

STATIC WEBSITE DEPLOYMENT ON AZURE USING GITHUB ACTIONS

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1. Project Overview

This project involves deploying a static website to Azure using Azure Static Web Apps and GitHub Actions. The website files were uploaded to a GitHub repository, linked to Azure for automated CI/CD deployment.

2. Architecture

The architecture consists of three main components:

1. GitHub Repository – hosts the website source files and workflow configuration.
2. Azure Static Web App – serves as the hosting service for the static site.
3. GitHub Actions – automates deployment to Azure whenever changes are pushed.

3. Deployment Steps

Step 1: Created a GitHub repository named 'temzz-azure-static-site'.

Step 2: Cloned the repository and added the static website files (HTML, CSS, JS).

Step 3: Logged into Azure Portal and created a Static Web App resource.

Step 4: Linked the app to the GitHub repository.

Step 5: Configured GitHub Actions to automate build and deployment.

Step 6: Verified deployment through the Azure-provided URL.

4. GitHub Actions Workflow

The workflow file '.github/workflows/azure-static-deploy.yml' was generated automatically by Azure. It contains the configuration that triggers deployment on each push to the main branch.

5. Challenges Faced

During implementation, one of the challenges faced was authentication and permissions issue between GitHub and Azure. Initially, deployment failed due to token misconfiguration.

This was resolved by regenerating the Azure Static Web App deployment token and adding it as a GitHub repository secret.

6. Solutions Implemented

To solve the authentication issue, I configured a new deployment token in Azure and updated the GitHub secret with the correct key. I also ensured that the branch in the workflow file matched the main branch in the repository.

7. Screenshots

Below are screenshots illustrating the deployment process and results:

- Azure Portal Static Web App Resource

```
$ ./deploy.sh
{
  "queue": "https://teuszstatic547.queue.core.windows.net/",
  "table": "https://teuszstatic547.table.core.windows.net",
  "web": "https://teuszstatic547.r16.web.core.windows.net/"
},
"primaryLocation": "northeurope",
"privateEndpointConnections": [],
"provisioningState": "Succeeded",
"publishedWebAccess": null,
"resourceGroup": "teusz-g",
"routingPreference": null,
"sePolicy": null,
"secondaryEndpoints": null,
"secondaryLocation": null,
"sku": {
  "name": "Standard_LRS",
  "tier": "Standard"
},
"type": "Microsoft.Storage/storageAccounts"
}

There are no credentials provided in your command and environment, we will query for account key for your storage account.
It is recommended to provide --connection-string, --account-key or --sas-token in your command as credentials.

You also can add '--auth-mode login' in your command to use Azure Active Directory (Azure AD) for authorization if your login account is assigned required RBAC roles.
For more information about RBAC roles in storage, visit https://learn.microsoft.com/azure/storage/common/storage-auth-aad-rbac-cli.

In addition, setting the corresponding environment variables can avoid inputting credentials in your command. Please use --help to get more information about environment variable usage.
{
  "cors": [],
  "deleteRetentionPolicy": {
    "allowPermanentDelete": null,
    "days": null,
    "enabled": false
  },
  "hourMetrics": {
    "enabled": false,
    "includeApis": null,
    "retentionPolicy": {
      "allowPermanentDelete": null,
      "days": null,
      "enabled": false
    }
  },
  "log": {
    "version": "1.0"
  },
  "logging": {
    "delete": false,
    "deleteRetentionPolicy": {
      "allowPermanentDelete": null,
      "days": null,
      "enabled": false
    },
    "version": "1.0"
  },
  "minMetrics": {
    "enabled": false,
    "includeApis": null,
    "retentionPolicy": {
      "allowPermanentDelete": null,
      "days": null,
      "enabled": false
    }
  },
  "staticWebsite": {
    "defaultIndexDocumentPath": null,
    "enabled": true,
    "errorDocument404Path": "404.html",
    "indexDocumentPath": null
  }
}
```

```
$ ./deploy.sh
{
  "tags": {},
  "type": "Microsoft.Storage/storageAccounts"
}

There are no credentials provided in your command and environment, we will query for account key for your storage account.
It is recommended to provide --connection-string, --account-key or --sas-token in your command as credentials.

You also can add '--auth-mode login' in your command to use Azure Active Directory (Azure AD) for authorization if your login account is assigned required RBAC roles.
For more information about RBAC roles in storage, visit https://learn.microsoft.com/azure/storage/common/storage-auth-aad-rbac-cli.

In addition, setting the corresponding environment variables can avoid inputting credentials in your command. Please use --help to get more information about environment variable usage.
{
  "cors": [],
  "deleteRetentionPolicy": {
    "allowPermanentDelete": null,
    "days": null,
    "enabled": false
  },
  "hourMetrics": {
    "enabled": false,
    "includeApis": null,
    "retentionPolicy": {
      "allowPermanentDelete": null,
      "days": null,
      "enabled": false
    }
  },
  "log": {
    "version": "1.0"
  },
  "logging": {
    "delete": false,
    "deleteRetentionPolicy": {
      "allowPermanentDelete": null,
      "days": null,
      "enabled": false
    },
    "version": "1.0"
  },
  "minMetrics": {
    "enabled": false,
    "includeApis": null,
    "retentionPolicy": {
      "allowPermanentDelete": null,
      "days": null,
      "enabled": false
    }
  },
  "staticWebsite": {
    "defaultIndexDocumentPath": null,
    "enabled": true,
    "errorDocument404Path": "404.html",
    "indexDocumentPath": null
  }
}
```

```

C:\Users\TEMIZAYO_ATANDA\KUNIGAWA\Documents\temzz-azure-static-site (main)
$ ./deploy.sh
geoReplicationStats: null,
"id": "subscriptions/5e9a84a4-4e3a-4421-9737-e32ca92a93c5/resourceGroups/temzz-rg/providers/Microsoft.Storage/storageAccounts/temzzstatic5156",
"identity": null,
"immutabilityPolicies": null,
"leaseEnabled": null,
"location": null,
"locationType": null,
"listEnabled": null,
"listFtpEnabled": null,
"listSealConversionLocked": null,
"keyCreationTime": {
  "key1": "2025-10-22T21:31:11.498043+00:00",
  "key2": "2025-10-22T21:31:11.498043+00:00"
},
"keyPolicy": null,
"kind": "StorageV2",
"largeFileShareState": null,
"lastGeoFailoverTime": null,
"location": "northeurope",
"minimumTlsVersion": "TLS_1_2",
"name": "temzzstatic5156",
"networkRuleSet": {
  "bypass": "AzureServices",
  "defaultAction": "Allow",
  "ipRules": [],
  "ipV6Rules": [],
  "resourceAccessRules": null,
  "virtualNetworkRules": []
},
"primaryEndpoints": {
  "blob": "https://temzzstatic5156.blob.core.windows.net/",
  "dfs": "https://temzzstatic5156.dfs.core.windows.net/",
  "file": "https://temzzstatic5156.file.core.windows.net/",
  "internetEndpoints": null,
  "microsoftEndpoints": null,
  "queue": "https://temzzstatic5156.queue.core.windows.net/",
  "table": "https://temzzstatic5156.table.core.windows.net/",
  "web": "https://temzzstatic5156.zf6.web.core.windows.net/"
},
"primaryLocation": "northeurope",
"privateEndpointConnections": [],
"provisioningState": "Succeeded",
"publicNetworkAccess": null,
"resourceGroup": "temzz-rg",
"routingPreference": null,
"secondaryPolicy": null,
"secondaryEndpoints": null,
"secondaryLocation": null,
"sku": {
  "name": "Standard_LRS",
  "tier": "Standard"
},
"statusOfPrimary": "available",
"statusOfSecondary": null,
"storageAccountSkuConversionStatus": null,

```

```

USER@TEMIZAYO_ATANDA MINGW64 ~/Documents/temzz-azure-static-site (main)
$ ./deploy.sh
Resource Group: temzz-rg
Storage Account: temzzstatic5156
Location: northeurope
{
  "id": "/subscriptions/5e9a84a4-4e3a-4421-9737-e32ca92a93c5/resourceGroups/temzz-rg",
  "location": "northeurope",
  "managedBy": null,
  "name": "temzz-rg",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
{
  "accessTier": "Hot",
  "accountMigrationInProgress": null,
  "allowBlobPublicAccess": false,
  "allowCrossTenantReplication": false,
  "allowSharedKeyAccess": null,
  "allowedCopyScope": null,
  "azureFilesIdentityBasedAuthentication": null,
  "blobRestoreStatus": null,
  "creationTime": "2025-10-22T21:31:11.380669+00:00",
  "customDomain": null,
  "defaultToOAuthAuthentication": null,
  "dnsEndpointType": null,
  "enableExtendedGroups": null,
  "enableHttpsTrafficOnly": true,
  "enableNfsv3": null,
  "encryption": {
    "encryptionIdentity": null,
    "keySource": "Microsoft.Storage",
    "keyVaultProperties": null,
    "requireInfrastructureEncryption": null,
    "services": {
      "blob": {
        "enabled": true,
        "keyType": "Account",
        "lastEnabledTime": "2025-10-22T21:31:11.505667+00:00"
      },
      "file": {
        "enabled": true,
        "keyType": "Account",
        "lastEnabledTime": "2025-10-22T21:31:11.505667+00:00"
      },
      "queue": null,
      "table": null
    }
  },
  "extendedLocation": null,
  "failoverInProgress": null,

```

```

$ ./deploy.sh
),
"logging": {
  "delete": false,
  "read": false,
  "retentionPolicy": {
    "allowPermanentDelete": null,
    "days": null,
    "enabled": false
  },
  "version": "1.0",
  "write": false
},
"minuteMetrics": {
  "enabled": false,
  "includeApis": null,
  "retentionPolicy": {
    "allowPermanentDelete": null,
    "days": null,
    "enabled": false
  },
  "version": "1.0"
},
"staticWebsite": {
  "defaultIndexDocumentPath": null,
  "enabled": true,
  "errorDocument_404Path": "404.html",
  "indexDocument": "index.html"
},
"target_version": null
},
{
  {
    "blob": "https://temzzstatic547.blob.core.windows.net/%24web/404.html",
    "lastModified": "2025-10-22T19:56:26+00:00",
    "type": "text/html",
    "eTag": "\"0x8DE11A515B887D8\""
  },
  {
    "blob": "https://temzzstatic547.blob.core.windows.net/%24web/about.html",
    "lastModified": "2025-10-22T19:56:28+00:00",
    "type": "text/html",
    "eTag": "\"0x8DE11A516BE9000\""
  },
  {
    "blob": "https://temzzstatic547.blob.core.windows.net/%24web/index.html",
    "lastModified": "2025-10-22T19:56:29+00:00",
    "type": "text/html",
    "eTag": "\"0x8DE11A5179EA560\""
  },
  {
    "blob": "https://temzzstatic547.blob.core.windows.net/%24web/service.html",
    "lastModified": "2025-10-22T19:56:30+00:00",
    "type": "text/html",

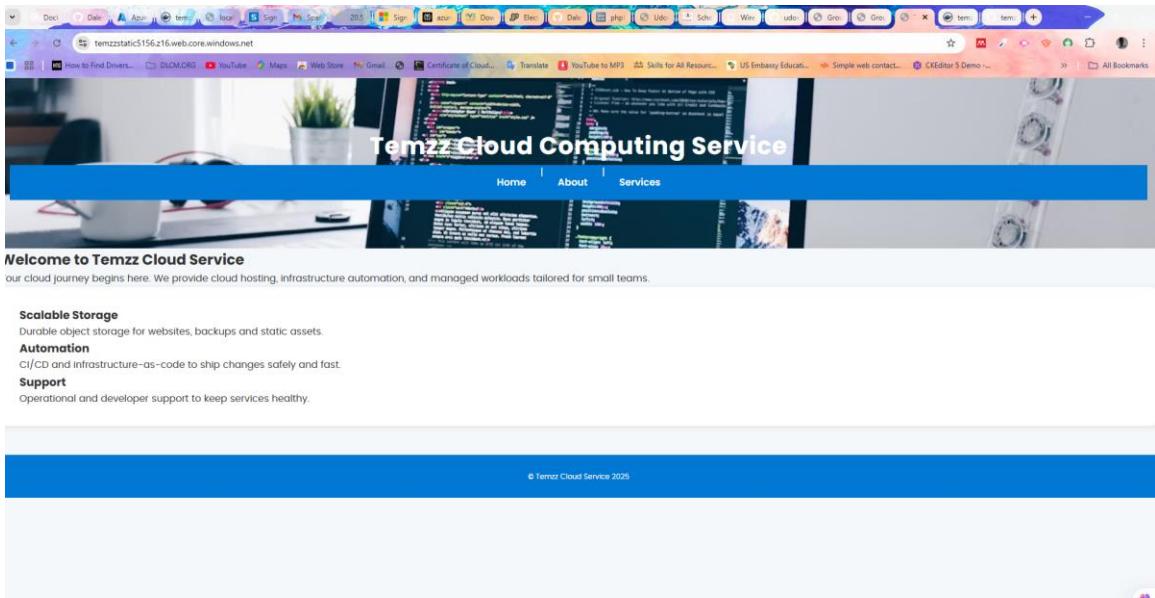
```

- GitHub Actions Workflow Run (Success)

```
USER@TEMIDAYO_ATANDA MINGW64 ~/Documents/temzz-azure-static-site
$ git init
git remote add origin https://github.com/Dalex702/temzz-azure-s
tatic-site.git
git add .
git commit -m "Initial commit - Temzz Cloud site"
git push -u origin main
Initialized empty Git repository in C:/Users/USER/Documents/temzz-azure-static-site/.git/
warning: in the working copy of '.github/workflows/azure-static-deploy.yml', LF will be replaced by CRLF the next time Git
touches it
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'deploy.sh', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'site/404.html', LF will be replaced by CRLF the next time Git touches it
$ git remote add origin https://github.com/Dalex702/temzz-azure-static-site.git
git branch -M main
git push -u origin main
$ git remote add origin https://github.com/Dalex702/temzz-azure-static-site.git
$ git remote add origin https://github.com/Dalex702/temzz-azure-static-site.git
git branch -M main
git push -u origin main
error: remote origin already exists.
Enumerating objects: 14, done.
Counting objects: 100% (14/14), done.
Delta compression using up to 4 threads
Compressing objects: 100% (12/12), done.
Writing objects: 100% (14/14), 4.64 KiB | 128.00 KiB/s, done.
Total 14 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), done.

To https://github.com/Dalex702/temzz-azure-static-site.git
 * [new branch]      main -> main
```

- Deployed Static Website via Public URL



8. Results and Verification

The static website was successfully deployed and accessible through the public URL:
<https://temzzstatic5156.z16.web.core.windows.net/>

GitHub Repository Link:

<https://github.com/Dalex702/temzz-azure-static-site>

9. Conclusion

This project demonstrates a seamless CI/CD pipeline for static website deployment using Azure and GitHub Actions. It also showcases proficiency in cloud hosting, automation, and version control practices.

The experience improved my understanding of cloud deployment and automation workflows, particularly the connection between GitHub Actions and Azure Static Web Apps.