Destroy Resources Lab 1.10

Short lab to tear down the environment.

Overview

In this lab you will

- selectively destroy a resource with commenting
- destroy the whole environment with `terraform destroy`
- check the state files

Starting point

Your files should look similar to this:

- provider.tf

```
terraform {
  required_providers {
    azurerm = {
      source  = "hashicorp/azurerm"
      version = "~>3.1"
    }
  }
}

provider "azurerm" {
  features {}

  storage_use_azuread = true
}
```

- variables.tf

```
variable "resource_group_name" {
  description = "Name for the resource group"
  type        = string
  default     = "terraform-basics"
}

variable "location" {
  description = "Azure region"
  type        = string
  default     = "West Europe"
}

variable "container_group_name" {
```

```
  description = "Name of the container group"
  type        = string
  default     = "terraform-basics"
}
```

main.tf

```
locals {
  uniq = substr(sha1(azurerm_resource_group.basics.id), 0, 8)
}

resource "azurerm_resource_group" "basics" {
  name     = var.resource_group_name
  location = var.location

  lifecycle {
    ignore_changes = [
      tags,
    ]
  }
}

resource "azurerm_container_group" "basics" {
  name                = var.container_group_name
  location            = azurerm_resource_group.basics.location
  resource_group_name = azurerm_resource_group.basics.name
  ip_address_type     = "Public"
  dns_name_label      = "${var.container_group_name}-${local.uniq}"
  os_type             = "Linux"

  container {
    name   = "inspectorgadget"
    image  = "jelledruyts/inspectorgadget:latest"
    cpu    = "0.5"
    memory = "1.0"

    ports {
      port     = 80
      protocol = "TCP"
    }
  }
}

resource "azurerm_storage_account" "import_example" {
  name                     = "pmw45665"
  resource_group_name      = azurerm_resource_group.basics.name
  location                 = azurerm_resource_group.basics.location
  account_tier             = "Standard"
  account_replication_type = "LRS"

  allow_nested_items_to_be_public = false
  is_hns_enabled                  = true
  nfsv3_enabled                   = true
  public_network_access_enabled   = false
}
```

2. terraform plan

```
3. terraform plan
```

You should see errors based on the outputs.

4. Rename the outputs.tf file

When Terraform runs its commands it is looking at all files in the current directory that match `*.tf`. You can rename file suffixes and it will ignore those files.

Rename the outputs files so that it is completely ignored in the diff.

```
mv outputs.tf outputs.tf.ignore
```

5. terraform plan

```
6. terraform plan
7. azurerm_resource_group.basics: Refreshing state...
   [id=/subscriptions/2ca40be1-7e80-4f2b-92f7-
   06b2123a68cc/resourceGroups/terraform-basics]

8. azurerm_container_group.basics: Refreshing state...
   [id=/subscriptions/2ca40be1-7e80-4f2b-92f7-
   06b2123a68cc/resourceGroups/terraform-
   basics/providers/Microsoft.ContainerInstance/containerGroups/terraform-
   basics]

9. azurerm_storage_account.import_example: Refreshing state...
   [id=/subscriptions/2ca40be1-7e80-4f2b-92f7-
   06b2123a68cc/resourceGroups/terraform-
   basics/providers/Microsoft.Storage/storageAccounts/pmw45665]

10.

11.Terraform used the selected providers to generate the following execution

12.plan. Resource actions are indicated with the following symbols:

13.   - destroy

14.

15.Terraform will perform the following actions:

16.

17.   # azurerm_container_group.basics will be destroyed

18.   # (because azurerm_container_group.basics is not in configuration)

19.   - resource "azurerm_container_group" "basics" {

20.       - dns_name_label      = "terraform-basics-c3818179" -> null
```

```
21.       - exposed_port        = [
22.           - {
23.               - port     = 80
24.               - protocol = "TCP"
25.             },
26.         ] -> null
27.       - fqdn                = "terraform-basics-
    c3818179.uksouth.azurecontainer.io" -> null
28.       - id                  = "/subscriptions/2ca40be1-7e80-4f2b-92f7-
    06b2123a68cc/resourceGroups/terraform-
    basics/providers/Microsoft.ContainerInstance/containerGroups/terraform-
    basics" -> null
29.       - ip_address          = "20.108.193.216" -> null
30.       - ip_address_type     = "Public" -> null
31.       - location            = "uksouth" -> null
32.       - name                = "terraform-basics" -> null
33.       - os_type             = "Linux" -> null
34.       - resource_group_name = "terraform-basics" -> null
35.       - restart_policy      = "Always" -> null
36.       - tags                = {} -> null
37.
38.       - container {
39.           - commands                    = [] -> null
40.           - cpu                         = 0.5 -> null
41.           - environment_variables       = {} -> null
42.           - image                       =
    "jelledruyts/inspectorgadget:latest" -> null
43.           - memory                      = 1 -> null
44.           - name                        = "inspectorgadget" -> null
45.           - secure_environment_variables = (sensitive value)
46.
47.           - ports {
```

```
48.               - port     = 80 -> null
49.               - protocol = "TCP" -> null
50.             }
51.         }
52.     }
53.
54. Plan: 0 to add, 0 to change, 1 to destroy.
55.
56. Changes to Outputs:
57.   - fqdn       = "http://terraform-basics-
    c3818179.uksouth.azurecontainer.io" -> null
58.   - ip_address = "20.108.193.216" -> null
59.
60. ──────────────────────────────────────────────────────────────────────────
    ──
61.
62. Note: You didn't use the -out option to save this plan, so Terraform can't
63. guarantee to take exactly these actions if you run "terraform apply" now.
```

The resource is no longer in the config and so Terraform plans to remove it.

Some of you will be familiar with ARM templates or Bicep and the standard *incremental* mode, which only ever **contributes** resources idempotently. If you were to remove resources from the resources array in an ARM template then those resources would remain in the resource group and would have to be manually deleted.

The Terraform behaviour here is closer to the less commonly used *complete* mode in ARM / Bicep.

64. Apply the change

```
65. terraform apply
```

Approve the change. The container group will be deleted.

terraform destroy

We'll finish with a command that you will use rarely in production. The `terraform destroy` command will update state, show the current resources and remove any defined in your files.

1. Destroy the environment
2. `terraform destroy`

   Example output:

```
azurerm_resource_group.basics: Refreshing state...
[id=/subscriptions/2ca40be1-7e80-4f2b-92f7-
06b2123a68cc/resourceGroups/terraform-basics]

azurerm_storage_account.import_example: Refreshing state...
[id=/subscriptions/2ca40be1-7e80-4f2b-92f7-
06b2123a68cc/resourceGroups/terraform-
basics/providers/Microsoft.Storage/storageAccounts/pmw45665]



Terraform used the selected providers to generate the following execution

plan. Resource actions are indicated with the following symbols:

  - destroy



Terraform will perform the following actions:



  # azurerm_resource_group.basics will be destroyed

  - resource "azurerm_resource_group" "basics" {

      - id       = "/subscriptions/2ca40be1-7e80-4f2b-92f7-
06b2123a68cc/resourceGroups/terraform-basics" -> null

      - location = "uksouth" -> null

      - name     = "terraform-basics" -> null

      - tags     = {

          - "source" = "terraform"

        } -> null

    }



  # azurerm_storage_account.import_example will be destroyed

  - resource "azurerm_storage_account" "import_example" {
```

```
      - access_tier                         = "Hot" -> null

      - account_kind                        = "StorageV2" -> null

      - account_replication_type            = "LRS" -> null

      - account_tier                        = "Standard" -> null

      - allow_nested_items_to_be_public     = true -> null

      - enable_https_traffic_only           = true -> null

      - id                                  = "/subscriptions/2ca40be1-7e80-
4f2b-92f7-06b2123a68cc/resourceGroups/terraform-
basics/providers/Microsoft.Storage/storageAccounts/pmw45665" -> null

      - infrastructure_encryption_enabled = false -> null

      - is_hns_enabled                      = true -> null

      - location                            = "uksouth" -> null

      - min_tls_version                     = "TLS1_2" -> null

      - name                                = "pmw45665" -> null

      - nfsv3_enabled                       = true -> null

      - primary_access_key                  = (sensitive value)

      - primary_blob_connection_string      = (sensitive value)

      - primary_blob_endpoint               =
"https://pmw45665.blob.core.windows.net/" -> null

      - primary_blob_host                   =
"pmw45665.blob.core.windows.net" -> null

      - primary_connection_string           = (sensitive value)

      - primary_dfs_endpoint                =
"https://pmw45665.dfs.core.windows.net/" -> null

      - primary_dfs_host                    = "pmw45665.dfs.core.windows.net"
-> null

      - primary_file_endpoint               =
"https://pmw45665.file.core.windows.net/" -> null

      - primary_file_host                   =
"pmw45665.file.core.windows.net" -> null

      - primary_location                    = "uksouth" -> null

      - primary_queue_endpoint              =
"https://pmw45665.queue.core.windows.net/" -> null

      - primary_queue_host                  =
"pmw45665.queue.core.windows.net" -> null
```

```
      - primary_table_endpoint             =
"https://pmw45665.table.core.windows.net/" -> null

      - primary_table_host                 =
"pmw45665.table.core.windows.net" -> null

      - primary_web_endpoint               =
"https://pmw45665.z33.web.core.windows.net/" -> null

      - primary_web_host                   =
"pmw45665.z33.web.core.windows.net" -> null

      - queue_encryption_key_type          = "Service" -> null

      - resource_group_name                = "terraform-basics" -> null

      - secondary_access_key               = (sensitive value)

      - secondary_connection_string        = (sensitive value)

      - shared_access_key_enabled          = true -> null

      - table_encryption_key_type          = "Service" -> null

      - tags                               = {} -> null


      - blob_properties {

          - change_feed_enabled      = false -> null

          - last_access_time_enabled = false -> null

          - versioning_enabled       = false -> null


          - delete_retention_policy {

              - days = 7 -> null

            }

        }


      - network_rules {

          - bypass                   = [

              - "AzureServices",

            ] -> null

          - default_action           = "Deny" -> null
```

```
      - ip_rules                  = [] -> null
      - virtual_network_subnet_ids = [] -> null
    }

  - queue_properties {

      - hour_metrics {
          - enabled               = true -> null
          - include_apis          = true -> null
          - retention_policy_days = 7 -> null
          - version               = "1.0" -> null
        }

      - logging {
          - delete                = false -> null
          - read                  = false -> null
          - retention_policy_days = 0 -> null
          - version               = "1.0" -> null
          - write                 = false -> null
        }

      - minute_metrics {
          - enabled               = false -> null
          - include_apis          = false -> null
          - retention_policy_days = 0 -> null
          - version               = "1.0" -> null
        }
    }
```

```
      - share_properties {


          - retention_policy {

              - days = 7 -> null

            }

        }


      - timeouts {}

    }


Plan: 0 to add, 0 to change, 2 to destroy.


Do you really want to destroy all resources?

  Terraform will destroy all your managed infrastructure, as shown above.

  There is no undo. Only 'yes' will be accepted to confirm.


  Enter a value: yes




azurerm_storage_account.import_example: Destroying...
[id=/subscriptions/2ca40be1-7e80-4f2b-92f7-
06b2123a68cc/resourceGroups/terraform-
basics/providers/Microsoft.Storage/storageAccounts/pmw45665]

azurerm_storage_account.import_example: Destruction complete after 2s

azurerm_resource_group.basics: Destroying... [id=/subscriptions/2ca40be1-
7e80-4f2b-92f7-06b2123a68cc/resourceGroups/terraform-basics]

azurerm_resource_group.basics: Still destroying...
[id=/subscriptions/2ca40be1-7e80-4f2b-92f7-
...3a68cc/resourceGroups/terraform-basics, 10s elapsed]

azurerm_resource_group.basics: Destruction complete after 15s
```

```
Destroy complete! Resources: 2 destroyed.
```

Summary

You have learnt how to initialise Terraform, install providers, format and validate HCL files, how to add resources and plan and apply your configs. You have also worked with simple expressions, locals and outputs, manipulated the state file - including an import - and then managed the destroy phase.