

```
...g/Projects/exam/exam-app/Ansible --zsh    ~/Projects/exam/exam-app --zsh    ...cts/exam/exam-app/Kubernetes --zsh    ...ject

Last login: Fri Mar 22 19:35:43 on ttys001
xiaogangdong@Xiaogangs-MacBook-Air Kubernetes % cd ..
xiaogangdong@Xiaogangs-MacBook-Air exam-app % mkdir Terraform
xiaogangdong@Xiaogangs-MacBook-Air exam-app % cd Terraform
xiaogangdong@Xiaogangs-MacBook-Air Terraform % terraform init

Initializing the backend...

Initializing provider plugins...
- Finding kreuzwerker/docker versions matching "~> 2.13.0"...
- Installing kreuzwerker/docker v2.13.0...
- Installed kreuzwerker/docker v2.13.0 (self-signed, key ID 24E54F214569A8A5)

Partner and community providers are signed by their developers.
If you'd like to know more about provider signing, you can read about it here:
https://www.terraform.io/docs/cli/plugins/signing.html

Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
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Terraform --zsh -- 181x49
...g/Projects/exam/exam-app/Ansible --zsh    ~/Projects/exam/exam-app --zsh    ...cts/exam/exam-app/Kubernetes --zsh    ...jects/exam/exam-app/Terraform --zsh    +

xiaogangdong@Xiaogangs-MacBook-Air Terraform % terraform apply
docker_network.app_network: Refreshing state... [id=6e8c75148a9f3afa9288938183255e1375b76533b9a36d5f2b14a5e3c598cc7ec]
docker_image.nginx: Refreshing state... [id=sha256:878827a3cbe89ac697578e31174acc1699701bd8626d2cf71e01623f41a18f53nginx:latest]

Note: Objects have changed outside of Terraform

Terraform detected the following changes made outside of Terraform since the last "terraform apply" which may have affected this plan:

# docker_image.nginx has been deleted
- resource "docker_image" "nginx" {
  id      = "sha256:878827a3cbe89ac697578e31174acc1699701bd8626d2cf71e01623f41a18f53nginx:latest"
  name    = "nginx:latest" -> null
  # (2 unchanged attributes hidden)
}

Unless you have made equivalent changes to your configuration, or ignored the relevant attributes using ignore_changes, the following plan may include actions to undo or respond to these changes.

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# docker_container.nginx will be created
+ resource "docker_container" "nginx" {
  + attach      = false
  + bridge      = (known after apply)
  + command     = (known after apply)
  + container_logs = (known after apply)
  + endpoint    = (known after apply)
  + env         = [
    + "MY_ENV_VAR=myvalue",
  ]
  + exit_code   = (known after apply)
  + gateway     = (known after apply)
  + hostname    = (known after apply)
  + id          = (known after apply)
  + image       = "nginx:latest"
  + init        = (known after apply)
  + ip_address  = (known after apply)
  + ip_prefix_length = (known after apply)
  + ipc_mode    = (known after apply)
  + log_driver  = "json-file"
  + logs        = false
  + must_run    = true
  + name        = "nginx-container"
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+ networks_advanced {
+   aliases = [
+     "web",
+   ]
+   name     = "app_network"
+ }

+ ports {
+   external = 8080
+   internal = 80
+   ip       = "0.0.0.0"
+   protocol = "tcp"
+ }

+ volumes {
+   container_path = "/usr/share/nginx/html"
+   host_path      = "/Users/xiaogangdong/Projects/exam/exam-app/Terraform/html"
+   read_only      = false
+ }
}

# docker_image.nginx will be created
+ resource "docker_image" "nginx" {
+   id           = (known after apply)
+   latest       = (known after apply)
+   name         = "nginx:latest"
+   output       = (known after apply)
+   repo_digest  = (known after apply)
+ }

Plan: 2 to add, 0 to change, 0 to destroy.

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

docker_image.nginx: Creating...
docker_image.nginx: Creation complete after 10s [id=sha256:070027a3cbe09ac697570e31174acc1699701bd0626d2cf71e01623f41a10f53nginx:latest]
docker_container.nginx: Creating...
docker_container.nginx: Creation complete after 4s [id=d3ed26ac3116392c04ca638d2abde0451b9b03f79379a86a436244545d4f9bf9]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
xiaogangdong@Xiaogangs-MacBook-Air Terraform %

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Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
xiaogangdong@Xiaogangs-MacBook-Air Terraform % docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED          STATUS          PORTS          NAMES
d3ed26ac3116   nginx:latest                       "/docker-entrypoint.…"   About a minute ago Up About a minute 0.0.0.0:8080->80/tcp nginx-container
fd3f758165cb   dockersamples/examplevotingapp_vote:after rixay2u                 5 minutes ago   Up 5 minutes    6379/tcp       vote_vote.2.zmnhimuowau17dma43
6106d3cc2274   redis:alpine                       "docker-entrypoint.s…"   5 minutes ago   Up 5 minutes    6379/tcp       vote_redis.1.iby2evah5479rzpw
tgac12pz       redis:alpine                       "docker-entrypoint.s…"   5 minutes ago   Up 5 minutes    6379/tcp       vote_redis.2.cwljzbzewrhhu3u4q
20bq22s8       dockersamples/examplevotingapp_result:after "/usr/bin/tini -- no…"   5 minutes ago   Up 5 minutes    80/tcp         vote_result.1.fxmbngzqzqw41w
pkxz7f7zb      dockersamples/examplevotingapp_worker:latest "dotnet Worker.dll"      5 minutes ago   Up 5 minutes    vote_worker.1.n43r67u7krwxyrii
o5yk0042f
xiaogangdong@Xiaogangs-MacBook-Air Terraform % docker inspect nginx-container
[
  {
    "Id": "d3ed26ac3116392c04ca638d2abde0451b9b03f79379a86a436244545d4f9bf9",
    "Created": "2024-03-23T00:46:46.796959802Z",
    "Path": "/docker-entrypoint.sh",
    "Args": [
      "nginx",
      "-g",
      "daemon off;"
    ],
    "State": {
      "Status": "running",
      "Running": true,
      "Paused": false,
      "Restarting": false,
      "OOMKilled": false,
      "Dead": false,
      "Pid": 14374,
      "ExitCode": 0,
      "Error": "",
      "StartedAt": "2024-03-23T00:46:47.261705386Z",
      "FinishedAt": "0001-01-01T00:00:00Z"
    },
    "Image": "sha256:070027a3cbe09ac697570e31174acc1699701bd0626d2cf71e01623f41a10f53",
    "ResolvConfPath": "/var/lib/docker/containers/d3ed26ac3116392c04ca638d2abde0451b9b03f79379a86a436244545d4f9bf9/resolv.conf",
    "HostnamePath": "/var/lib/docker/containers/d3ed26ac3116392c04ca638d2abde0451b9b03f79379a86a436244545d4f9bf9/hostname",
    "HostsPath": "/var/lib/docker/containers/d3ed26ac3116392c04ca638d2abde0451b9b03f79379a86a436244545d4f9bf9/hosts",
    "LogPath": "/var/lib/docker/containers/d3ed26ac3116392c04ca638d2abde0451b9b03f79379a86a436244545d4f9bf9/d3ed26ac3116392c04ca638d2abde0451b9b03f79379a86a436244545d4f9bf9-json.log",
    "Name": "/nginx-container",
    "RestartCount": 0,
    "Driver": "overlay2",
    "Platform": "linux",
  }
]

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    "Name": "overlay2",
  },
  "Mounts": [
    {
      "Type": "bind",
      "Source": "/Users/xiaogangdong/Projects/exam/exam-app/Terraform/html",
      "Destination": "/usr/share/nginx/html",
      "Mode": "rw",
      "RW": true,
      "Propagation": "rprivate"
    }
  ],
  "Config": {
    "Hostname": "d3ed26ac3116",
    "Domainname": "",
    "User": "",

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  },
  "NetworkSettings": {
    "Bridge": "",
    "SandboxID": "c4d99c21de925477e5e19776685c404995644a9c08309bf1374003418b38afc8",
    "HairpinMode": false,
    "LinkLocalIPv6Address": "",
    "LinkLocalIPv6PrefixLen": 0,
    "Ports": {
      "80/tcp": [
        {
          "HostIp": "0.0.0.0",
          "HostPort": "8080"
        }
      ]
    },
    "SandboxKey": "/var/run/docker/netns/c4d99c21de92",
    "SecondaryIPAddresses": null,
    "SecondaryIPv6Addresses": null,
    "EndpointID": "",
    "Gateway": "",
    "GlobalIPv6Address": "",
    "GlobalIPv6PrefixLen": 0,
    "IPAddress": "",
    "IPPrefixLen": 0,
    "IPv6Gateway": "",
    "MacAddress": "",
    "Networks": {
      "app_network": {
        "IPAMConfig": {},
        "Links": null,
        "Aliases": [
          "web",
          "d3ed26ac3116"
        ],
        "MacAddress": "02:42:ac:13:00:02",
        "NetworkID": "6e8c75148a9f3afa928038103255e1375b76533b9a36d5f2b14a5a3c580cc7ec",
        "EndpointID": "085ed47b8adce3ec5b6d78364f19237630bd9fcca2f00873e848dfa4d63ec505",
        "Gateway": "172.19.0.1",
        "IPAddress": "172.19.0.2",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "DriverOpts": null
      }
    }
  }
}

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xiaogangdong@Xiaogangs-MacBook-Air Terraform % docker exec nginx-container env
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin
HOSTNAME=d3ed26ac3116
MY_ENV_VAR=myvalue
NGINX_VERSION=1.25.4
NJS_VERSION=0.8.3
PKG_RELEASE=1~bookworm
HOME=/root
xiaogangdong@Xiaogangs-MacBook-Air Terraform %
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