

# LAB | Building and Using Custom Terraform Modules

previous request to create the named bucket succeeded and you already own it.

```
with module.payroll.aws_s3_bucket.payroll_docs,  
on modules/payroll/main.tf line 10, in resource "aws_s3_bucket" "payroll_docs":  
10: resource "aws_s3_bucket" "payroll_docs" {
```

vijayagagla@DESKTOP-FP4OP26:~/terra\_course/terraform\$

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on modules/payroll/main.tf line 10, in resource "aws_s3_bucket" "payroll_docs":
```

```
10: resource "aws_s3_bucket" "payroll_docs" {
```

```
vijayagagla@DESKTOP-FP4OP26:~/terra_course/terraform$ terraform apply -auto-approve
module.payroll.aws_dynamodb_table.payroll_db: Refreshing state... [id=PayrollDB-vijaya]
module.payroll.aws_instance.payroll_server: Refreshing state... [id=i-0961cae5ad4a872d7]
```

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:

```
# module.payroll.aws_s3_bucket.payroll_docs will be created
+ resource "aws_s3_bucket" "payroll_docs" {
  + acceleration_status      = (known after apply)
  + acl                      = (known after apply)
  + arn                      = (known after apply)
  + bucket                  = "my-terraform-state-bucket-payroll-vijaya"
  + bucket_domain_name      = (known after apply)
  + bucket_prefix           = (known after apply)
  + bucket_region           = (known after apply)
  + bucket_regional_domain_name = (known after apply)
  + force_destroy           = false
  + hosted_zone_id          = (known after apply)
  + id                      = (known after apply)
  + object_lock_enabled      = (known after apply)
  + policy                  = (known after apply)
  + region                  = "eu-west-1"
  + request_payer            = (known after apply)
  + tags_all                = (known after apply)
  + website_domain           = (known after apply)
  + website_endpoint        = (known after apply)

  + cors_rule (known after apply)

  + grant (known after apply)

  + lifecycle_rule (known after apply)

  + logging (known after apply)

  + object_lock_configuration (known after apply)

  + object_lock_configuration (known after apply)
  + object_lock_configuration (known after apply)
```

```

+ replication_configuration (known after apply)
+ replication_configuration (known after apply)

+ replication_configuration (known after apply)

+ server_side_encryption_configuration (known after apply)

+ versioning (known after apply)

+ website (known after apply)
}

```

Plan: 1 to add, 0 to change, 0 to destroy.

module.payroll.aws\_s3\_bucket.payroll\_docs: Creating...

module.payroll.aws\_s3\_bucket.payroll\_docs: Creation complete after 1s

[id=my-terraform-state-bucket-payroll-vijaya]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.

vijayagagla@DESKTOP-FP4OP26:~/terra\_course/terraform\$ terraform init

Initializing the backend...

Initializing modules...

- payroll\_europe in modules/payroll

Initializing provider plugins...

- Reusing previous version of hashicorp/aws from the dependency lock file

- Using previously-installed hashicorp/aws v6.28.0

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.

vijayagagla@DESKTOP-FP4OP26:~/terra\_course/terraform\$ terraform plan

module.payroll.aws\_dynamodb\_table.payroll\_db: Refreshing state... [id=PayrollDB-vijaya]

module.payroll.aws\_instance.payroll\_server: Refreshing state... [id=i-0961cae5ad4a872d7]

module.payroll.aws\_s3\_bucket.payroll\_docs: Refreshing state...

[id=my-terraform-state-bucket-payroll-vijaya]

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:

# module.payroll\_europe.aws\_dynamodb\_table.payroll\_db will be created

```
+ resource "aws_dynamodb_table" "payroll_db" {  
  + arn                = (known after apply)  
  + billing_mode       = "PAY_PER_REQUEST"  
  + hash_key           = "EmployeeID"  
  + id                 = (known after apply)  
  + name                = "PayrollDB-eu-west-2-vijaya"  
  + read_capacity      = (known after apply)  
  + region              = "eu-west-2"  
  + stream_arn         = (known after apply)  
  + stream_label       = (known after apply)  
  + stream_view_type   = (known after apply)  
  + tags_all           = (known after apply)  
  + write_capacity     = (known after apply)
```

```
  + attribute {  
    + name = "EmployeeID"  
    + type = "S"  
  }  
  
  + global_secondary_index (known after apply)  
  
  + global_table_witness (known after apply)  
  
  + point_in_time_recovery (known after apply)  
  
  + server_side_encryption (known after apply)  
  
  + ttl (known after apply)  
  
  + warm_throughput (known after apply)  
}
```

# module.payroll\_europe.aws\_instance.payroll\_server will be created

```
+ resource "aws_instance" "payroll_server" {  
  + ami                = "ami-0737d2d50c7fece1b"  
  + arn                 = (known after apply)  
  + associate_public_ip_address = (known after apply)  
  + availability_zone   = (known after apply)
```

- + disable\_api\_stop = (known after apply)
- + disable\_api\_termination = (known after apply)
- + ebs\_optimized = (known after apply)
- + enable\_primary\_ipv6 = (known after apply)
- + force\_destroy = false
- + get\_password\_data = false
- + host\_id = (known after apply)
- + host\_resource\_group\_arn = (known after apply)
- + iam\_instance\_profile = (known after apply)
- + id = (known after apply)
- + instance\_initiated\_shutdown\_behavior = (known after apply)
- + instance\_lifecycle = (known after apply)
- + instance\_state = (known after apply)
- + instance\_type = "t2.micro"
- + ipv6\_address\_count = (known after apply)
- + ipv6\_addresses = (known after apply)
- + key\_name = (known after apply)
- + monitoring = (known after apply)
- + outpost\_arn = (known after apply)
- + password\_data = (known after apply)
- + placement\_group = (known after apply)
- + placement\_group\_id = (known after apply)
- + placement\_partition\_number = (known after apply)
- + primary\_network\_interface\_id = (known after apply)
- + private\_dns = (known after apply)
- + private\_ip = (known after apply)
- + public\_dns = (known after apply)
- + public\_ip = (known after apply)
- + region = "eu-west-2"
- + secondary\_private\_ips = (known after apply)
- + security\_groups = (known after apply)
- + source\_dest\_check = true
- + spot\_instance\_request\_id = (known after apply)
- + subnet\_id = (known after apply)
- + tags = {
  - + "Name" = "Payroll-Server"
 }
- + tags\_all = {
  - + "Name" = "Payroll-Server"
 }
- + tenancy = (known after apply)
- + user\_data\_base64 = (known after apply)
- + user\_data\_replace\_on\_change = false
- + vpc\_security\_group\_ids = (known after apply)

- + capacity\_reservation\_specification (known after apply)
- + cpu\_options (known after apply)
- + ebs\_block\_device (known after apply)
- + enclave\_options (known after apply)
- + ephemeral\_block\_device (known after apply)
- + instance\_market\_options (known after apply)
- + maintenance\_options (known after apply)
- + metadata\_options (known after apply)
- + network\_interface (known after apply)
- + primary\_network\_interface (known after apply)
- + private\_dns\_name\_options (known after apply)
- + root\_block\_device (known after apply)

}

# module.payroll\_europe.aws\_s3\_bucket.payroll\_docs will be created

```
+ resource "aws_s3_bucket" "payroll_docs" {
  + acceleration_status      = (known after apply)
  + acl                      = (known after apply)
  + arn                     = (known after apply)
  + bucket                  = "my-terraform-state-bucket-payroll-eu-west-2-vijaya"
  + bucket_domain_name      = (known after apply)
  + bucket_prefix           = (known after apply)
  + bucket_region           = (known after apply)
  + bucket_regional_domain_name = (known after apply)
  + force_destroy           = false
  + hosted_zone_id          = (known after apply)
  + id                      = (known after apply)
  + object_lock_enabled      = (known after apply)
  + policy                  = (known after apply)
  + region                  = "eu-west-2"
  + request_payer            = (known after apply)
  + tags_all                = (known after apply)
```

- + website\_domain = (known after apply)
- + website\_endpoint = (known after apply)
- + cors\_rule (known after apply)
- + grant (known after apply)
- + lifecycle\_rule (known after apply)
- + logging (known after apply)
- + object\_lock\_configuration (known after apply)
- + replication\_configuration (known after apply)
- + server\_side\_encryption\_configuration (known after apply)
- + versioning (known after apply)
- + website (known after apply)

}

Plan: 3 to add, 0 to change, 0 to destroy.

---

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now.

```
vijayagagla@DESKTOP-FP4OP26:~/terra_course/terraform$ terraform apply -auto-approve
module.payroll.aws_dynamodb_table.payroll_db: Refreshing state... [id=PayrollDB-vijaya]
module.payroll.aws_s3_bucket.payroll_docs: Refreshing state...
[id=my-terraform-state-bucket-payroll-vijaya]
module.payroll.aws_instance.payroll_server: Refreshing state... [id=i-0961cae5ad4a872d7]
```

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:

```
# module.payroll_europe.aws_dynamodb_table.payroll_db will be created
+ resource "aws_dynamodb_table" "payroll_db" {
```

```

+ arn          = (known after apply)
+ billing_mode  = "PAY_PER_REQUEST"
+ hash_key     = "EmployeeID"
+ id           = (known after apply)
+ name         = "PayrollDB-eu-west-2-vijaya"
+ read_capacity = (known after apply)
+ region       = "eu-west-2"
+ stream_arn    = (known after apply)
+ stream_label  = (known after apply)
+ stream_view_type = (known after apply)
+ tags_all      = (known after apply)
+ write_capacity = (known after apply)

+ attribute {
  + name = "EmployeeID"
  + type = "S"
}

+ global_secondary_index (known after apply)

+ global_table_witness (known after apply)

+ point_in_time_recovery (known after apply)

+ server_side_encryption (known after apply)

+ ttl (known after apply)

+ warm_throughput (known after apply)
}

# module.payroll_europe.aws_instance.payroll_server will be created
+ resource "aws_instance" "payroll_server" {
  + ami          = "ami-0737d2d50c7fece1b"
  + arn          = (known after apply)
  + associate_public_ip_address = (known after apply)
  + availability_zone = (known after apply)
  + disable_api_stop = (known after apply)
  + disable_api_termination = (known after apply)
  + ebs_optimized = (known after apply)
  + enable_primary_ipv6 = (known after apply)
  + force_destroy = false
  + get_password_data = false
  + host_id       = (known after apply)

```

- + host\_resource\_group\_arn = (known after apply)
- + iam\_instance\_profile = (known after apply)
- + id = (known after apply)
- + instance\_initiated\_shutdown\_behavior = (known after apply)
- + instance\_lifecycle = (known after apply)
- + instance\_state = (known after apply)
- + instance\_type = "t2.micro"
- + ipv6\_address\_count = (known after apply)
- + ipv6\_addresses = (known after apply)
- + key\_name = (known after apply)
- + monitoring = (known after apply)
- + outpost\_arn = (known after apply)
- + password\_data = (known after apply)
- + placement\_group = (known after apply)
- + placement\_group\_id = (known after apply)
- + placement\_partition\_number = (known after apply)
- + primary\_network\_interface\_id = (known after apply)
- + private\_dns = (known after apply)
- + private\_ip = (known after apply)
- + public\_dns = (known after apply)
- + public\_ip = (known after apply)
- + region = "eu-west-2"
- + secondary\_private\_ips = (known after apply)
- + security\_groups = (known after apply)
- + source\_dest\_check = true
- + spot\_instance\_request\_id = (known after apply)
- + subnet\_id = (known after apply)
- + tags = {
  - + "Name" = "Payroll-Server"
 }
- + tags\_all = {
  - + "Name" = "Payroll-Server"
 }
- + tenancy = (known after apply)
- + user\_data\_base64 = (known after apply)
- + user\_data\_replace\_on\_change = false
- + vpc\_security\_group\_ids = (known after apply)
  
- + capacity\_reservation\_specification (known after apply)
  
- + cpu\_options (known after apply)
  
- + ebs\_block\_device (known after apply)

- + enclave\_options (known after apply)
- + ephemeral\_block\_device (known after apply)
- + instance\_market\_options (known after apply)
- + maintenance\_options (known after apply)
- + metadata\_options (known after apply)
- + network\_interface (known after apply)
- + primary\_network\_interface (known after apply)
- + private\_dns\_name\_options (known after apply)
- + root\_block\_device (known after apply)

}

# module.payroll\_europe.aws\_s3\_bucket.payroll\_docs will be created

```
+ resource "aws_s3_bucket" "payroll_docs" {
  + acceleration_status      = (known after apply)
  + acl                      = (known after apply)
  + arn                     = (known after apply)
  + bucket                  = "my-terraform-state-bucket-payroll-eu-west-2-vijaya"
  + bucket_domain_name      = (known after apply)
  + bucket_prefix           = (known after apply)
  + bucket_region           = (known after apply)
  + bucket_regional_domain_name = (known after apply)
  + force_destroy           = false
  + hosted_zone_id          = (known after apply)
  + id                      = (known after apply)
  + object_lock_enabled      = (known after apply)
  + policy                  = (known after apply)
  + region                  = "eu-west-2"
  + request_payer           = (known after apply)
  + tags_all                = (known after apply)
  + website_domain           = (known after apply)
  + website_endpoint        = (known after apply)

  + cors_rule (known after apply)

  + grant (known after apply)
```

- + lifecycle\_rule (known after apply)
- + logging (known after apply)
- + object\_lock\_configuration (known after apply)
- + replication\_configuration (known after apply)
- + server\_side\_encryption\_configuration (known after apply)
- + versioning (known after apply)
- + website (known after apply)

}

Plan: 3 to add, 0 to change, 0 to destroy.

module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Creating...  
 module.payroll\_europe.aws\_instance.payroll\_server: Creating...  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Creating...  
 module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Creation complete after 1s  
 [id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Still creating... [00m09s elapsed]

Plan: 3 to add, 0 to change, 0 to destroy.

module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Creating...  
 module.payroll\_europe.aws\_instance.payroll\_server: Creating...  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Creating...  
 module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Creation complete after 1s  
 [id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Still creating... [00m09s elapsed]  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Creation complete after 10s  
 [id=PayrollDB-eu-wePlan: 3 to add, 0 to change, 0 to destroy.  
 module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Creating...  
 module.payroll\_europe.aws\_instance.payroll\_server: Creating...  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Creating...  
 module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Creation complete after 1s  
 [id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Still creating... [00m09s elapsed]  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Creation complete after 10s  
 [id=PayrollDB-eu-wemodule.payroll\_europe.aws\_instance.payroll\_server: Creating...  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Creating...  
 module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Creation complete after 1s  
 [id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]  
 module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Still creating... [00m09s elapsed]

```

module.payroll_europe.aws_dynamodb_table.payroll_db: Creation complete after 10s
[id=PayrollDB-eu-wemodule.payroll_europe.aws_dynamodb_table.payroll_db: Creating...
module.payroll_europe.aws_s3_bucket.payroll_docs: Creation complete after 1s
[id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]
module.payroll_europe.aws_dynamodb_table.payroll_db: Still creating... [00m09s elapsed]
module.payroll_europe.aws_dynamodb_table.payroll_db: Creation complete after 10s
[id=PayrollDB-eu-wemodule.payroll_europe.aws_s3_bucket.payroll_docs: Creation complete
after 1s [id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]
module.payroll_europe.aws_dynamodb_table.payroll_db: Still creating... [00m09s elapsed]
module.payroll_europe.aws_dynamodb_table.payroll_db: Creation complete after 10s
[id=PayrollDB-eu-webucket-payroll-eu-west-2-vijaya]
module.payroll_europe.aws_dynamodb_table.payroll_db: Still creating... [00m09s elapsed]
module.payroll_europe.aws_dynamodb_table.payroll_db: Creation complete after 10s
[id=PayrollDB-eu-wemodule.payroll_europe.aws_dynamodb_table.payroll_db: Still creating...
[00m09s elapsed]
module.payroll_europe.aws_dynamodb_table.payroll_db: Creation complete after 10s
[id=PayrollDB-eu-west-2-vijaya]
module.payroll_europe.aws_dynamodb_table.payroll_db: Creation complete after 10s
[id=PayrollDB-eu-west-2-vijaya]
st-2-vijaya]

|
| Error: creating EC2 Instance: operation error EC2: RunInstances, https response error
| StatusCode: 400, RequestID: d865c413-8f86-44eb-bbec-da0cc5fda066, api error
| VPCIdNotSpecified: No default VPC for this user. GroupName is only supported for EC2-Classic
| and default VPC.
|
| with module.payroll_europe.aws_instance.payroll_server,
| on modules/payroll/main.tf line 1, in resource "aws_instance" "payroll_server":
|   1: resource "aws_instance" "payroll_server" {
|
|

```

```

vijayagagla@DESKTOP-FP4OP26:~/terra_course/terraform$ terraform plan
module.payroll.aws_dynamodb_table.payroll_db: Refreshing state... [id=PayrollDB-vijaya]
module.payroll_europe.aws_s3_bucket.payroll_docs: Refreshing state...
[id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]
module.payroll.aws_s3_bucket.payroll_docs: Refreshing state...
[id=my-terraform-state-bucket-payroll-vijaya]
module.payroll_europe.aws_dynamodb_table.payroll_db: Refreshing state...
[id=PayrollDB-eu-west-2-vijaya]
module.payroll.aws_instance.payroll_server: Refreshing state... [id=i-0961cae5ad4a872d7]

```

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:

# module.payroll\_europe.aws\_instance.payroll\_server will be created

```
+ resource "aws_instance" "payroll_server" {
  + ami                  = "ami-018ff7ece22bf96db"
  + arn                  = (known after apply)
  + associate_public_ip_address = (known after apply)
  + availability_zone      = (known after apply)
  + disable_api_stop       = (known after apply)
  + disable_api_termination = (known after apply)
  + ebs_optimized          = (known after apply)
  + enable_primary_ipv6    = (known after apply)
  + force_destroy          = false
  + get_password_data       = false
  + host_id                = (known after apply)
  + host_resource_group_arn = (known after apply)
  + iam_instance_profile    = (known after apply)
  + id                     = (known after apply)
  + instance_initiated_shutdown_behavior = (known after apply)
  + instance_lifecycle      = (known after apply)
  + instance_state          = (known after apply)
  + instance_type           = "t2.micro"
  + ipv6_address_count       = (known after apply)
  + ipv6_addresses          = (known after apply)
  + key_name                = (known after apply)
  + monitoring              = (known after apply)
  + outpost_arn             = (known after apply)
  + password_data           = (known after apply)
  + placement_group         = (known after apply)
  + placement_group_id      = (known after apply)
  + placement_partition_number = (known after apply)
  + primary_network_interface_id = (known after apply)
  + private_dns             = (known after apply)
  + private_ip              = (known after apply)
  + public_dns              = (known after apply)
  + public_ip               = (known after apply)
  + region                  = "eu-west-2"
  + secondary_private_ips   = (known after apply)
  + security_groups         = (known after apply)
  + source_dest_check       = true
  + spot_instance_request_id = (known after apply)
  + subnet_id               = (known after apply)
```

```

+ tags              = {
  + "Name" = "Payroll-Server"
}
+ tags_all          = {
  + "Name" = "Payroll-Server"
}
+ tenancy            = (known after apply)
+ user_data_base64   = (known after apply)
+ user_data_replace_on_change = false
+ vpc_security_group_ids = (known after apply)

+ capacity_reservation_specification (known after apply)

+ cpu_options (known after apply)

+ ebs_block_device (known after apply)

+ enclave_options (known after apply)

+ ephemeral_block_device (known after apply)

+ instance_market_options (known after apply)

+ maintenance_options (known after apply)

+ metadata_options (known after apply)

+ network_interface (known after apply)

+ primary_network_interface (known after apply)

+ private_dns_name_options (known after apply)

+ root_block_device (known after apply)
}

```

Plan: 1 to add, 0 to change, 0 to destroy.

---



---

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now.

vijayagagla@DESKTOP-FP4OP26:~/terra\_course/terraform\$ terraform apply -auto-approve

```
module.payroll_europe.aws_dynamodb_table.payroll_db: Refreshing state...  
[id=PayrollDB-eu-west-2-vijaya]  
module.payroll.aws_dynamodb_table.payroll_db: Refreshing state... [id=PayrollDB-vijaya]  
module.payroll_europe.aws_s3_bucket.payroll_docs: Refreshing state...  
[id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]  
module.payroll.aws_s3_bucket.payroll_docs: Refreshing state...  
[id=my-terraform-state-bucket-payroll-vijaya]  
module.payroll.aws_instance.payroll_server: Refreshing state... [id=i-0961cae5ad4a872d7]
```

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:

```
# module.payroll_europe.aws_instance.payroll_server will be created  
+ resource "aws_instance" "payroll_server" {  
  + ami                  = "ami-018ff7ece22bf96db"  
  + arn                  = (known after apply)  
  + associate_public_ip_address = (known after apply)  
  + availability_zone     = (known after apply)  
  + disable_api_stop     = (known after apply)  
  + disable_api_termination = (known after apply)  
  + ebs_optimized        = (known after apply)  
  + enable_primary_ipv6   = (known after apply)  
  + force_destroy        = false  
  + get_password_data     = false  
  + host_id               = (known after apply)  
  + host_resource_group_arn = (known after apply)  
  + iam_instance_profile  = (known after apply)  
  + id                   = (known after apply)  
  + instance_initiated_shutdown_behavior = (known after apply)  
  + instance_lifecycle    = (known after apply)  
  + instance_state        = (known after apply)  
  + instance_type         = "t2.micro"  
  + ipv6_address_count    = (known after apply)  
  + ipv6_addresses        = (known after apply)  
  + key_name              = (known after apply)  
  + monitoring            = (known after apply)  
  + outpost_arn           = (known after apply)  
  + password_data         = (known after apply)  
  + placement_group       = (known after apply)  
  + placement_group_id    = (known after apply)
```

```
+ placement_partition_number      = (known after apply)
+ primary_network_interface_id    = (known after apply)
+ private_dns                     = (known after apply)
+ private_ip                      = (known after apply)
+ public_dns                      = (known after apply)
+ public_ip                      = (known after apply)
+ region                         = "eu-west-2"
+ secondary_private_ips           = (known after apply)
+ security_groups                 = (known after apply)
+ source_dest_check               = true
+ spot_instance_request_id        = (known after apply)
+ subnet_id                      = (known after apply)
+ tags                           = {
  + "Name" = "Payroll-Server"
}
+ tags_all                       = {
  + "Name" = "Payroll-Server"
}
+ tenancy                        = (known after apply)
+ user_data_base64               = (known after apply)
+ user_data_replace_on_change    = false
+ vpc_security_group_ids         = (known after apply)

+ capacity_reservation_specification (known after apply)

+ cpu_options (known after apply)

+ ebs_block_device (known after apply)

+ enclave_options (known after apply)

+ ephemeral_block_device (known after apply)

+ instance_market_options (known after apply)

+ maintenance_options (known after apply)

+ metadata_options (known after apply)

+ network_interface (known after apply)

+ primary_network_interface (known after apply)

+ private_dns_name_options (known after apply)
```

```
+ root_block_device (known after apply)
}
```

Plan: 1 to add, 0 to change, 0 to destroy.

module.payroll\_europe.aws\_instance.payroll\_server: Creating...

```
| Error: creating EC2 Instance: operation error EC2: RunInstances, https response error
| StatusCode: 400, RequestID: 9a2a5623-7eee-4192-a290-7b8a9b61a0c8, api error
| VPCIdNotSpecified: No default VPC for this user. GroupName is only supported for EC2-Classic
| and default VPC.
```

```
| with module.payroll_europe.aws_instance.payroll_server,
| on modules/payroll/main.tf line 1, in resource "aws_instance" "payroll_server":
| 1: resource "aws_instance" "payroll_server" {
```

vijayagagla@DESKTOP-FP4OP26:~/terra\_course/terraform\$ terraform apply -auto-approve

module.payroll.aws\_s3\_bucket.payroll\_docs: Refreshing state...

[id=my-terraform-state-bucket-payroll-vijaya]

module.payroll.aws\_dynamodb\_table.payroll\_db: Refreshing state... [id=PayrollDB-vijaya]

module.payroll\_europe.aws\_dynamodb\_table.payroll\_db: Refreshing state...

[id=PayrollDB-eu-west-2-vijaya]

module.payroll\_europe.aws\_s3\_bucket.payroll\_docs: Refreshing state...

[id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]

module.payroll.aws\_instance.payroll\_server: Refreshing state... [id=i-0961cae5ad4a872d7]

Terraform used the selected providers to generate the following execution plan. Resource actions

are indicated with the following symbols:

+ create

+/+ destroy and then create replacement

Terraform will perform the following actions:

```
# module.payroll_europe.aws_dynamodb_table.payroll_db must be replaced
-/++ resource "aws_dynamodb_table" "payroll_db" {
  ~ arn          =
"arn:aws:dynamodb:eu-west-2:686699774218:table/PayrollDB-eu-west-2-vijaya" -> (known after
apply)
  - deletion_protection_enabled = false -> null
  ~ id                        = "PayrollDB-eu-west-2-vijaya" -> (known after apply)
  ~ name                    = "PayrollDB-eu-west-2-vijaya" -> "PayrollDB-eu-central-1-vijaya" #
forces replacement
```

~ read\_capacity = 0 -> (known after apply)  
~ region = "eu-west-2" -> "eu-central-1"  
+ stream\_arn = (known after apply)  
- stream\_enabled = false -> null  
+ stream\_label = (known after apply)  
+ stream\_view\_type = (known after apply)  
- table\_class = "STANDARD" -> null  
- tags = {} -> null  
~ tags\_all = {} -> (known after apply)  
~ write\_capacity = 0 -> (known after apply)  
# (2 unchanged attributes hidden)

~ global\_secondary\_index (known after apply)

~ global\_table\_witness (known after apply)

~ point\_in\_time\_recovery (known after apply)

- point\_in\_time\_recovery {  
 - enabled = false -> null  
 - recovery\_period\_in\_days = 0 -> null  
}

~ server\_side\_encryption (known after apply)

~ ttl (known after apply)

- ttl {  
 - enabled = false -> null  
 # (1 unchanged attribute hidden)  
}

~ warm\_throughput (known after apply)

# (1 unchanged block hidden)  
}

# module.payroll\_europe.aws\_instance.payroll\_server will be created

+ resource "aws\_instance" "payroll\_server" {  
 + ami = "ami-0191d47ba10441f0b"  
 + arn = (known after apply)  
 + associate\_public\_ip\_address = (known after apply)  
 + availability\_zone = (known after apply)  
 + disable\_api\_stop = (known after apply)  
 + disable\_api\_termination = (known after apply)  
 + ebs\_optimized = (known after apply)

+ enable\_primary\_ipv6 = (known after apply)  
+ force\_destroy = false  
+ get\_password\_data = false  
+ host\_id = (known after apply)  
+ host\_resource\_group\_arn = (known after apply)  
+ iam\_instance\_profile = (known after apply)  
+ id = (known after apply)  
+ instance\_initiated\_shutdown\_behavior = (known after apply)  
+ instance\_lifecycle = (known after apply)  
+ instance\_state = (known after apply)  
+ instance\_type = "t2.micro"  
+ ipv6\_address\_count = (known after apply)  
+ ipv6\_addresses = (known after apply)  
+ key\_name = (known after apply)  
+ monitoring = (known after apply)  
+ outpost\_arn = (known after apply)  
+ password\_data = (known after apply)  
+ placement\_group = (known after apply)  
+ placement\_group\_id = (known after apply)  
+ placement\_partition\_number = (known after apply)  
+ primary\_network\_interface\_id = (known after apply)  
+ private\_dns = (known after apply)  
+ private\_ip = (known after apply)  
+ public\_dns = (known after apply)  
+ public\_ip = (known after apply)  
+ region = "eu-central-1"  
+ secondary\_private\_ips = (known after apply)  
+ security\_groups = (known after apply)  
+ source\_dest\_check = true  
+ spot\_instance\_request\_id = (known after apply)  
+ subnet\_id = (known after apply)  
+ tags = {  
 + "Name" = "Payroll-Server"  
}  
+ tags\_all = {  
 + "Name" = "Payroll-Server"  
}  
+ tenancy = (known after apply)  
+ user\_data\_base64 = (known after apply)  
+ user\_data\_replace\_on\_change = false  
+ vpc\_security\_group\_ids = (known after apply)  
  
+ capacity\_reservation\_specification (known after apply)



```

~ request_payer          = "BucketOwner" -> (known after apply)
- tags                   = {} -> null
~ tags_all               = {} -> (known after apply)
+ website_domain         = (known after apply)
+ website_endpoint       = (known after apply)
# (1 unchanged attribute hidden)

~ cors_rule (known after apply)

~ grant (known after apply)
- grant {
  - id      =
"2c8449331015d6389db9f90b3655ee636ecfcbb3e34b0675383dafa76272a6d4" -> null
  - permissions = [
    - "FULL_CONTROL",
  ] -> null
  - type      = "CanonicalUser" -> null
  # (1 unchanged attribute hidden)
}

~ lifecycle_rule (known after apply)

~ logging (known after apply)

~ object_lock_configuration (known after apply)

~ replication_configuration (known after apply)

~ server_side_encryption_configuration (known after apply)
- server_side_encryption_configuration {
  - rule {
    - bucket_key_enabled = false -> null

    - apply_server_side_encryption_by_default {
      - sse_algorithm = "AES256" -> null
      # (1 unchanged attribute hidden)
    }
  }
}

~ versioning (known after apply)
- versioning {
  - enabled = false -> null
  - mfa_delete = false -> null
}

```

```
}  
  
~ website (known after apply)  
}
```

Plan: 3 to add, 0 to change, 2 to destroy.

```
module.payroll_europe.aws_s3_bucket.payroll_docs: Destroying...  
[id=my-terraform-state-bucket-payroll-eu-west-2-vijaya]  
module.payroll_europe.aws_dynamodb_table.payroll_db: Destroying...  
[id=PayrollDB-eu-west-2-vijaya]  
module.payroll_europe.aws_instance.payroll_server: Creating...  
module.payroll_europe.aws_s3_bucket.payroll_docs: Destruction complete after 1s  
module.payroll_europe.aws_s3_bucket.payroll_docs: Creating...  
module.payroll_europe.aws_s3_bucket.payroll_docs: Creation complete after 1s  
[id=my-terraform-state-bucket-payroll-eu-central-1-vijaya]  
module.payroll_europe.aws_instance.payroll_server: Still creating... [00m09s elapsed]  
module.payroll_europe.aws_dynamodb_table.payroll_db: Still destroying...  
[id=PayrollDB-eu-west-2-vijaya, 00m09s elapsed]  
module.payroll_europe.aws_dynamodb_table.payroll_db: Destruction complete after 12s  
module.payroll_europe.aws_dynamodb_table.payroll_db: Creating...  
module.payroll_europe.aws_instance.payroll_server: Still creating... [00m18s elapsed]  
module.payroll_europe.aws_dynamodb_table.payroll_db: Still creating... [00m09s elapsed]  
module.payroll_europe.aws_dynamodb_table.payroll_db: Creation complete after 11s  
[id=PayrollDB-eu-central-1-vijaya]  
module.payroll_europe.aws_instance.payroll_server: Still creating... [00m28s elapsed]  
module.payroll_europe.aws_instance.payroll_server: Creation complete after 30s  
[id=i-08a66b97a266fea5b]
```

Apply complete! Resources: 3 added, 0 changed, 2 destroyed.

vijayagagla@DESKTOP-FP4OP26:~/terra\_course/terraform\$ terraform state list

```
module.payroll.aws_dynamodb_table.payroll_db  
module.payroll.aws_instance.payroll_server  
module.payroll.aws_s3_bucket.payroll_docs  
module.payroll_europe.aws_dynamodb_table.payroll_db  
module.payroll_europe.aws_instance.payroll_server  
module.payroll_europe.aws_s3_bucket.payroll_docs  
vijayagagla@DESKTOP-FP4OP26:~/terra_course/terraform$
```

## Region- Europe(Ireland) - eu-west-1

The screenshot displays the AWS Management Console interface for the eu-west-1 region. The left-hand navigation pane shows the 'EC2' service selected, with a sub-menu for 'Instances'. The main content area is titled 'Instance summary for i-0961cae5ad4a872d7 (Payroll-Server)'. It provides a comprehensive overview of the instance's configuration and status. Key details include the Instance ID, Public IPv4 address (54.77.212.64), Instance state (Running), Hostname type, Answer private resource DNS name, Auto-assigned IP address, IAM role, IMDSv2 status, Operator, VPC ID, Subnet ID, Instance ARN, Private IP DNS name, Private IPv4 addresses, Public DNS, Elastic IP addresses, AWS Compute Optimizer finding, Auto Scaling Group name, and Managed status.

**Instance summary for i-0961cae5ad4a872d7 (Payroll-Server)**

Updated less than a minute ago

**Instance ID**  
i-0961cae5ad4a872d7

**IPv6 address**  
-

**Public IPv4 address**  
54.77.212.64 | [open address](#)

**Instance state**  
Running

**Private IPv4 addresses**  
172.31.46.12

**Public DNS**  
ec2-54-77-212-64.eu-west-1.compute.amazonaws.com | [open address](#)

**Hostname type**  
IP name: ip-172-31-46-12.eu-west-1.compute.internal

**Private IP DNS name (IPv4 only)**  
ip-172-31-46-12.eu-west-1.compute.internal

**Answer private resource DNS name**  
-

**Auto-assigned IP address**  
54.77.212.64 [Public IP]

**Elastic IP addresses**  
-

**IAM role**  
-

**Subnet ID**  
subnet-0d9b489c27e18f759

**IMDSv2**  
Required

**Instance type**  
t2.micro

**VPC ID**  
vpc-0df92408ce1504f65

**Instance ARN**  
arn:aws:ec2:eu-west-1:686699774218:instance/i-0961cae5ad4a872d7

**Managed**  
false

**AWS Compute Optimizer finding**  
Opt-in to AWS Compute Optimizer for recommendations. | [Learn more](#)

**Auto Scaling Group name**  
-

The screenshot displays the AWS Management Console interface for the Amazon S3 service. The left-hand navigation pane shows the 'Amazon S3' service selected, with a sub-menu for 'Buckets'. The main content area is titled 'my-terraform-state-bucket-payroll-vijaya'. It provides a comprehensive overview of the bucket's configuration and status. Key details include the bucket name, bucket type, bucket policy, bucket logging, bucket versioning, bucket encryption, bucket tagging, bucket access control, bucket metrics, bucket management, and bucket access points. The 'Objects' tab is selected, showing a list of objects in the bucket. The list is currently empty, with a message stating 'No objects. You don't have any objects in this bucket.' and an 'Upload' button.

**my-terraform-state-bucket-payroll-vijaya**

**Objects (0)**

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

**Find objects by prefix**

**No objects**  
You don't have any objects in this bucket.

[Upload](#)

aws Search [Alt+S]

Europe (Ireland) Account ID: 6866-9977-4218 vijayagala

DynamoDB > Tables > PayrollDB-vijaya

**DynamoDB**

- Dashboard
- Tables
- Explore items
- PartiQL editor
- Backups
- Exports to S3
- Imports from S3
- Integrations
- Reserved capacity
- Settings

▼ DAX

- Clusters
- Subnet groups
- Parameter groups
- Events

**Tables (10)**

Filter by tag: Any tag key

Filter by tag value: Any tag value

Find tables

- DynamoDB-terraform-locks-chinmayee
- payroll-db-chinmayee-eu
- PayrollDB
- PayrollDB-EU-Dilivio
- PayrollDB-EU-Max
- PayrollDB-EU-saja

**PayrollDB-vijaya**

Last updated: January 27, 2026, 15:23 (UTC+1:00)

Settings | Indexes | Monitor | Global tables | Backups | Exports and streams | Permissions

Protect your DynamoDB table from accidental writes and deletes. When you turn on point-in-time recovery (PITR), DynamoDB backs up your table data automatically so that you can restore to any given second in the preceding 1 to 35 days. Additional charges apply. [Learn more](#)

Get live item count

**General information**

<b>Partition key</b> EmployeeID (String)	<b>Sort key</b> -	<b>Capacity mode</b> On-demand	<b>Table status</b> Active
<b>Alarms</b> No active alarms	<b>Point-in-time recovery (PITR)</b> Off	<b>Item count</b> 0	<b>Table size</b> 0 bytes
<b>Average item size</b> 0 bytes	<b>Resource-based policy</b> Not active		

**Amazon Resource Name (ARN)**  
arn:aws:dynamodb:eu-west-1:686699774218:table/PayrollDB-vijaya

## Region- Europe(Frankfurt) - eu-central-1

aws Search [Alt+S]

Europe (Frankfurt) Ironhack AWS for Education (6866-9977-4218) vijayagala

EC2 > Instances > i-08a66b97a266fea5b

**EC2**

- Dashboard
- AWS Global View
- Events

▼ Instances

- Instances
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts
- Capacity Reservations
- Capacity Manager

▼ Images

- AMIs
- AMI Catalog

▼ Elastic Block Store

**Instance summary for i-08a66b97a266fea5b (Payroll-Server)**

Updated less than a minute ago

<b>Instance ID</b> i-08a66b97a266fea5b	<b>Public IPv4 address</b> 35.159.23.92   open address	<b>Private IPv4 addresses</b> 172.31.32.43
<b>IPv6 address</b> -	<b>Instance state</b> Running	<b>Public DNS</b> ec2-35-159-23-92.eu-central-1.compute.amazonaws.com   open address
<b>Hostname type</b> IP name: ip-172-31-32-43.eu-central-1.compute.internal	<b>Private IP DNS name (IPv4 only)</b> ip-172-31-32-43.eu-central-1.compute.internal	<b>Elastic IP addresses</b> -
<b>Answer private resource DNS name</b> -	<b>Instance type</b> t2.micro	<b>AWS Compute Optimizer finding</b> Opt-in to AWS Compute Optimizer for recommendations.   Learn more
<b>Auto-assigned IP address</b> 35.159.23.92 [Public IP]	<b>VPC ID</b> vpc-0fee5b5c96aca16b3	<b>Auto Scaling Group name</b> -
<b>IAM role</b> -	<b>Subnet ID</b> subnet-02523a522f2712083	<b>Managed</b> false
<b>IMDSv2</b> Required	<b>Instance ARN</b> arn:aws:ec2:eu-central-1:686699774218:instance/i-08a66b97a266fea5b	

aws

Search

[Alt+S]

Europe (Frankfurt)

Account ID: 6866-9977-4218

vijayagaglia

Amazon S3

Buckets

my-terraform-state-bucket-payroll-eu-central-1-vijaya

Amazon S3

Buckets

my-terraform-state-bucket-payroll-eu-central-1-vijaya

info

Objects

Metadata

Properties

Permissions

Metrics

Management

Access Points

Objects (0)

Copy S3 URI

Copy URL

Download

Open

Delete

Actions

Create folder

Upload

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix

Name

Type

Last modified

Size

Storage class

No objects

You don't have any objects in this bucket.

Upload

aws

Search

[Alt+S]

Europe (Frankfurt)

Account ID: 6866-9977-4218

vijayagaglia

DynamoDB

Explore items

PayrollDB-eu-central-1-vijaya

DynamoDB

Explore items

PayrollDB-eu-central-1-vijaya

Autopreview

View table details

Tables (7)

Filter by tag

Any tag key

Filter by tag value

Any tag value

Find tables

PayrollDB-eu-central-1-vijaya

rimo-payroll-db-1

rimo-payroll-db-2

rimo-terraform-state-lock

terraform-state-lock-fotos

terraform-state-lock

PayrollDB-eu-central-1-vijaya

Scan or query items

Scan

Query

Select a table or index

Table - PayrollDB-eu-central-1-vijaya

Select attribute projection

All attributes

Filters - optional

Attribute name

Condition

Type

Value

Enter attribute

Equal to

String

Enter attribute val

Remove

Add filter

Run

Reset

Completed - Items returned: 0 - Items scanned: 0 - Efficiency: 100% - RCUs consumed: 2

CloudShell Feedback Console Mobile App

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