

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

Validation passed

Price
1 X Standard B2s by Microsoft
Subscription credits apply
3.4609 INR/hr
[Pricing for other VM sizes](#)

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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.

\$web Container

Overview

Authentication method: Access key ([Switch to Microsoft Entra user account](#))

Showing all 1 items

Name	Last modified	Access tier	Blob type	Size	Lease state
index.html	20/1/2026, 12:35:34 pm	Hot (Inferred)	Block blob	155 B	Available

The screenshot shows the Microsoft Azure Storage center - Blob Storage page. The URL is https://portal.azure.com/#view/Microsoft_Azure_StorageHub/StorageHub.MenuView/-~/StorageAccountsBrowse. The page displays a list of storage accounts under the 'Resources' tab. There is one account listed:

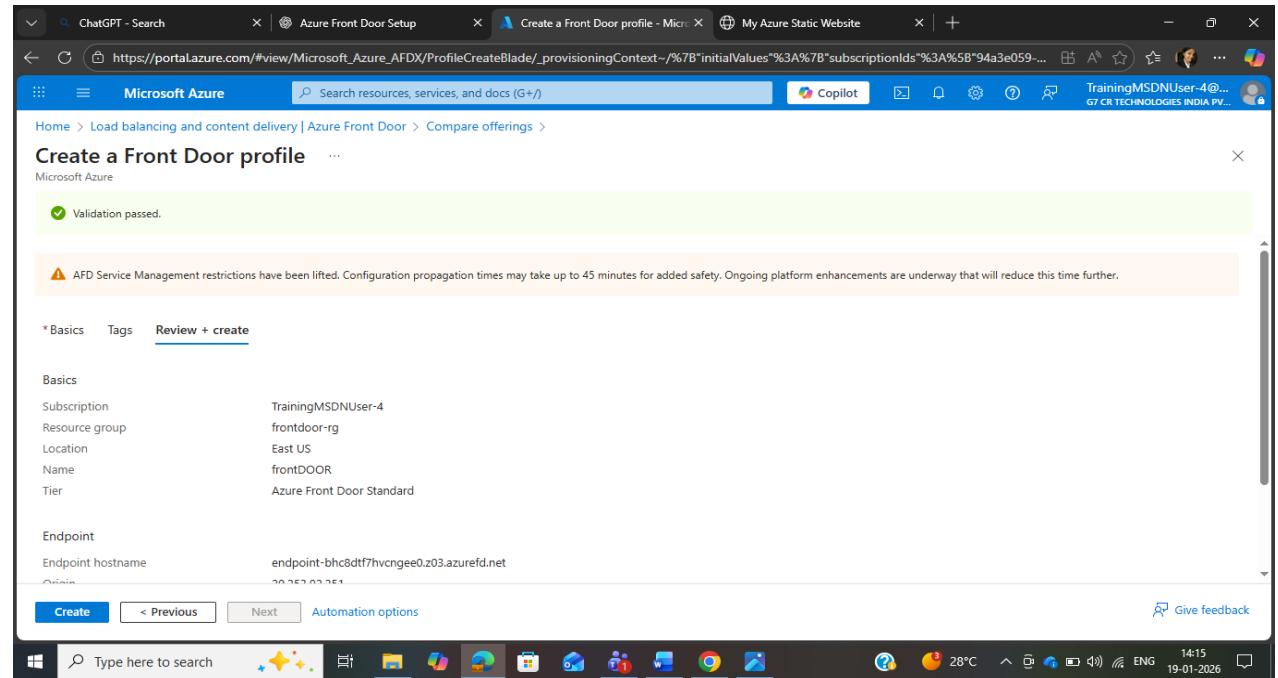
Name	Type	Kind	Resource Group	Location	Subscription	
stor421	...	Storage account	StorageV2	frontdoor-rg	East US	TrainingMSDNUser...

The left sidebar shows navigation options like Overview, All storage resources, Object storage, and Blob Storage. The Blob Storage section is currently selected. The bottom of the screen shows the Windows taskbar with various pinned icons and system status.

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)



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**.

Microsoft Azure | ChatGPT | Azure Front Door | frontDOO | Update | My Azure | My Azure | WebCntr | New tab | My Azure | My Azure | endpoint | +

https://portal.azure.com/#@g7cr.com/resource/subscriptions/94a3e059-5e41-48a4-b7e7-2abfabbd0b2a/resourceGroups/frontdoor-rg/providers/Microsoft.Cdn/providers/Microsoft.Cdn/p...

Microsoft Azure | Search resources, services, and docs (G+)

Copilot

TrainingMSDNUser-4@... G7 CR TECHNOLOGIES INDIA PVT...

frontDOOR | Origin groups

Front Door

Search | Add | Refresh | Associate

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

Update | Cancel | Close

Update origin group

Origins

Origins are the application servers where Front Door will route your client requests. Utilize any publicly 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	<input checked="" type="checkbox"/> 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

26°C Mostly cloudy 18:54 19-01-2026

Microsoft Azure | ChatGPT | Azure Front Door | frontDOO | Update | My Azure | My Azure | WebCntr | New tab | My Azure | My Azure | endpoint | +

https://portal.azure.com/#@g7cr.com/resource/subscriptions/94a3e059-5e41-48a4-b7e7-2abfabbd0b2a/resourceGroups/frontdoor-rg/providers/Microsoft.Cdn/providers/Microsoft.Cdn/p...

Microsoft Azure | Search resources, services, and docs (G+)

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Search by name

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Status Enable health probes

Path * /

Protocol * HTTP HTTPS

Probe method * HEAD

Interval (in seconds) * 100

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) * 50

Update | Cancel | Close

Type here to search

26°C Mostly cloudy 18:54 19-01-2026

Name	Endpoints	Routes	Provisioning state
> storage	1 associated endpoint		Succeeded
> vm	1 associated endpoint		Succeeded

6.2 Origin Group – Azure Storage Static Website

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

Purpose:

This allows Azure Front Door to serve **static website content** directly from Azure Storage.

<https://portal.azure.com/#@g7cr.com/resource/subscriptions/94a3e059-5e41-48a4-b7e7-2abfabbd0b2a/resourceGroups/frontdoor-rg/providers/Microsoft.Cdn/providers/Storage>

Update origin group

An origin group is a set of origins to which Front Door load balances your client requests. [Learn more](#)

Name: storage

Origins:

Origin host name	Status	Priority	Weight
stor421.z13.web.core.windows.net	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

Update **Cancel** **Close**

frontDOOR | Origin groups

Search by name: storage

Origin host name: stor421.z13.web.core.windows.net

Status: Enabled

Priority: 1

Weight: 1000

Session affinity: Enabled

Health probes: Enabled

Protocol: HTTPS

Probe method: HEAD

Interval (in seconds): 100

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): 50

<https://portal.azure.com/#@g7cr.com/resource/subscriptions/94a3e059-5e41-48a4-b7e7-2abfabbd0b2a/resourceGroups/frontdoor-rg/providers/Microsoft.Cdn/providers/Storage>

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Name: storage

Origins:

Origin host name	Status	Priority	Weight
stor421.z13.web.core.windows.net	Enabled	1	1000

Session affinity: Enable session affinity

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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

Update **Cancel** **Close**

frontDOOR | Origin groups

Search by name: storage

Origin host name: stor421.z13.web.core.windows.net

Status: Enabled

Priority: 1

Weight: 1000

Session affinity: Enabled

Health probes: Enabled

Protocol: HTTPS

Probe method: HEAD

Interval (in seconds): 100

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): 50

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**.

The screenshot shows the 'Update route' configuration page in the Microsoft Azure portal. The route is named 'vm'. The endpoint is set to 'endpoint-bhc8dtf7hvcngee0.z03.azurefd.net'. The 'Enable route' checkbox is checked. Under 'Domains', there is one selected domain: 'endpoint-bhc8dtf7hvcngee0.z03.azurefd.net'. The 'Patterns to match' section contains three entries: '/app/*', '/app', and '/path'. The 'Accepted protocols' dropdown is set to 'HTTP and HTTPS'. At the bottom, there are 'Update', 'Cancel', and 'Close' buttons.

https://portal.azure.com/#view/Microsoft_Azure_AFDX/RouteBlade/routeId/%2Fsubscriptions%2F94a3e059-5e41-48a4-b7e7-2abfabbd0b2a%2Fresourcegroups%2...

Update route

Patterns to match: /app/*
Accepted protocols: HTTP and HTTPS
Origin group: vm
Origin path: /
Forwarding protocol: HTTP only

<https://portal.azure.com/#@g7cr.com/resource/subscriptions/94a3e059-5e41-48a4-b7e7-2abfabbd0b2a/resourceGroups/frontdoor-rg/providers/Microsoft.Cdn/p...>

frontDOOR | Front Door manager

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](#)

Routes	Domains	Origin group	Status	Provisioning
static	1 selected	storage	Enabled	Succeeded
vm	1 selected	vm	Enabled	Succeeded
website	1 selected	storage	Enabled	Succeeded

Associated security policies: No results.

<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.

The screenshot shows the Microsoft Azure portal interface with the following details:

- Tab Bar:** Update route - Microsoft Azure, VM-Fileshare - Microsoft Azure, Azure File Server Setup.
- Header:** Microsoft Azure, Search resources, services, and docs (G+), Copilot, TrainingMSDNUser-4@..., G7 CR TECHNOLOGIES INDIA PVT...
- Breadcrumb:** Home > Load balancing and content delivery | Azure Front Door > frontDOOR | Front Door manager >
- Section:** Update route
- Form Fields:**
 - Name: static
 - Endpoint: endpoint-bhc8dtf7hvcngee0.z03.azurefd.net
 - Enable route: checked
 - Domains:
 - Domains *: endpoint-bhc8dtf7hvcngee0.z03.azurefd.net
 - Add a new domain
 - Patterns to match:
 - /static/*
 - /static
 - /path
 - Accepted protocols: HTTPS only
- Buttons:** Update, Cancel, Close
- Taskbar:** Type here to search, Start button, pinned icons (File Explorer, Edge, File Manager, Task View, OneDrive, Teams, VS Code, Mail, Photos, Settings, Copilot), system icons (Battery, Volume, Network, Weather, ENG), date/time (17:20, 20-01-2026).

Update route

Accepted protocols: **HTTPS only**

Origin group: **storage**

Forwarding protocol: **HTTP only**

Caching: Enable caching

Rules
Select rule sets to apply to this route. Rule sets are executed in the order shown, move rule sets up or down to prioritize.

Buttons: Update, Cancel, Close

Configuration:

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

Update route

Name: **website**

Endpoint: **endpoint-bhc8dtf7hvcngee0.z03.azurefd.net**

Patterns to match: **/website/***, **/website**, **/path**

Accepted protocols: **HTTPS only**

Buttons: Update, Cancel, Close

https://portal.azure.com/#view/Microsoft_Azure_AFDX/RouteBlade/routeId/%2Fsubscriptions%2F94a3e059-5e41-48a4-b7e7-2abfabbd0b2a%2Fresourcegroups%2...

Update route

website

Patterns to match:

- /website/*
- /website
- /path

Accepted protocols:

- HTTPS only

Origin group:

- storage
- Add a new origin group

Origin path:

Forwarding protocol:

- HTTP only
- HTTPS only (selected)
- Match incoming request

Buttons: Update, Cancel, Close

<https://portal.azure.com/#@g7cr.com/resource/subscriptions/94a3e059-5e41-48a4-b7e7-2abfabbd0b2a/resourceGroups/frontdoor-rg/providers/Microsoft.Cdn/p...>

frontDOOR | Front Door manager

Front Door

Search: endpoint-bhc8dtf7hvcngee0.z03.azurefd.net

Endpoint name or host name: endpoint-bhc8dtf7hvcngee0.z03.azurefd.net

Endpoint enabled status: All

Endpoint provisioning state: All

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](#)

Routes	Domains	Origin group	Status	Provisioning state
static	1 selected	storage	Enabled	Succeeded
vm	1 selected	vm	Enabled	Succeeded
website	1 selected	storage	Enabled	Succeeded

Associated security policies: No results.

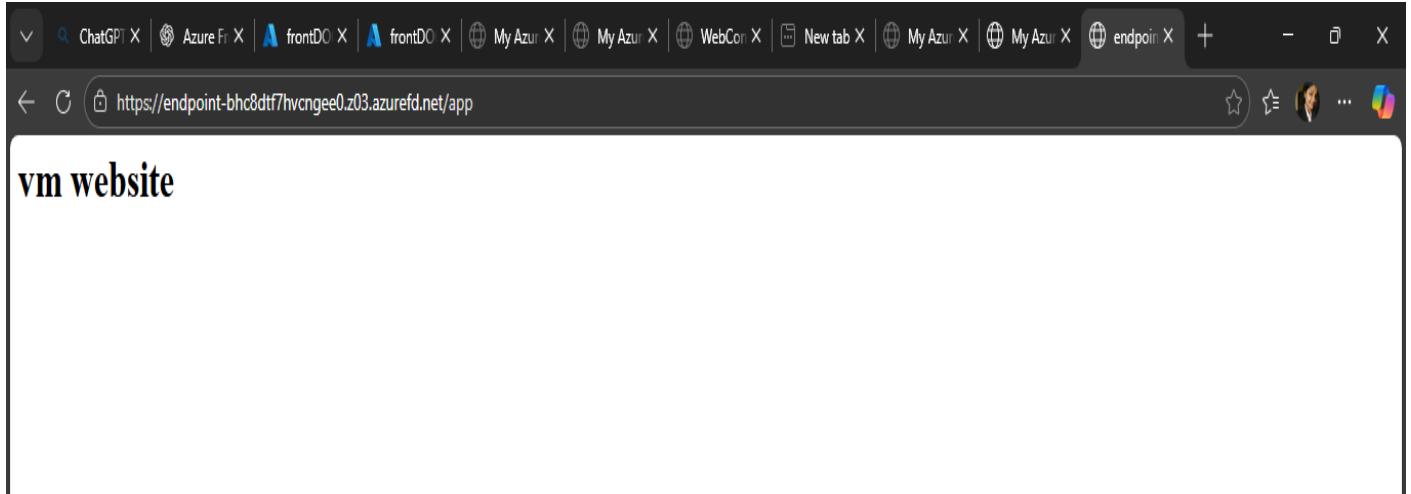
Enabled

Domain state

8. Validation and Testing

8.1 Test VM Application

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

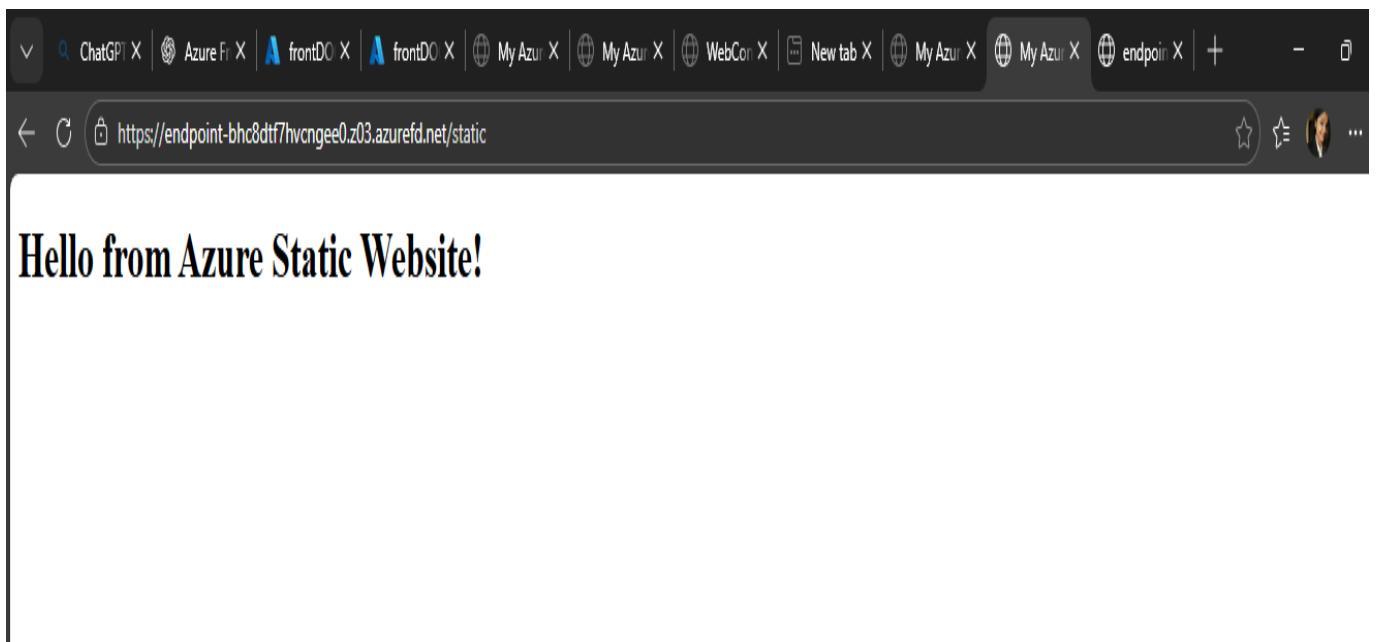


VM-hosted dynamic application loads successfully

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