Terraform Crib-Sheet

GENERAL COMMANDS

#Get the terraform version
```
terraform version
```

#Download and update root modules
```
terraform get -update=true
```

#Open up a terraform interactive terminal
```
terraform console
```

#Format terraform code to HCL standards
```
terraform fmt
```

#Validate terraform code syntax
```
terraform validate
```

INTIALISE TERRAFORM

#Initialise directory/pull providers
```
terraform init
```

#Initialise directory, do not download plugins
```
terraform init -get-plugins=false
```

#Initialise directory, do not verify plugins
```
terraform init -verify-plugins=false
```

#force plugin installation from a directory
```
terraform init -plugin-dir=PATH
```

#upgrade modules and plugins at initilisation
```
terraform init -upgrade
```

#Update backend configuration
```
terraform init -migrate-state -force-copy
```

#Skip backend configuration
```
terraform init -backend=false
```

PLAN TERRAFORM

#Produce a plan with diff between code and state
```
terraform plan
```

#output a plan file for reference during apply
```
terraform plan -out latest.tfplan
```

#Output a plan to show effect of terraform destroy
```
terraform plan -destroy
```

#Target a specific resource for deployment
```
terraform plan -target=ADDRESS
```

#Create a destroy plan & output
```
terraform plan -destroy
```

APPLY TERRAFORM

#Apply the current state of terraform code
```
terraform apply
```

#Specify a previously generated plan to apply
```
terraform apply current.tfplan
```

#Enable auto-approval or automation
```
terraform apply -auto-approve
```

#Specify number of simultaneous apply operations
```
terraform apply --parallelism=5
```

#lock the state file to stop other Terraform actions
```
terraform apply -lock=true
```

DESTROY TERRAFORM

#Destroy resources managed by terraform state
```
terraform destroy
```

#Enable auto-approval or automation
```
terraform destroy -auto-approve
```

MANAGE TERRAFORM STATE

#List all resources in terraform state
```
terraform state list
```

#track an existing resource in state under new name
```
terraform state mv <SOURCE> <DESTINATION>
```

#Pull state and save to a local file
```
terraform state pull > terraform.tfstate
```

#Push state to a remote location
```
terraform state push <PATH>
```

#Replace resource provider
```
terraform state replace-provider A B
```

#Taint a resource to force redeployment on apply
```
terraform taint ADDRESS
```

#Untaint a previously tainted resource
```
terraform untaint ADDRESS
```

#Reconcile the state in the state file
```
terraform refresh
```

MANAGE TERRAFORM WORKSPACES

#List the available workspaces
```
terraform workspace list
```

#Create a new workspace
```
terraform workspace new <WORKSPACE>
```

#Select an existing workspace
```
terraform workspace select default
```

INSPECT INFRASTRUCTURE COMMANDS

#Create a dot diagram of terraform dependencies
```
terraform graph | dot -Tpng > graph.png
```

List the root module outputs
```
terraform output
```

#List the outputs, particularly in JSON formatting.
```
terraform output –json
```

#Outputs human readable format
```
terraform show
```

#Show details about a specific resource
```
terraform state show <RESOURCE>
```

MISCELLANEOUS

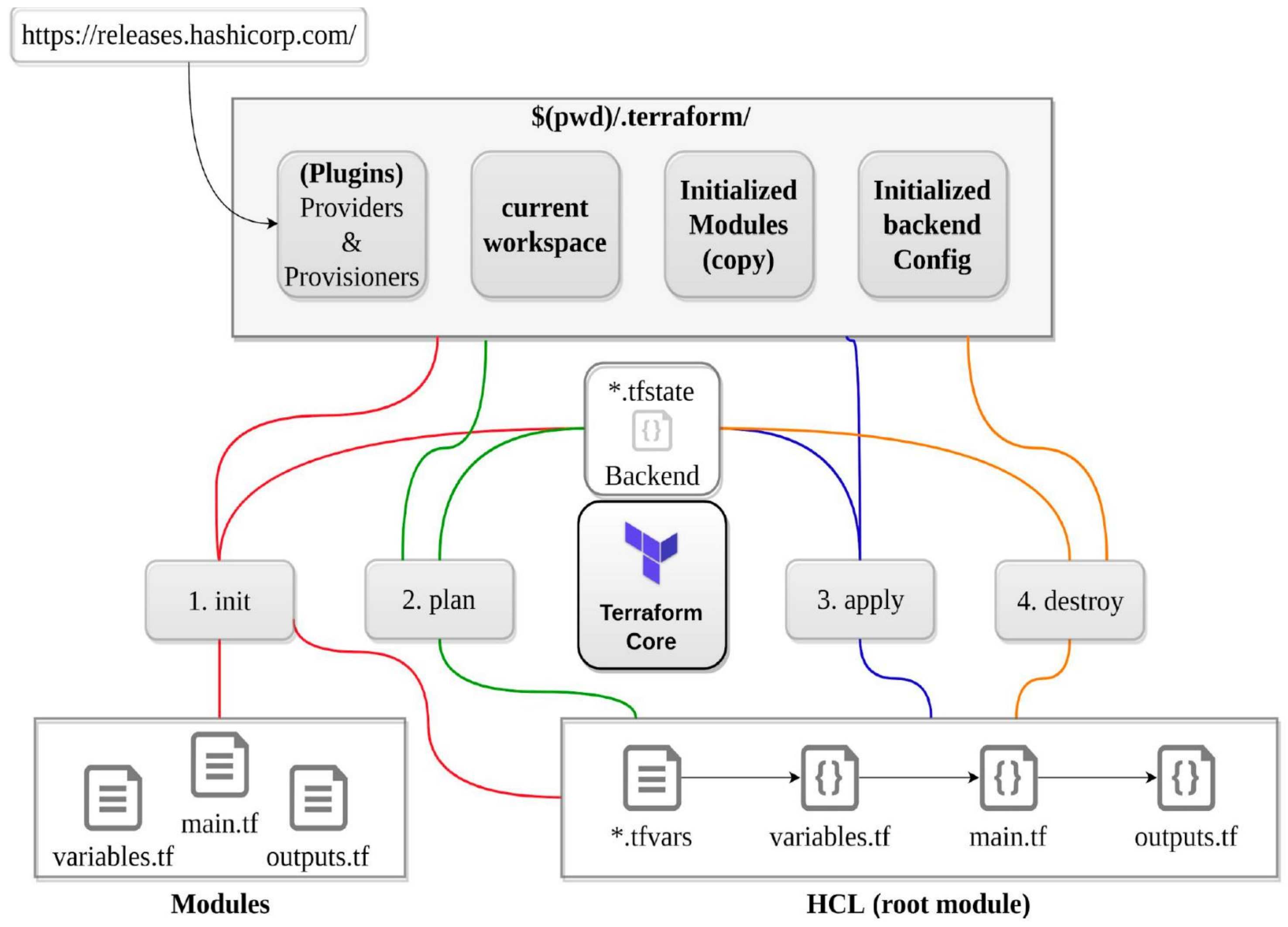
#Enable tab auto-completion in the terminal
```
terraform -install-autocomplete
```

#Show information about provider requirements
```
terraform providers
```

#Replace resource provider
```
terraform state replace-provider A B
```

#Download and update modules in the “root” module
```
terraform get -update=true
```

To target a particular resource and its dependencies use the -target flag. Works with PLAN, APPLY & DESTROY


https://releases.hashicorp.com/
$(pwd)/.terraform/
(Plugins) Providers & Provisioners
current workspace
Initialized Modules (copy)
Initialized backend Config
*.tfstate
Backend
Terraform Core
1. init
2. plan
3. apply
4. destroy
variables.tf
main.tf
outputs.tf
Modules
*.tfvars
variables.tf
main.tf
outputs.tf
HCL (root module)

Terraform **Crib-Sheet**

`init`

- initialises a working directory containing Terraform configuration files.
- performs
  - backend initialization , storage for terraform state file.
  - modules installation, downloaded from terraform registry to local path
  - provider(s) plugins installation, the plugins are downloaded in the sub-directory of the present working directory at the path of .terraform/plugins
- can be run multiple times, to bring the working directory up to date with changes in the configuration
- **does not delete the existing configuration or state**

`validate`

- is used to validate/check the syntax of the Terraform files.
- verifies whether a configuration is syntactically valid and consistent, regardless of any provided variables or existing state.
- syntax check is done on all the terraform files in the directory and will display an error if any of the files doesn't validate.

`plan`

- creates a execution plan
- calculates the difference between the last-known state and the current state, then presents this difference as the output of the terraform plan operation to the user in their terminal
- **does not modify the infrastructure or state.**
- allows a user to see which actions Terraform will perform prior to making any changes to reach the desired state
- will scan all *.tf files in the directory and create the plan
- supports -out to save the plan

`apply`

- apply changes to infrastructure to reach the desired state.
- scans the current directory for the configuration and applies the changes appropriately.
- can be provided with an explicit plan, saved as output from running terraform plan
- If no explicit plan file is given on the command line, terraform apply will create a new plan automatically and prompt for approval to apply it
- **will modify the infrastructure and the state.**
- if a resource successfully creates but fails during provisioning:
  - *Terraform will error and mark the resource as "tainted".*
  - *A resource that is tainted has been physically created but can't be considered safe to use since provisioning failed.*
  - *Terraform does not automatically roll back and destroy the resource during the apply when the failure happens, because that would go against the execution plan: the execution plan will said a resource will be created, but does not say it will ever be deleted.*
- does not import any resource.
- supports -auto-approve to apply the changes without asking for a confirmation
- supports -target to apply a specific module

`destroy`

- destroy the infrastructure and all resources
- **modifies both state and infrastructure**
- terraform destroy -target can be used to destroy targeted resources
- terraform plan -destroy allows creation of destroy plan that can be run later