

Azure – Infrastructure As Code

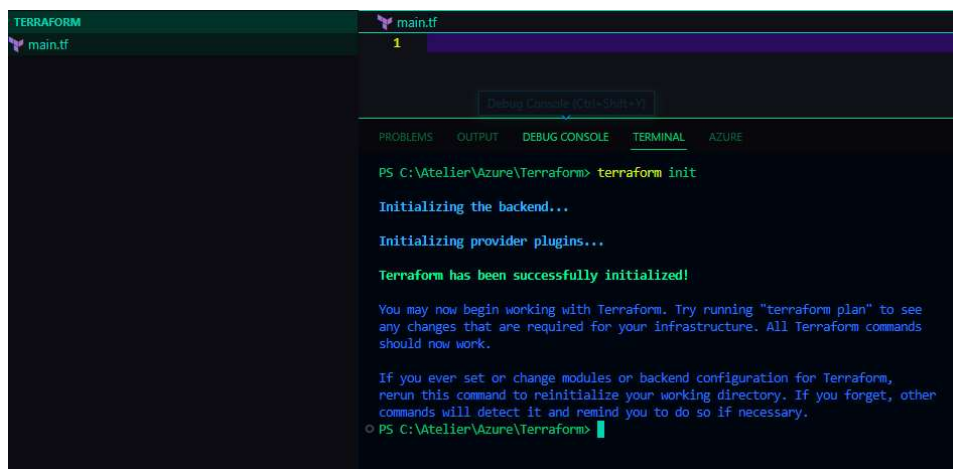
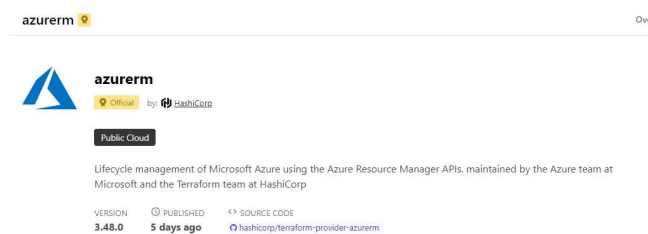
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<https://learn.microsoft.com/en-us/devops/deliver/what-is-infrastructure-as-code>

<https://learn.microsoft.com/fr-fr/azure/developer/terraform/overview>

<https://registry.terraform.io/>



1ère chose à faire : configurer Terraform pour l'utiliser sur Azure



Pour connecter Terraform à notre compte Azure : dans le bloc provider ->

```
provider "azurerm" {  
  features {  
  
  }  
  skip_provider_registration = true  
}
```

Skip_provider_registration = true va permettre à terraform de se connecter automatiquement au compte azure qu'il doit utiliser (moyen le plus secure à utiliser)



```

provider "azurerm" {
  features {
  }
  skip_provider_registration = true
}

```

```

# Déclaration des ressources

resource "azurerm_virtual_network" "first_network" {

  name = "network-benoit"
  location = " Japan East"
  resource_group_name = "m2i-formation"
  address_space = ["10.0.0.0/16"]
}

```

```

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

Enter a value: yes

azurerm_virtual_network.first_network: Creating...
azurerm_virtual_network.first_network: Creation complete after 10s [id=/subscriptions/c49e632f-5dd4-4c37-b1a6-578c7faa36fd/resourceGroups/m2i-formation/providers/Microsoft.Network/virtualNetworks/network-benoit]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
PS C:\Atelier\Azure\Terraform>

```

^ Bases			
Groupe de ressources (déplacer) :	m2i-formation	Espace d'adressage :	10.0.0.0/16
Emplacement (déplacer) :	Japan East 	Serveurs DNS :	Service DNS fourni par Azure
Abonnement (déplacer) :	Abonnement Azure 1	Délai d'expiration du flux :	Configurer

```

❏ exercice.md > ...
1  ## Exercice 1
2
3  - Créez les ressources nécessaires pour avoir une vm sur Azure.

```

Code utilisé :

```

terraform {

```

```

terraform {
  required_providers {
    azurerm = {
      source = "hashicorp/azurerm"
      version = "~> 3.0"
    }
  }
}

## IOC
# provider à utiliser
provider "azurerm" {
  features {
  }
  skip_provider_registration = true
}

# resources
# network 1
resource "azurerm_virtual_network" "ihab_vm_network" {
  name = "network-vm-ihab"
  location = "West Europe"
  resource_group_name = "m2i-formation"
  address_space = ["10.0.0.0/16"]
}

# subnet
resource "azurerm_subnet" "ihab_vm_subnet" {
  name = "ihab-vm-subnet"
  virtual_network_name = azurerm_virtual_network.ihab_vm_network.name
  resource_group_name = azurerm_virtual_network.ihab_vm_network.resource_group_name
  address_prefixes = ["10.0.1.0/24"]
}

```

```

resource "azurerm_network_security_group" "ihab-gr-security" {
  name = "security-group"
  location = azurerm_virtual_network.ihab_vm_network.location
  resource_group_name = azurerm_virtual_network.ihab_vm_network.resource_group_name

  security_rule {
    name = "AllowAll"
    priority = 100
    direction = "Inbound"
    access = "Allow"
    protocol = "Tcp"
    source_port_range = "*"
    destination_port_range = "*"
    source_address_prefix = "*"
    destination_address_prefix = "*"
  }
}

resource "azurerm_subnet_network_security_group_association" "gr_subnet" {
  subnet_id = azurerm_subnet.ihab_vm_subnet.id
  network_security_group_id = azurerm_network_security_group.ihab-gr-security.id
}

# adresse ip
resource "azurerm_public_ip" "ip_ihab" {
  name = "ip-ihab"
  resource_group_name = azurerm_virtual_network.ihab_vm_network.resource_group_name
  location = azurerm_virtual_network.ihab_vm_network.location
  allocation_method = "Dynamic"
}

```

```

71 # interface réseau
72 resource "azurerm_network_interface" "interface_vm" {
73   name = "ihab-nic"

```

```

74     resource_group_name = azurerm_virtual_network.ihab_vm_network.resource_group_name
75     location = azurerm_virtual_network.ihab_vm_network.location
76     ip_configuration {
77         name = "ip-ihab"
78         subnet_id = azurerm_subnet.ihab_vm_subnet.id
79         private_ip_address_allocation = "Dynamic"
80         public_ip_address_id = azurerm_public_ip.ip_ihab.id
81     }
82
83 }
84
85 # créer une clé ssh
86
87 resource "tls_private_key" "ihab_key" {
88     algorithm = "RSA"
89     rsa_bits = "4096"
90 }
91

```

```

92 # création de vm
93
94 resource "azurerm_linux_virtual_machine" "ihab-vm" {
95     name = "ihab-vm"
96     resource_group_name = azurerm_virtual_network.ihab_vm_network.resource_group_name
97     location = azurerm_virtual_network.ihab_vm_network.location
98     size = "Standard_B1s"
99     admin_username = "azureuser"
100    admin_password = "TotoTata1234."
101    network_interface_ids = [azurerm_network_interface.interface_vm.id]
102    admin_ssh_key {
103        username = "azureuser"
104        public_key = tls_private_key.ihab_key.public_key_openssh
105    }
106    os_disk {
107        storage_account_type = "Standard_LRS"
108        caching = "ReadWrite"
109    }
110    source_image_reference {
111        publisher = "Canonical"
112        offer = "UbuntuServer"
113        sku = "18.04-LTS"
114        version = "latest"
115    }
116 }
117 output "private_key" {
118     value = tls_private_key.ihab_key.private_key_pem
119     sensitive = true
120 }

```

Surcharger pour utiliser les variables :

The screenshot shows a terminal window with a dark background. At the top, there are four tabs: 'main.tf', 'terraform.tfvars' (which is active and has a close button), 'terraform.tfstate', and 'exercice.md'. The terminal prompt is 'terraform >'. The user has entered 'terraform.tfvars >' followed by 'instance_type'. The output shows '1 instance_type= "Standard_B1s"'. The terminal window has a standard Linux-style title bar with minimize, maximize, and close buttons on the right.

```

main.tf  terraform.tfvars X  terraform.tfstate  exercice.md
terraform > terraform.tfvars > instance_type
1 instance_type= "Standard_B1s"

```



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL powershell - terraform + - - - - -  
argLVrDQZzvZRA3n4G/eX/DVKyX9NX4uNwVPgzQ24paUhKEo3Twx1073Po7BdiGt  
MeL5ooDasS93QtgVfmGc/1WI4Z2t1gJkuIQoUWA34wKCAQAY1FWE2vv1M1MNMW4k7  
X2o17Kx0UXWF59A7oqnQV6wGgsLLaQ2HHdAa0KpvX1BduK4Qn15vhQgcdr88zv2x  
w/Pu5jKruQRGS8wsHy90GRnX0Y9ZGBF6RkLubxJpV6QNXDTZVkrYZgrrmQZNpyh  
1eCUk/z4QM8FI9fWc+5i1lg+E1BPutF6nAYrkq1T2djmoIGHwpytPskWUUD8/Sh  
AdGJXsBzTP1VgOIJfmHjb6+wh9Rpd5vytGyMI1L/0PjeqU0i07fB6Ev6CjbCVT7X  
iIc2SVmqUN2ms5d80BU6e05km+BPPJA3vovjRxTQibu4G4ksU+PrnuML4tbmFHQ0  
uezBAoIBAHky7DedsjK2vmVqR70pif9BShP56vFgZUwcbHeqprAcDZ97S9U6RR5  
kHdoMy5WJfzYi0nyrM012xzUYMgMA3K+6ROxrc5W1bojqCn25NKfHev4S2xBaz1g  
P6UgcGKaieaoGMEIR0VSA5UK6XuGDP1x08z5SbGmY4qyin2/5+NorchH+CgKpZZ  
dfjD2uJnDj/YU2P4HdeuMx7+m0/bAG7U3j9cTEtdHT12o0SPxzKYKevXzoucrM4G  
m/SxIwgI2MMIsJfvMULj0zix3vWoIhVi8oD4U5goBrN36oYoUT/gqmcdGnWA0t5U  
nC62c1wir1RAthteSH0zpvoQebAdNHsCggEAbnQF8T8yuT50Y3RTEML300zWhhwc  
Fa3Pvdcm1DwbmZC6xIIME4n5rTiP0dIQzP0zPtXeAV1vYN1vavPFPsUavxBQ69e  
YFG6F1g29xMIQMS1dJN5BrHX5xpuEaphneQzBopVbw1pSCZs1XpSdavDkBkl02aF  
ArQo+kEF43/BM2UTOJFFaij0EdRaazInqD0zZA7qLwJVuGtLCs00F5uykZfTGxnf  
E/4IY+9czZ1Z0t fmkx31ekQueXcsGGZog1VFToN0b+Vw6z3TfugceS1fNS9+c5EL  
MhSZd02K2j8Xt8DhYyEM1M+gh8Zz/x/a8KwggnBpepwKMto1cX1C8MTUw==  
-----END RSA PRIVATE KEY-----  
PS C:\Users\Administrateur\Desktop\Azure\terraform> terraform output -raw private_key > ihab.pem  
PS C:\Users\Administrateur\Desktop\Azure\terraform> terraform apply -var="instance_type=
```

Terraform : TP Global