

Grupo  
Evandro Luis Araujo de Sousa  
Leonardo Rener de Oliveira  
Victor Akira Hassuda Silva

Azure - <https://dev.azure.com/victorakira/Unicamp%20Extens%C3%A3o/>

Pre-Config  
No painel do Azure Cloud é necessário atribuir uma Role de Co-Administrador à Conta da Assinatura que deseja linkar com o Azure Pipeline

Current role assignmentsEligible assignments

Assignments for the selected user, group, service principal, or managed identity at this scope or inherited to this scope.

Search by assignment name or description

Role assignments (1)

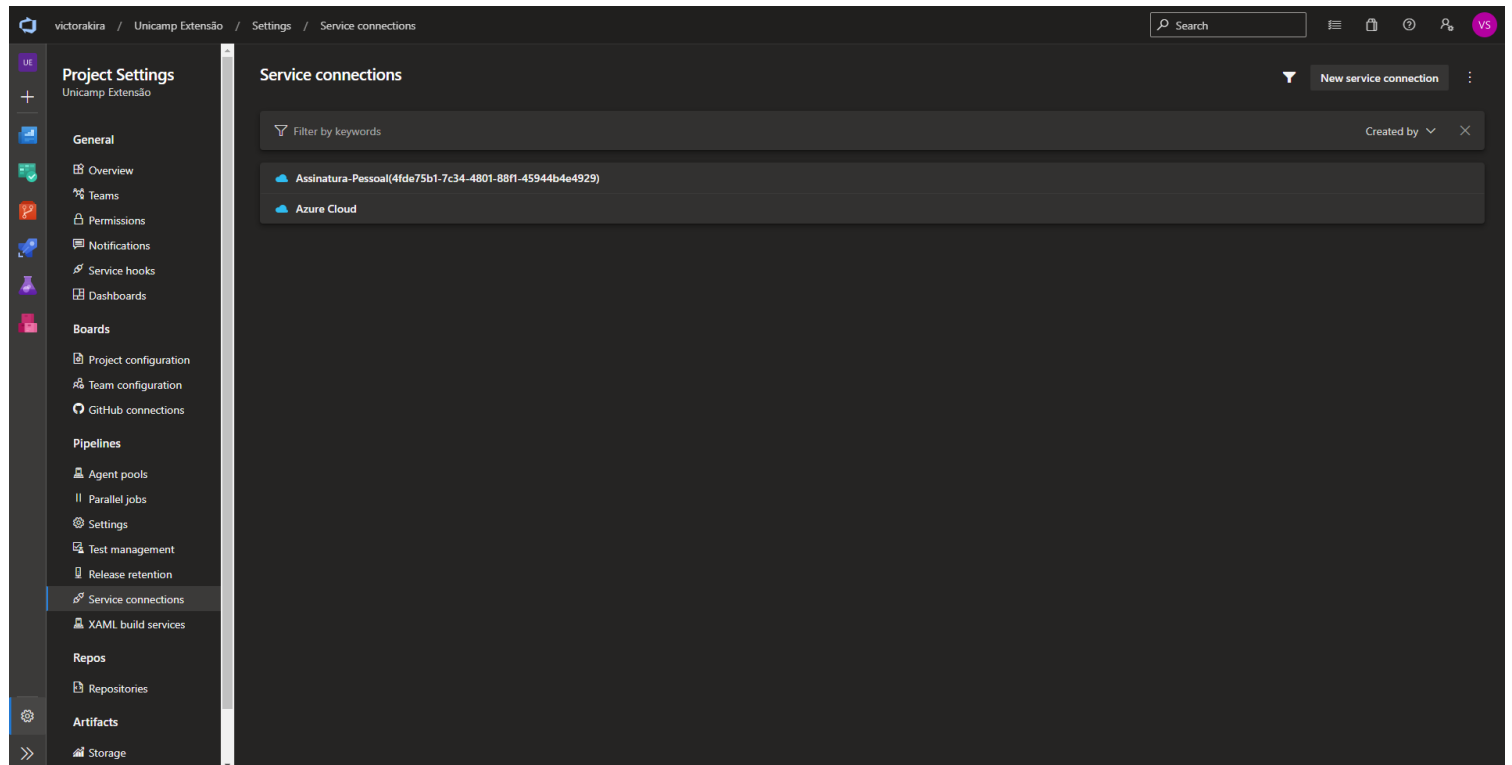
Role	Description	Scope	Group assignment	Condition
Owner	Grants full access to manage all r...	This resource	--	None

Deny assignments (0)

Classic administrators (1)

Role	Description
Co-Administrator	Has full access to all resources in the subscription

## 1o passo - Criar um Service Connection com o Azure Resource Manager



## 2o passo - Criar uma pipeline usando YAML na raiz do repositório

```
# Nome da Pipeline
name: $(TeamProject)_$(Build.DefinitionName)_$(SourceBranchName)_$(Date:yyyyMMdd)$(Rev:.rrr)

# Trigger da Pipeline
trigger:
- main

# Recursos a serem utilizados pela Pipeline
resources:
  repositories:
    - repository: mainRepository
      type: git
      name: inf0997-trabalhofinal

# Definição dos Stages
stages:

# Primeiro estágio - Deploy da Infraestrutura
- stage: Deploy_Infrastructure
  displayName: Deploy Infrastructure
```

```
# Utilizando a pool do Ubuntu disponibilizada pela Azure
pool:
  vmImage: ubuntu-latest

# Definição dos jobs da pipeline
jobs:

# Execução do Terraform para criar a infraestrutura
- job:
  displayName: Run Terraform

  steps:
  - checkout: self
    clean: true
    displayName: Checkout repository

  - bash: |
      ls -la
      ls -la terraform
    displayName: Run Scripts

# Execução do comando Terraform Init para inicializar o Terraform
# Baixa os comandos do provider na máquina
- task: AzureCLI@2
  displayName: Init Terraform
  inputs:
    azureSubscription: 'Assinatura-Pessoal(4fde75b1-7c34-4801-88f1-45944b4e4929)'
    scriptType: 'bash'
    scriptLocation: 'inlineScript'
    inlineScript: |
      terraform init
    addSpnToEnvironment: true
    workingDirectory: 'terraform'

# Execução do planejamento do Terraform
# Cria toda a estrutura de dependências para criar a infraestrutura
- task: AzureCLI@2
  displayName: Plan Terraform
  inputs:
    azureSubscription: 'Assinatura-Pessoal(4fde75b1-7c34-4801-88f1-45944b4e4929)'
```

```
scriptType: 'bash'
scriptLocation: 'inlineScript'
inlineScript: |
    terraform plan -input=false -out deploy.tfplan
addSpnToEnvironment: true
workingDirectory: 'terraform'
```

# Execução do Terraform apply para criar a infraestrutura no Azure Cloud

```
- task: AzureCLI@2
  displayName: Apply Terraform
  inputs:
    azureSubscription: 'Assinatura-Pessoal(4fde75b1-7c34-4801-88f1-45944b4e4929)'
    scriptType: 'bash'
    scriptLocation: 'inlineScript'
    inlineScript: |
        terraform apply -input=false -auto-approve deploy.tfplan
    addSpnToEnvironment: true
    workingDirectory: 'terraform'
```

# Segundo estágio - Deploy do Web App

# Depende da finalização com sucesso do estágio anterior

```
- stage: Deploy_WebApp
  displayName: Deploy WebApp
  dependsOn: Deploy_Infrastructure
  condition: succeeded()
```

# Utiliza uma vm Windows Server 2019 para executar

```
pool:
  vmImage: windows-2019
```

```
jobs:
- job:
  displayName: 'Deploy Sample Web App'
```

# Cria um manifest file para poder instalar outras tools

```
steps:
- task: DotNetCoreCLI@2
  displayName: Dotnet new manifest
  inputs:
    command: 'custom'
    custom: 'new'
```

```
arguments: 'tool-manifest'
workingDirectory: 'SampleWebApp/SampleWebApp'

# Instala a tool do Entity Framework
- task: DotNetCoreCLI@2
  displayName: Install dotnet-ef
  inputs:
    command: 'custom'
    custom: 'tool'
    arguments: 'install --global dotnet-ef'
    workingDirectory: 'SampleWebApp/SampleWebApp'

# Executa comando Update-Database do Entity Framework
# Para criação das tabelas do banco de dados
- task: DotNetCoreCLI@2
  displayName: Entity Framework Update Database
  inputs:
    command: 'custom'
    custom: 'ef'
    arguments: 'database update'
    workingDirectory: 'SampleWebApp/SampleWebApp'

# Compila o código em modo Release
- task: DotNetCoreCLI@2
  displayName: Build Release
  inputs:
    command: 'custom'
    custom: 'build'
    arguments: '--configuration Release'
    workingDirectory: 'SampleWebApp/SampleWebApp'

# Realiza o Publish da aplicação em modo Release
- task: DotNetCoreCLI@2
  displayName: Publish Release
  inputs:
    command: 'publish'
    publishWebProjects: true
    arguments: '-f net6.0 -c Release'
    workingDirectory: 'SampleWebApp'

- powershell: |
```

```

    dir
    dir SampleWebApp/
    dir SampleWebApp/SampleWebApp
    displayName: List Directories

# Realiza o deploy da Web App no Azure Web Services
- task: AzureWebApp@1
  displayName: Publish Web App
  inputs:
    azureSubscription: 'Assinatura-Pessoal(4fde75b1-7c34-4801-88f1-45944b4e4929)'
    appType: 'webApp'
    appName: 'inf0997-sample'
    package: '$(System.DefaultWorkingDirectory)/**/*.zip'
    deploymentMethod: 'auto'

```

3o passo - Adicionar um arquivo contendo a configuração a ser usada pelo Terraform

```

# Providers necessários para executar o script do Terraform
terraform {
  required_providers {
    azurerm = {
      source = "hashicorp/azurerm"
      version = "3.33.0"
    }
  }
}

# Configuração do provider AzureRM
provider "azurerm" {
  subscription_id = "4fde75b1-7c34-4801-88f1-45944b4e4929"
  client_id = "b228868c-f923-4356-8dbf-28d150bed674"
  client_secret = "u8x8Q~RpjGCxuqTNFzxV5naSPbDPSL7fjjki1bzC"
  tenant_id = "179b5913-afc3-448e-9350-455b204c0296"
  features {
  }
}

# Criação de um Resource Group no Azure Cloud

```

```
resource "azurerm_resource_group" "azure-devops" {
  name = "Inf0997-ResourceGroup"
  location = "Brazil South"
}

# Criação de um servidor para o Banco de Dados SQL Server
resource "azurerm_mssql_server" "azure-sql-server" {
  name = "inf0997-sqlserver"
  resource_group_name = azurerm_resource_group.azure-devops.name
  location = azurerm_resource_group.azure-devops.location
  version = "12.0"
  administrator_login = "inf0997Admin"
  administrator_login_password = "A1k9i9r1aAdmin!"
}

# Configuração do Banco de Dados SQL Server
resource "azurerm_mssql_database" "azure-database" {
  name = "inf0997-db"
  server_id = azurerm_mssql_server.azure-sql-server.id
  collation = "SQL_Latin1_General_CP1_CS_AS"
  max_size_gb = 2
  sku_name = "Basic"
}

# Adição de regras de Firewall do Banco de Dados
resource "azurerm_mssql_firewall_rule" "azure-db-firewall" {
  name = "inf0997-firewall"
  server_id = azurerm_mssql_server.azure-sql-server.id
  start_ip_address = "0.0.0.0"
  end_ip_address = "255.255.255.255"
}

# Adição de um Service Plan para o Windows Server
resource "azurerm_service_plan" "azure-service-plan" {
  name = "windows-server"
  resource_group_name = azurerm_resource_group.azure-devops.name
  location = azurerm_resource_group.azure-devops.location
  os_type = "Windows"
  sku_name = "B1"
```

```
}

# Criação de um Azure Web App Windows para hospedar um Web App
resource "azurerm_windows_web_app" "azure-webapp-windows" {
  name                        = "inf0997-sample"
  resource_group_name        = azurerm_resource_group.azure-devops.name
  location                   = azurerm_service_plan.azure-service-plan.location
  service_plan_id            = azurerm_service_plan.azure-service-plan.id

  site_config {
    application_stack {
      current_stack = "dotnet"
      dotnet_version = "v6.0"
    }
  }

  identity {
    type = "SystemAssigned"
  }
}
```



4o passo - Executar o Pipeline ou commitar na Main para execução automática

← Jobs in run #Unicamp Extensão_INF0997...		
▼	✓ Run Terraform	4m 33s
	✓ Initialize job	2s
	✓ Checkout repository	1s
	✓ Run Scripts	<1s
	✓ Init Terraform	12s
	✓ Plan Terraform	14s
	✓ Apply Terraform	3m 52s
	✓ Post-job: Checkout repository	<1s
	✓ Finalize Job	<1s
Deploy WebApp		
▼	✓ Deploy Sample Web App	3m 9s
	✓ Initialize job	5s
	✓ Checkout INF0997-TrabalhoFin...	7s
	✓ Dotnet new manifest	16s
	✓ Install dotnet-ef	8s
	✓ Entity Framework Update Dat...	49s
	✓ Build Release	4s
	✓ Publish Release	5s
	✓ List Directories	4s
	✓ Publish Web App	1m 21s
	✓ Post-job: Checkout INF0997-...	<1s
	✓ Finalize Job	<1s
Finalize build		
	✓ Report build status	<1s

5o passo - Verificar a execução e criação dos serviços

Inf0997-ResourceGroup

Resource group

Search

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Deployments

Security

Policies

Properties

Locks

Cost Management

Cost analysis

Essentials

Subscription (move) : [Assinatura-Pessoal](#)

Subscription ID : 4fde75b1-7c34-4801-88f1-45944b4e4929

Tags (edit) : [Click here to add tags](#)

Deployments : [No deployments](#)

Location : Brazil South

Resources

Recommendations

Filter for any field...

Type equals all

Location equals all

Add filter

Showing 1 to 4 of 4 records.

Show hidden types

No grouping

Name	Type	Location
inf0997-db (inf0997-sqlserver/inf0997-db)	SQL database	Brazil South
inf0997-sample	App Service	Brazil South
inf0997-sqlserver	SQL server	Brazil South
windows-server	App Service plan	Brazil South

6o passo - Verificar o deploy da Web App

inf0997-sample.azurewebsites.net

SampleWebApp

Home

Privacy

Register

Login

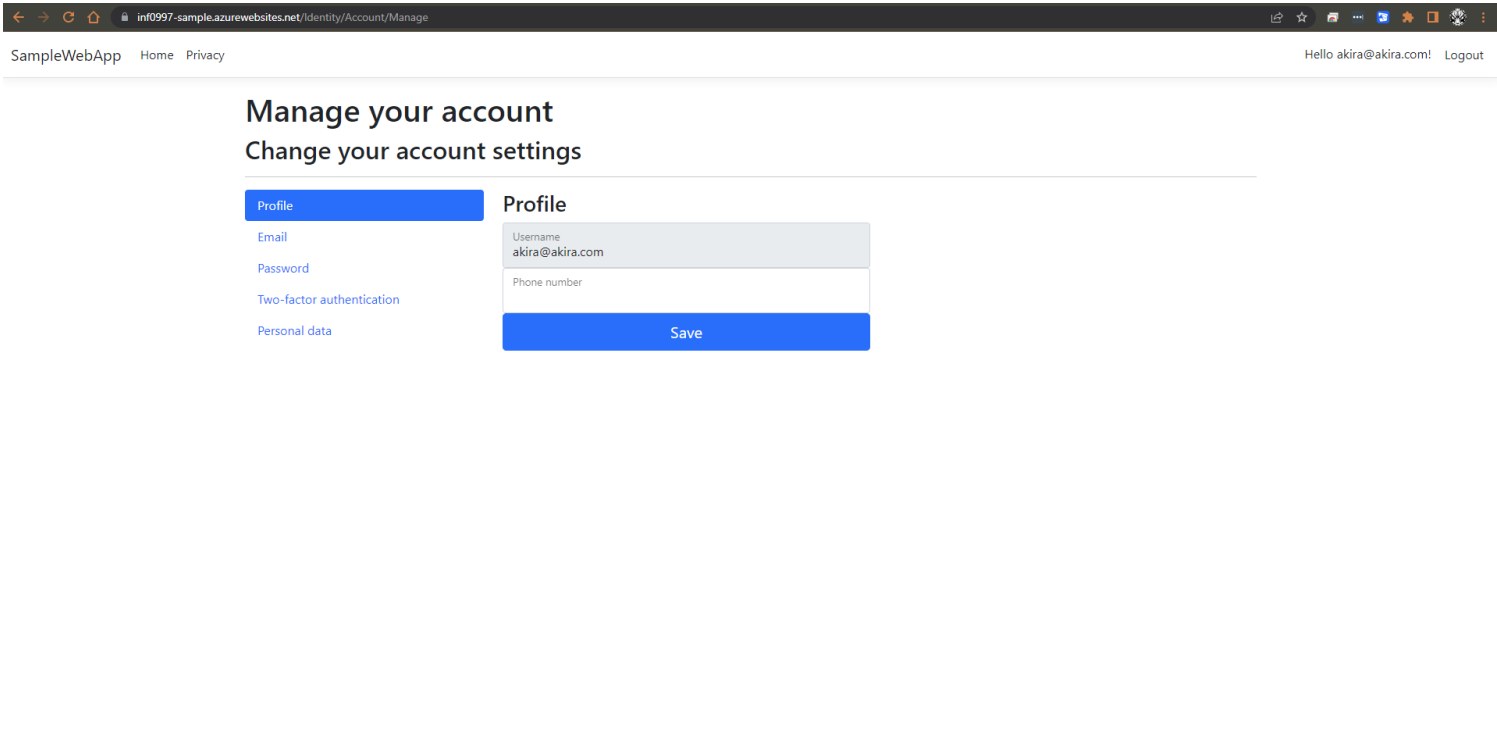
Welcome

Learn about [building Web apps with ASP.NET Core](#).

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7o passo - Verificar a conexão da Web App com o Banco de Dados

- Criado um usuário com email [akira@akira.com](mailto:akira@akira.com)
- Acessando a página restrita após realizar o login



<https://inf0997-sample.azurewebsites.net>

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8o passo - Verificar a criação das tabelas e usuários no Banco de Dados através do SQL Server Management Studio

