceGroups/frontdoor-rg/providers/Microsoft.Cdn/p...
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Collapse all
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Optimizations
Configuration
Properties
Endpoint name or host na
Endpoint enabled status : All
Endpoint provisioning state : All
Reset
You can create multiple endpoints for logical groups of domains. Add routes to connect domains with origin groups. You can add new or use existing domains and origin groups for your routes. Add security rules to complete your Front Door configuration. Learn more
endpoint-bhc8dtf7hvcngee0.z03.azurefd.net
Enabled
Routes
Add a route
Associated security policies
Add a policy
Routes
Domains
Origin group
Status
Provisioning
Name
Domain state
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storage
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vm
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vm
Enabled
Succeede
website
1 selected
storage
Enabled
Succeede
No results.
Add or remove favorites by pressing Ctrl+Shift+F
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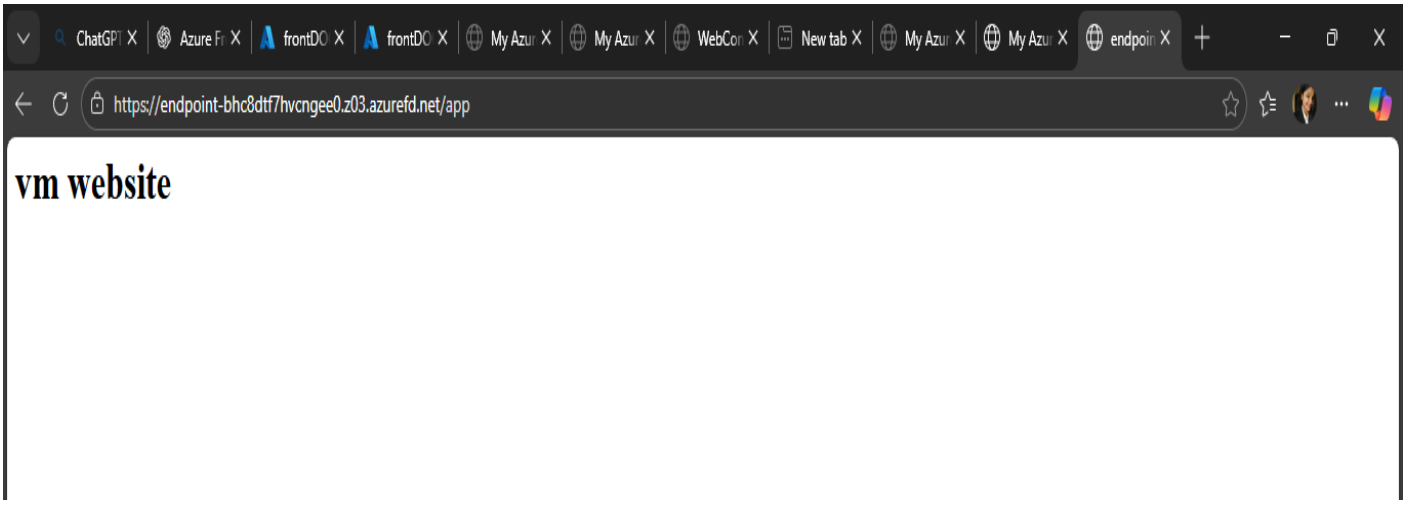
8. Validation and Testing

8.1 Test VM Application

https://<frontdoor-name>.azurefd.net/app

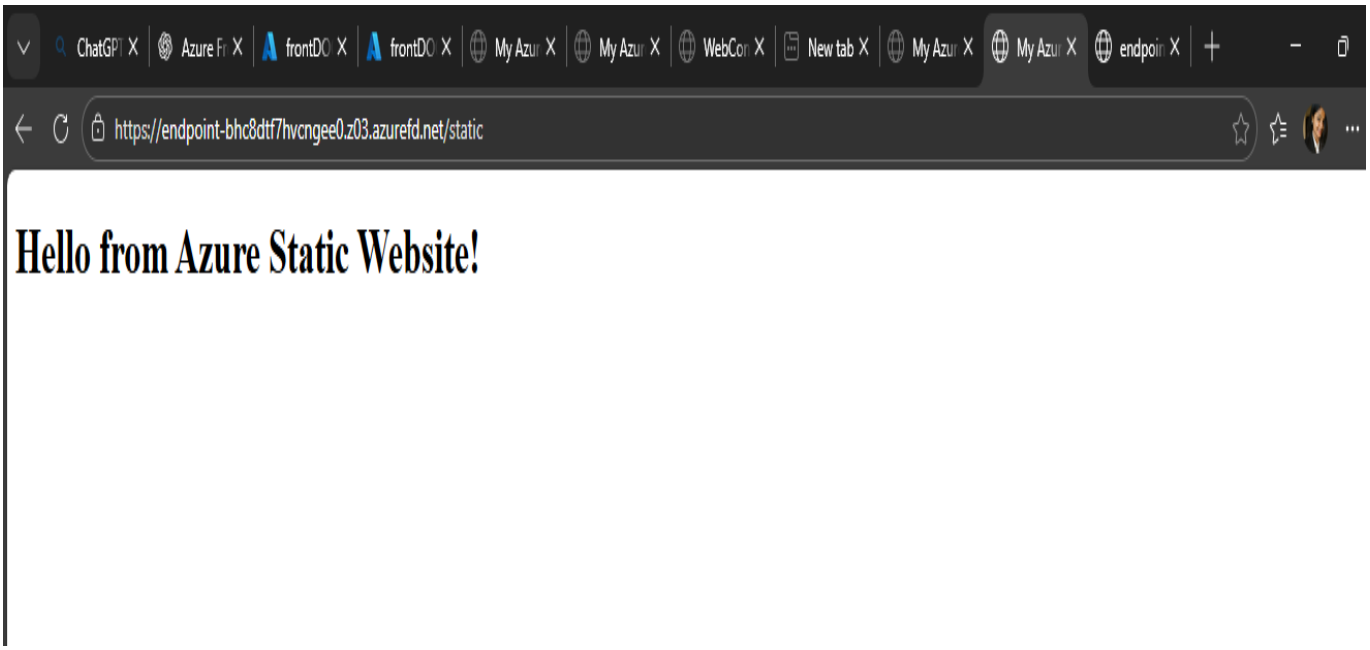


VM-hosted dynamic application loads successfully

8.2 Test Static Website

https://<frontdoor-name>.azurefd.net/static

https://<frontdoor-name>.azurefd.net/website



9. Explanation

“Azure Front Door is a Layer-7 global load balancer and CDN service. In this POC, I configured Azure Front Door with two origins—an Azure Virtual Machine for dynamic content and an Azure Storage Account for static content. Using path-based routing, both services were exposed through a single Front Door endpoint, improving performance, scalability, and centralized access management.”

10. Conclusion

This POC successfully demonstrates:

- Centralized application access using Azure Front Door
- Path-based routing to multiple backend services
- Improved performance and scalability using CDN capabilities
- Simplified architecture with a single public endpoint