# Lab 2 – Deploy Infrastructure Terraform

Goal: Learn to create infrastructure templates using Terraform.

You have been hired by X-Corp, to help them migrating to the Cloud.

X-Corp wants to follow a multi-cloud strategy and has chosen Terraform as Infrastructure as Code solution.

Your first project is to use Terraform templates to create Virtual Machines in Azure.

**Exercise 1: Install Terraform & the Azure CLI**

To start, you will experiment with Terraform in your local environment. To start, you need to install the Terraform tool.

[Install | Terraform | HashiCorp Developer](https://developer.hashicorp.com/terraform/install)

Download the executable and add it to your local path variable. You should then be able to use the terraform command line interface tool. This task is completed when you enter terraform and enter.

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The Terraform requires the Azure CLI to be installed. [How to install the Azure CLI | Microsoft Learn](https://learn.microsoft.com/en-us/cli/azure/install-azure-cli)

You then need to provide the Azure CLI access to your subscription. Perform <az login> and follow the steps.

Once completed, go to exercise 2.

**Exercise 2: Create a resource group using Terraform**

In Azure, resources are grouped into resource groups. For our infrastructure we need to create a resource group. This we can do using Terraform. Follow the steps mentioned below to create the resource group.

[Quickstart: Create an Azure resource group using Terraform | Microsoft Learn](https://learn.microsoft.com/en-us/azure/developer/terraform/create-resource-group?tabs=azure-cli)

Feel free to choose your own name, however, make sure the name is not the same as others in the course.

**Exercise 3: Create networking resources**

To be able to host virtual machines, you will need to create a virtual network in Azure.

Go ahead, and:

* Create a vnet with address space 10.1.0.0/16.
* Create a subnet named: default with address space 10.1.0.0/24

[Azure/vnet/azurerm | Terraform Registry](https://registry.terraform.io/modules/Azure/vnet/azurerm/2.3.0)

**Exercise 4: Network security group**

Add a Network security group to the subnet, allow all inbound RDP connectivity on port 3389.

**Exercise 5: Use variables**

By now you might have hardcoded certain values in your template. It is a ‘best practice’ to use variables. This allows the reuse of templates in different scenarios. For example when you want to deploy the same template to a dev/test/acc/prod environment.

**Exercise 6: Create a Windows VM within your subnet**

Try to find the documentation for Azure Virtual machine on Terraform.

For location use: Sweden Central

For Virtual Machine size use: Standard\_DS1\_v2

**Exercise 7: Destroy your infrastructure**

You have now succeeded in creating infrastructure. As a last step you will remove the infrastructure before going to the next lab.