Terraform Module: EC2 Auto Scaling Group Target

This module creates the necessary AWS resources to run a scalable web application behind an Application Load Balancer (ALB). It links an ALB Target Group with an Auto Scaling Group (ASG) of EC2 instances.

Key features include: * An ALB Target Group with configurable health checks. * A dedicated Security Group for the EC2 instances that allows traffic only from the ALB. * An Auto Scaling Group that uses a specified EC2 Launch Template to launch instances across multiple private subnets. * Optional, configurable CPU-based step scaling policies and CloudWatch alarms to automatically scale the number of instances based on load. * Optional creation of an ALB Listener Rule to route traffic to the target group based on conditions like host headers or path patterns.

Usage

```
module "ec2_asg_target" {
  source = "./modules/ec2_asg_target"

  app_name                      = "my-api"
  target_environment            = "dev"
  vpc_id                        = "vpc-0123456789abcdef0"
  subnet_ids                    = ["subnet-0123...", "subnet-4567..."]
  alb_source_security_group_id = "sg-0fedcba9876543210"
  launch_template_id            = "lt-0abcdef1234567890"

  desired_capacity = 2
  min_size         = 1
  max_size         = 10

  # Optionally create a listener rule
  alb_listener_arn         = "arn:aws:elasticloadbalancing:..."
  listener_rule_priority   = 100
  listener_rule_path_patterns = ["/api/*"]

  # Optionally enable auto scaling
  enable_cpu_scaling_policies = true
  scale_up_cpu_threshold      = 75
  scale_down_cpu_threshold    = 25

  tags = {
    Service = "user-api"
  }
}
```

Requirements

Name	Version
terraform	>= 1.0
aws	~> 6.0

Providers

Name	Version
aws	~> 6.0

Inputs

Name	Description	Type	Default	Required
app_name	A unique name for the web application (e.g., 'my-webapp').	string	n/a	yes
target_environment	The target environment (e.g., 'dev', 'test', 'prod').	string	n/a	yes
vpc_id	The ID of the VPC where resources will be deployed.	string	n/a	yes
subnet_ids	A list of private subnet IDs for the ASG. Must provide at least two.	list(string)	n/a	yes
alb_source_security_group_id	The ID of the ALB's security group to allow traffic from.	string	n/a	yes
launch_template_id	The ID of the EC2 Launch Template to use for the ASG.	string	n/a	yes
launch_template_version	The version of the Launch Template to use.	string	"$Latest"	no
desired_capacity	The desired number of instances in the ASG.	number	1	no
min_size	The minimum number of instances in the ASG.	number	1	no
max_size	The maximum number of instances in the ASG.	number	2	no
target_group_port	The port on which instances receive traffic.	number	80	no
health_check_path	The path for the health check request.	string	"/"	no
alb_listener_arn	The ARN of the ALB listener to attach a rule to. Required if creating a rule.	string	null	no
listener_rule_priority	The priority for the listener rule (1-50000). Required if creating a rule.	number	null	no
listener_rule_path_patterns	A list of path patterns to match for the listener rule.	list(string)	[]	no
enable_cpu_scaling_policies	Set to true to create CPU-based step scaling policies.	bool	false	no
scale_up_cpu_threshold	The average CPU utilization that triggers a scale-up event.	number	70	no
scale_down_cpu_threshold	The average CPU utilization that triggers a scale-down event.	number	30	no
tags	A map of tags to assign to all resources.	map(string)	{}	no

Outputs

Name	Description
target_group_arn	The ARN of the created ALB Target Group.
autoscaling_group_name	The name of the created Auto Scaling Group.
ec2_target_security_group_id	The ID of the security group created for the EC2 instances.
listener_rule_arn	The ARN of the created ALB Listener Rule, if created.
scale_up_policy_arn	The ARN of the scale-up Auto Scaling policy, if created.
scale_down_policy_arn	The ARN of the scale-down Auto Scaling policy, if created.