Terragrunt Terraform orchestration

CONCEPTS

Terragrunt is a wrapper around OpenTofu/Terraform. A unit is a directory with a terragrunt.hcl; a stack is a tree of units run together. Unknown commands such as plan pass through to tofu/terraform.

Discover find units in tree
↓ filter
Order DAG from dependencies
↓ per unit
Init + run auto-init, then tofu cmd
↓ state
Result summary of all units

Use -- to separate Terragrunt flags from tofu/terraform arguments: terragrunt run -- plan -no-color. The old run-all and hclfmt forms are deprecated in favour of run --all and hcl fmt.

--all adds -auto-approve to apply and destroy automatically. Add --no-auto-approve if you want the prompt back.

RUN

`terragrunt run plan`
Plan the unit in this directory

`terragrunt run apply`
Apply the unit in this directory

`terragrunt run init`
Initialise the unit

`terragrunt run destroy`
Destroy the unit

`terragrunt run output`
Show unit outputs

`terragrunt plan`
Shortcut for run plan

`terragrunt run --all plan`
Plan all units below here

`terragrunt run --all apply`
Apply all units in order

`terragrunt run --all destroy`
Destroy all, dependents first

`terragrunt run --graph plan`
Plan this unit and its dependents

RUN (cont.)

`terragrunt run --all --parallelism <n> plan`
Cap concurrent units

`terragrunt run --all --no-auto-approve apply`
Keep the apply prompt

`terragrunt run --source <path> plan`
Override the module source

`terragrunt run --tf-path <bin> plan`
Pick tofu or terraform binary

SELECT UNITS

`--filter '<glob>'`
Only units matching the path

`--filter '!<glob>'`
Exclude matching units

`--working-dir <dir>`
Run as if in another directory

CONFIG BLOCKS

Parent terragrunt.hcl: backend and shared code

```
remote_state {
  backend = "s3"
  generate = { path =
"backend.tf", if_exists =
"overwrite_terragrunt" }
  config = {
    bucket = "my-state"
    key    =
"${path_relative_to_include()}/
tofu.tfstate"
    region = "eu-central-1"
  }
}
```

Block purpose

Block	Use
`include`	Inherit a parent file
`inputs`	Variables passed to the module
`dependency`	Outputs of another unit
`dependencies`	Ordering without outputs
`remote_state`	Backend setup
`generate`	Write helper files
`locals`	Named values in the file
`feature`	Flags set with --feature

mock_outputs let plan work before the dependency has been applied. Without them, plan on a fresh stack fails on missing outputs.

FUNCTIONS

`find_in_parent_folders()`
Nearest parent terragrunt file

`path_relative_to_include()`
Unit path relative to parent

`get_terragrunt_dir()`
Directory of this terragrunt.hcl

`get_env("<NAME>", "<default>")`
Read an environment variable

DISCOVER

`terragrunt find`
List units and stacks

`terragrunt find --json`
Machine-readable list

`terragrunt find --dag`
Sort by dependency order

`terragrunt list`
List configurations

`terragrunt render --json`
Resolved config, includes merged

FORMAT AND VALIDATE

`terragrunt hcl fmt`
Format HCL files in place

`terragrunt hcl fmt --check`
Fail if formatting differs

`terragrunt hcl validate`
Validate HCL files

STACKS AND BACKEND

`terragrunt stack generate`
Create units from stack.hcl

`terragrunt stack run <cmd>`
Run a command on a stack

`terragrunt backend bootstrap`
Create the state backend

RECIPES

Plan only a subset

```
terragrunt run --all --filter
'prod/**' -- plan
terragrunt run --all --filter '!
prod/legacy/**' -- plan
terragrunt run --all --parallelism
4 -- plan -no-color
```