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HYC11.23 - Terraform

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1 Download the latest terraform version

Make sure you always use the latest **stable** version of

- terraform - Download
- azure cli - Download (optional, not really needed for terraform)

2 Verify terraform installation

```
# You can verify the installation on the command line using
terraform --version (returning something like "Terraform v0.11.13..."
az --version
```

3 Get the latest terraform scripts

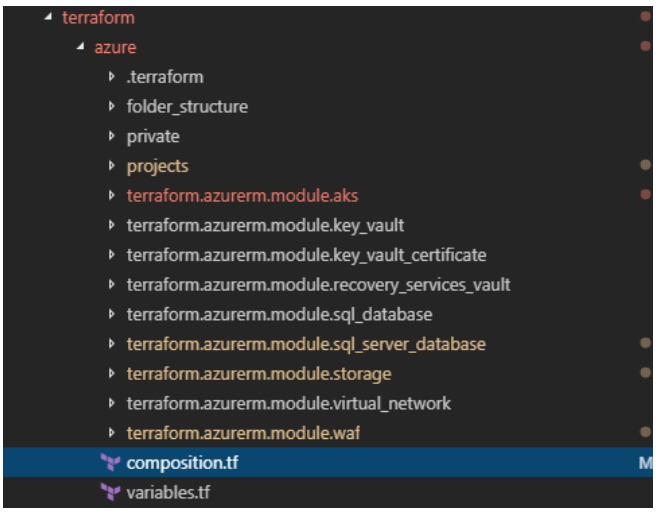
Get access to: https://bosch.visualstudio.com/Terraform%20for%20Bosch

In order to execute terraform scripts, make sure to clone the repository https://sourcecode.socialcoding.bosch.com/projects/CIBDX/repos/rb.core.kubernetes

The scripts for Terraform on Azure are located at https://sourcecode.socialcoding.bosch.com/projects/CIBDX/repos/rb.core.kubernetes/browse/terraform/azure

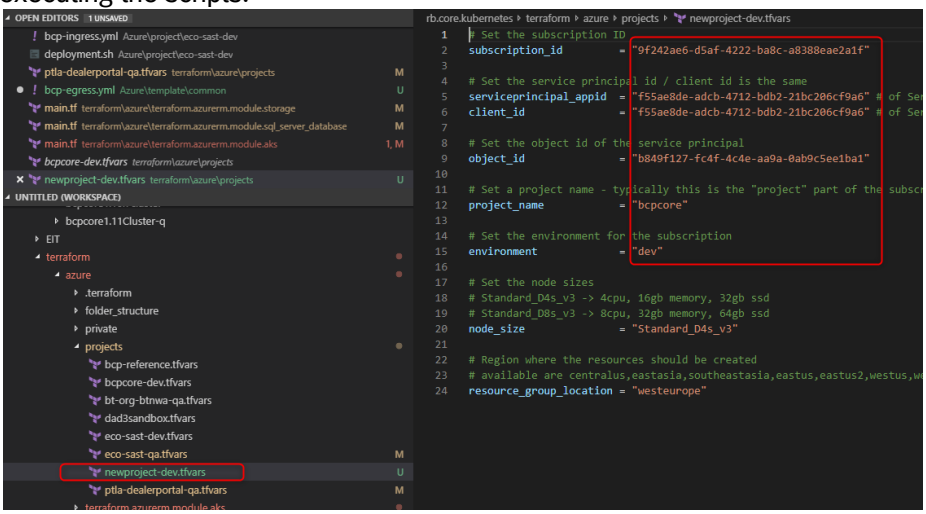
4 Folder structure

Terraform is split up into modules each consisting 1...n resources within. The relevant modules for an infrastructure deployment are defined in the composition.tf at root level



In the composition.tf defines variables for the various modules, however you don't have to change anything in there since it is seperated out into a projects folder (terraform\azure\projects).
So whenever you want to deploy to a new subscription, copy the file bcpcore-dev.tfvars and name it matching your project name.

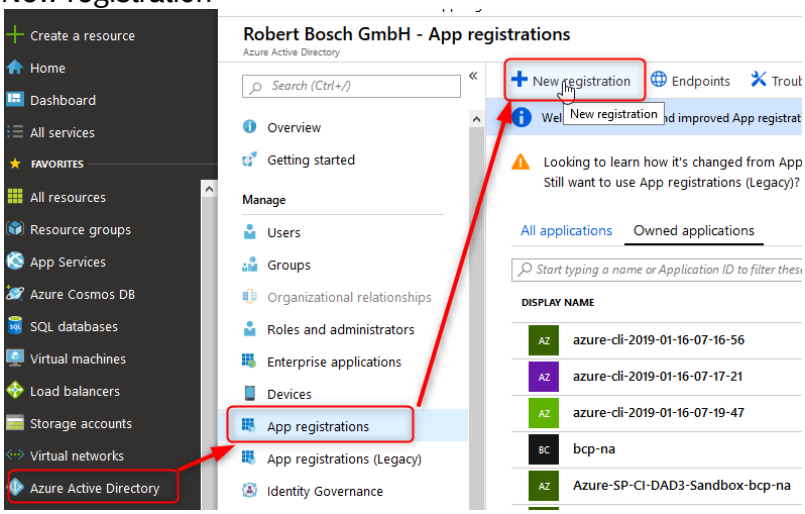
You should now replace the values within that newly created tfvars file, because it will be reference when executing the scripts.



If you don't have a Service Principal for your subscription you have to create a new one or order it as described here:

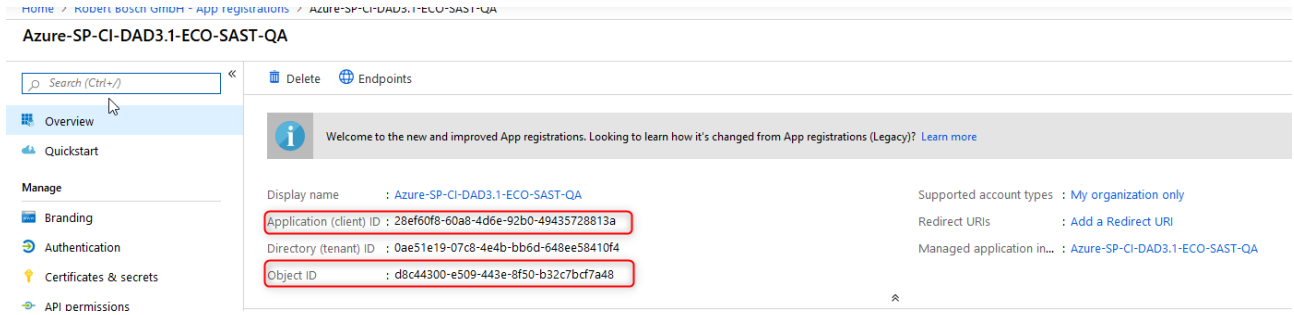
1. Log into Azure Portal
2. Azure Active Directory
3. App registrations

4. New registration

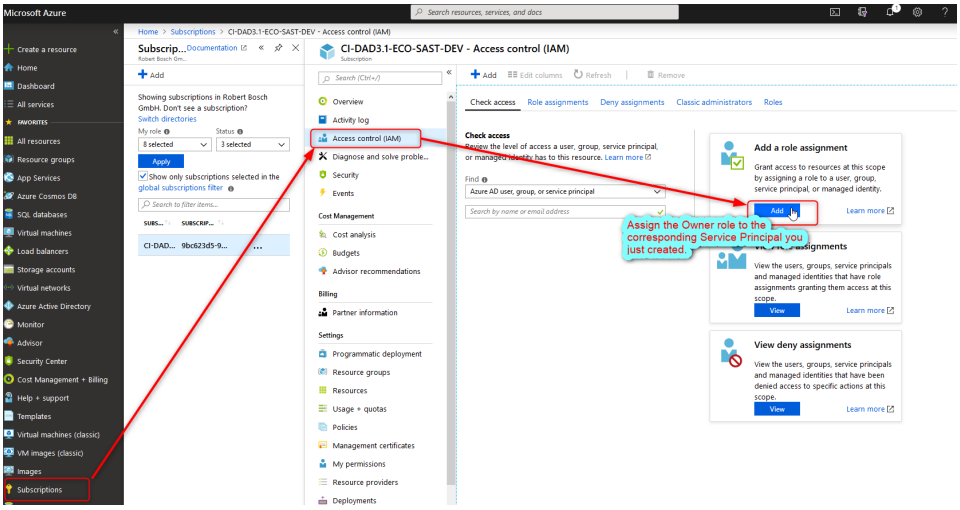


5. Name the service accordingly:
   Azure-SP-<GB>-<UNIT>-<PROJECTNAME>-<ENVIRONMENT>

When the service principal has been created, you can copy the necessary values for the tfvars-file from the service principals' overview:



Make sure the Service principal gets the Owner role for that subscription:



Once you replaced all the values accordingly and assigned the Owner role to the Service Principal (if it does not already exist), you can start with provisioning.

5 Set the right subscription

MAKE SURE YOU ARE IN THE RIGHT SUBSCRIPTION

Before executing any script, make sure you are working the right subscription by setting the corresponding subscription id.

```
az login # if you haven't logged in already
az account set --subscription THE-SUBSCRIPTION-ID-YOU-WANT-TO-WORK-ON
```

Don't forget to set the subscription ID

It is really important wo work on the right subscription, so don't forget about it!

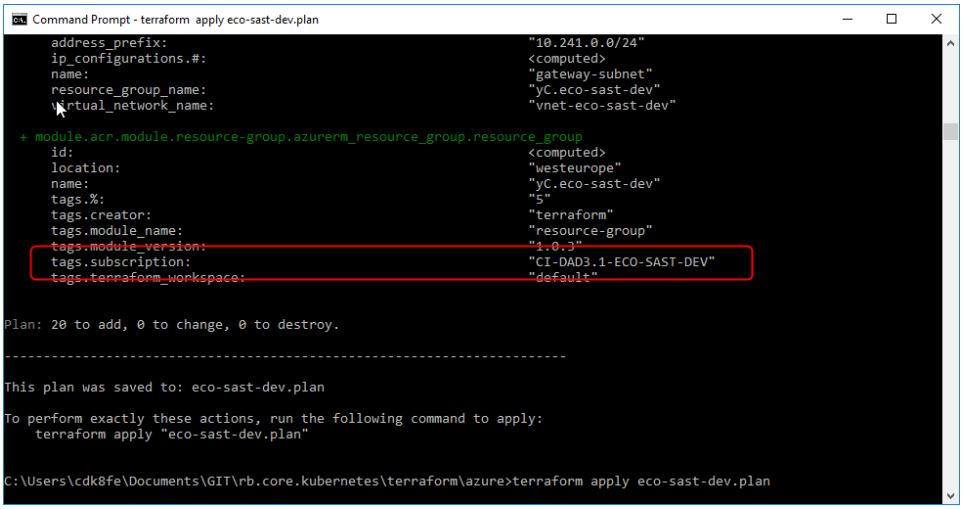
6 Plan the provisioning

It is always good to do a variance analysis at first. Terraform will show you what will be created / deleted / modified on the subscription. CD into the directory of the composition.tf and execute the following command

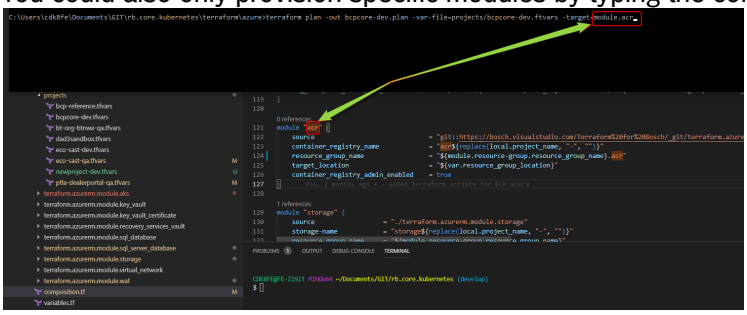
```
terraform plan -out <projectname>-<env>.plan -var-file=projects/<projectname>-<env>.tfvars
```

You will be prompted to provide a service principal secret. If you don't have a secret, the owner of the subscription could create a new secret for you.

After the plan has been created, you can double check if you are working on the right subscription (see screenshot below)



You could also only provision specific modules by typing the command as followed:



```
terraform plan -out <projectname>-<env>.plan -var-file=projects/<projectname>-<env>.tfvars -
target=module.acr -target=module.abc -target=module.xyz
```

7 Execute the plan

To finally start provisioning, you will need to run the plan that has been created recently.

```
terraform apply <projectname>-<env>.plan
```