

IaC COFOMO TEAM 20 Doc

Contents

[VNet Bicep File](#)

[Source](#)

[Preview](#)

[Testing](#)

[Outputs](#)

[App Deployment](#)

[Source](#)

[Preview](#)

[Testing](#)

[Outputs](#)

[Database](#)

[Source](#)

[Preview](#)

[Testing](#)

[Outputs](#)

Comments

All files can be find under main branch and under COFOMO Bicep. The challenge was not 100% completed

Implemented tasks:

- Vnet.bicep
- App.bicep
- Keyvault.bicep

VNet Bicep File

Source

app.bicep

Preview

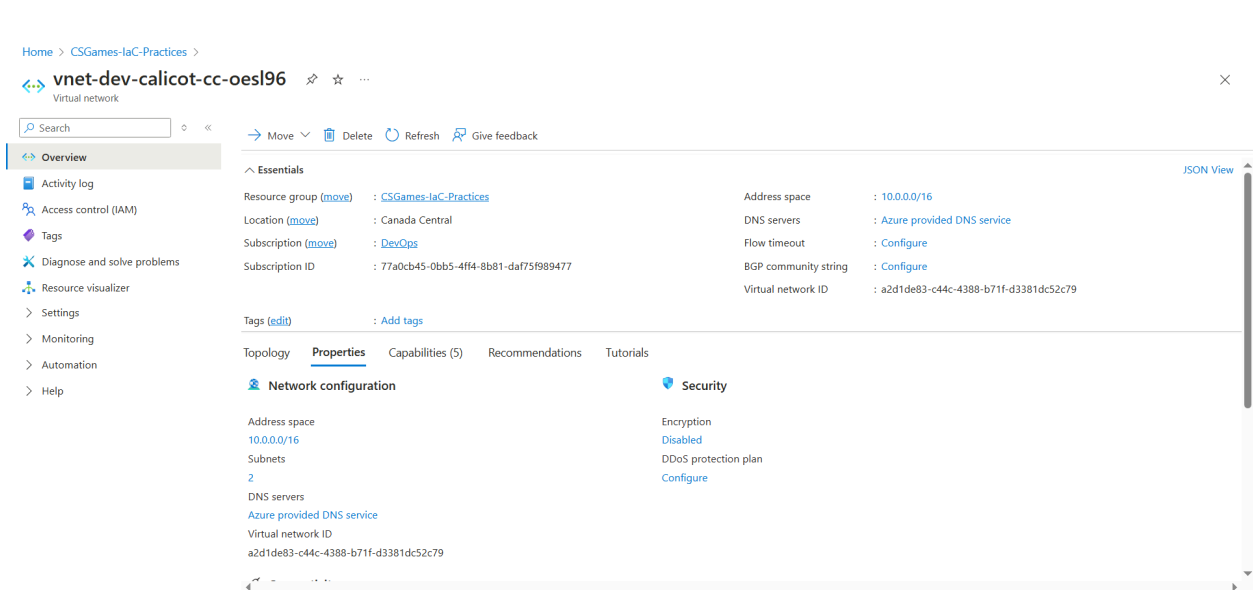
```
resource vnet 'Microsoft.Network/virtualNetworks@2022-01-01' = {
  name: 'vnet-dev-calicot-cc-oes196'
  location: 'Canada Central'
  properties: {
    addressSpace: {
      addressPrefixes: [
        '10.0.0.0/16'
      ]
    }
    subnets: [
      {
        name: 'snet-dev-web-cc-oes196'
        properties: {
          addressPrefix: '10.0.1.0/24'
          networkSecurityGroup: null // This is the correct property to assign a
Network Security Group (NSG)
          routeTable: null
        }
      }
      {
        name: 'snet-dev-db-cc-oes196'
        properties: {
          addressPrefix: '10.0.2.0/24'
          networkSecurityGroup: null // Corrected here too
          routeTable: null
        }
      }
    ]
  }
}
```

```
output vnetId string = vnet.id
```

Testing

The code deploys vnet using bicep. The code was tested using Azure DevOps (developer personal account) as Bicep is native to Azure, and the dev did not have resources in laptop to install Azure tools. Sample pipeline run in Azure to deploy code.

Outputs



Resource Deployed in Azure

App Deployment

Source

vnet.bicep

Preview

```
param location string = 'Canada Central'
param appServicePlanName string = 'StandardPlan'

resource appServicePlan 'Microsoft.Web/serverfarms@2021-02-01' = {
  name: appServicePlanName
  location: location
  sku: {
    name: 'S1' // Standard pricing tier
    tier: 'Standard'
    capacity: 1
  }
}
```

```

resource webApp 'Microsoft.Web/sites@2021-02-01' = {
  name: 'app-calicot-dev-001'
  location: location
  properties: {
    httpsOnly: true
    siteConfig: {
      alwaysOn: true
      minTlsVersion: '1.2'
      http20Enabled: true
      appSettings: [
        {
          name: 'ImageUrl'
          value: 'https://stcalicotprod000.blob.core.windows.net/images/'
        }
      ]
    }
  }
  identity: {
    type: 'SystemAssigned'
  }
}

resource autoScale 'Microsoft.Insights/autoscaleSettings@2021-05-01-preview' = {
  name: 'autoscale-webapp'
  location: location
  properties: {
    enabled: true
    targetResourceUri: appServicePlan.id // Reference the App Service Plan here
    profiles: [
      {
        name: 'default'
        capacity: {
          minimum: '1' // Use strings here
          maximum: '2' // Use strings here
          default: '1' // Use strings here
        }
        rules: [
          {
            metricTrigger: {
              metricName: 'CpuPercentage'
              operator: 'GreaterThan'
              threshold: 70
              timeAggregation: 'Average'
              metricNamespace: 'Microsoft.Web/serverfarms'
              timeGrain: 'PT1M'
              metricResourceUri: appServicePlan.id // Ensure the metric resource is
referenced correctly

```

```
        statistic: 'Average' // Add statistic  
        timeWindow: 'PT5M' // Add timeWindow  
    }  
    scaleAction: {  
        direction: 'Increase'  
        type: 'ChangeCount'  
        value: '1' // Use string here  
        cooldown: 'PT5M'  
    }  
}  
]  
}  
]
```

Testing

The code deploys the application using bicep. The code was tested using Azure DevOps (developer personal account) as Bicep is native to Azure, and the dev did not have resources in laptop to install Azure tools. Sample pipeline run in Azure to deploy code.

Outputs

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

ces396@gmail.com

DSMA SA DE CV (DSMASADECV...)

Home > CSGames-lac-Practices >

app-calicot-dev-001
Web App

Search

Browse
 Stop
 Swap
 Restart
 Delete
 Refresh
 Download publish profile
 Reset publish profile
 Share to mobile
 Send us your feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Microsoft Defender for Cloud

Events (preview)

Recommended services (preview)

Resource visualizer

Deployment

Deployment slots

Deployment Center

Settings

Performance

App Service plan

Development Tools

Click here to access Application Insights for monitoring and profiling for your app.

Essentials

Resource group (move)

CSGames-lac-Practices

Status

Running

Location (move)

Canada Central

Subscription (move)

DevOps

Subscription ID

77a0cb45-0bb5-4ff4-8b81-daf75f989477

Tags (edit)

+ Add tags

Default domain

app-calicot-dev-001.azurewebsites.net

App Service Plan

Default1cp

Operating System

Windows

Health Check

Not Configured

JSON View

Properties

Monitoring

Logs

Capabilities

Notifications (1)

Recommendations

Web app

Name

app-calicot-dev-001

Publishing model

Code

Deployment Center

Deployment logs

View logs

Last deployment

Loading deployments...

Deployment provider

None

Domains

Default domain

app-calicot-dev-001.azurewebsites.net

Custom domain

+ Add custom domain

Application Insights

Name

Enable Application Insights

<https://portal.azure.com/#@DSMASADECV.northern.azure.com/resource/subscriptions/77a0cb45-0bb5-4ff4-8b81-daf75f989477/resourceGroups/CSGames-lac-Practices/providers/Microsoft.Web/sites/app-calicot-dev-001/appServices>

App Deployed in Azure

Keyvault

Source

keyvault.bicep

Preview

```
// Parameters
param location string = 'Canada Central'
param keyVaultName string = 'kv-calicot-dev-001'
param webAppName string = 'app-calicot-dev-001'

// Create Key Vault
resource kv 'Microsoft.KeyVault/vaults@2023-07-01' = {
  name: keyVaultName
  location: location
  properties: {
    enabledForDeployment: true // Set to true if you want to enable deployment via
Key Vault
    enabledForDiskEncryption: true // Set to true if needed
    enabledForTemplateDeployment: true // Set to true if needed
    tenantId: subscription().tenantId // Use the tenant ID from the subscription
    enableSoftDelete: true
    softDeleteRetentionInDays: 90 // Retain soft-deleted vaults for 90 days
    accessPolicies: [
      {
        objectId: webApp.identity.principalId // The Web App's Managed Identity
objectId
        tenantId: subscription().tenantId
        permissions: {
          certificates: ['get', 'list'] // Add permissions for certificates
          keys: ['get', 'list'] // Add permissions for keys
          secrets: ['get', 'list'] // Add permissions for secrets
          storage: ['get', 'list'] // Add permissions for storage
        }
      }
    ]
  }
  sku: {
    name: 'standard' // SKU type (can change based on requirements)
    family: 'A'
  }
  networkAcls: {
```

```

    defaultAction: 'Allow' // Set to 'Deny' if you want to restrict access
    bypass: 'AzureServices' // Allow Azure Services to bypass network rules
  }
}

// Get the Web App Managed Identity (assumes it has a Managed Identity)
resource webApp 'Microsoft.Web/sites@2024-04-01' existing = {
  name: webAppName
}

```

Testing

The code deploys a keyvault using bicep. The code was tested using Azure DevOps (developer personal account) as Bicep is native to Azure, and the dev did not have resources in laptop to install Azure tools. Sample pipeline run in Azure to deploy code.

Outputs

The screenshot displays the Azure portal interface for a Key Vault resource. The top navigation bar shows the Microsoft Azure logo, a search bar, and the user profile 'ces96@gmail.com' with the role 'DSMA SA de CV'. The breadcrumb trail indicates the location: Home > CSGames-IaC-Practices > kv-calicot-dev-001. The Key Vault 'kv-calicot-dev-001' is selected, and the 'Properties' tab is active. The left sidebar contains a navigation menu with options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Access policies, Resource visualizer, Events, Objects, Settings, Monitoring, Automation, and Help. The main content area is divided into sections: 'Essentials' showing resource details (Resource group: CSGames-IaC-Practices, Location: Canada Central, Subscription: DevOps, Subscription ID: 77a0cb45-0bb5-4ff4-8b81-daf75f989477), 'Access configuration' showing permission models (Vault access policy, Resource access) and their respective access levels, and 'Networking' showing network settings (Public network access: Enabled, Firewalls and virtual networks: Access allowed from all networks, Private endpoint connections: Not configured). A 'JSON View' link is available in the top right corner of the Essentials section.

Keyvault Deployed in Azure