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resource "aws_lb" "wikijs" {
  name          = "wikijs-alb"
  load_balancer_type = "application"
  subnets       = module.vpc.public_subnets
  security_groups = [aws_security_group.alb_sg.id]

  tags = merge(local.common_tags, {
    Name = "wikijs-alb"
  })
}

resource "aws_lb_target_group" "wikijs" {
  name          = "wikijs-tg"
  port          = 3000
  protocol      = "HTTP"
  vpc_id        = module.vpc.vpc_id
  target_type   = "ip"

  health_check {
    path          = "/"
    protocol      = "HTTP"
    matcher       = "200-399"
    interval      = 30
    timeout       = 5
    healthy_threshold = 2
    unhealthy_threshold = 2
  }

  tags = merge(local.common_tags, {
    Name = "wikijs-tg"
  })
}

resource "aws_lb_listener" "http" {
  load_balancer_arn = aws_lb.wikijs.arn
  port            = 80
  protocol        = "HTTP"

  default_action {
    type          = "forward"
    target_group_arn = aws_lb_target_group.wikijs.arn
  }

  tags = merge(local.common_tags, {
    Name = "wikijs-http-listener"
  })
}

resource "aws_cloudwatch_log_group" "wikijs" {
  name          = "/ecs/wikijs"
  retention_in_days = 14

  tags = {
    Name          = "wikijs-log-group"
    Project       = "WikiJS"
    Environment   = "Assessment"
  }
}#####
# Task Definition
#####
resource "aws_ecs_task_definition" "wikijs" {
  family          = "wikijs-task"
  network_mode    = "awsvpc"
  requires_compatibility = ["FARGATE"]
  cpu             = "256" # .25 vCPU
  memory          = "512" # 0.5 GB
  execution_role_arn = "arn:aws:iam::643218715566:role/WikijsTaskExecutionRole"
  task_role_arn    = aws_iam_role.ecs_task_role.arn
}

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container_definitions = jsonencode([
  {
    name      = "wikijs"
    image     = "643218715566.dkr.ecr.eu-west-1.amazonaws.com/wiki:2.5.312"
    essential = true
    portMappings = [
      {
        containerPort = 3000
        hostPort      = 3000
        protocol      = "tcp"
      }
    ]
    environment = [
      {
        name   = "WIKIJS_ENV_FILE"
        value  = "s3://wikijs-conf/wikijs.env"
      }
    ]
    logConfiguration = {
      logDriver = "awslogs"
      options = {
        "awslogs-group"      = "/ecs/wikijs"
        "awslogs-region"     = "eu-west-1"
        "awslogs-stream-prefix" = "wikijs"
      }
    }
  }
])
#####
# ECS Cluster (Container Insights Disabled)
#####
resource "aws_ecs_cluster" "wikijs" {
  name = "wikijs-cluster"

  tags = {
    Name      = "wikijs-cluster"
    Project   = "WikiJS"
    Environment = "Assessment"
  }
}
#####
# ECS Service
#####
resource "aws_ecs_service" "wikijs" {
  name           = "wikijs-service"
  cluster        = aws_ecs_cluster.wikijs.name
  task_definition = aws_ecs_task_definition.wikijs.arn
  desired_count  = 1
  launch_type    = "FARGATE"

  network_configuration {
    subnets      = module.vpc.private_subnets
    security_groups = [aws_security_group.ecs_sg.id]
    assign_public_ip = false
  }

  load_balancer {
    target_group_arn = aws_lb_target_group.wikijs.arn
    container_name   = "wikijs"
    container_port   = 3000
  }

  deployment_minimum_healthy_percent = 50
  deployment_maximum_percent         = 200
}

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depends_on = [
    aws_lb_listener.http
]

tags = merge(local.common_tags, {
    Name = "wikijs-service"
})
}#####
# IAM Role - Task Execution Role
#####

resource "aws_iam_role" "ecs_task_execution_role" {
    name = "wikijs-ecs-task-execution-role"

    assume_role_policy = jsonencode({
        Version = "2012-10-17"
        Statement = [{
            Effect = "Allow"
            Principal = {
                Service = "ecs-tasks.amazonaws.com"
            }
            Action = "sts:AssumeRole"
        }]
    })
    tags = {
        Name      = "wikijs-ecs-task-execution-role"
        Project   = "WikiJS"
        Environment = "Assessment"
    }
}

resource "aws_iam_role_policy_attachment" "ecs_execution_policy" {
    role      = aws_iam_role.ecs_task_execution_role.name
    policy_arn = "arn:aws:iam::aws:policy/service-role/AmazonECSTaskExecutionRolePolicy"
}

#####
# ECS Task Role for S3 access
#####

resource "aws_iam_role" "ecs_task_role" {
    name = "wikijs-ecs-task-role"

    assume_role_policy = jsonencode({
        Version = "2012-10-17",
        Statement = [
            {
                Action      = "sts:AssumeRole",
                Effect     = "Allow",
                Principal  = {
                    Service = "ecs-tasks.amazonaws.com"
                }
            }
        ]
    })
    tags = {
        Name      = "wikijs-ecs-task-role"
        Project   = "WikiJS"
        Environment = "Assessment"
        ManagedBy = "Terraform"
    }
}

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# Policy to allow ECS tasks to read the S3 .env file
resource "aws_iam_role_policy" "ecs_s3_access" {
  name = "ecs-s3-read-wikijs-env"
  role = aws_iam_role.ecs_task_role.id

  policy = jsonencode({
    Version = "2012-10-17",
    Statement = [
      {
        Effect  = "Allow",
        Action   = ["s3:GetObject"],
        Resource = "arn:aws:s3:::wikijs-conf/wikijs.env"
      }
    ]
  })
}

locals {
  common_tags = {
    Project      = "WikiJS"
    Environment  = "Assessment"
    ManagedBy   = "Terraform"
  }
}

terraform {
  required_providers {
    aws = {
      source  = "hashicorp/aws"
      version = "~> 6.0"
    }
  }
}

provider "aws" {
  region = "eu-west-1"
}

#####
# ALB Security Group
#####
resource "aws_security_group" "alb_sg" {
  name          = "wikijs-alb-sg"
  description   = "Application Load Balancer"
  vpc_id        = module.vpc.vpc_id

  tags = merge(local.common_tags, {
    Name      = "wikijs-alb-sg"
  })
}

# Ingress (from Internet)
resource "aws_vpc_security_group_ingress_rule" "alb_http" {
  security_group_id = aws_security_group.alb_sg.id
  cidr_ipv4        = "0.0.0.0/0"
  ip_protocol      = "tcp"
  from_port        = 80
  to_port          = 80
  description      = "HTTP from Internet"
}

resource "aws_vpc_security_group_ingress_rule" "alb_https" {
  security_group_id = aws_security_group.alb_sg.id
  cidr_ipv4        = "0.0.0.0/0"
  ip_protocol      = "tcp"
  from_port        = 443
  to_port          = 443
  description      = "HTTPS from Internet"
}

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# Egress
resource "aws_vpc_security_group_egress_rule" "alb_to_ecs" {
  security_group_id      = aws_security_group.alb_sg.id
  ip_protocol            = "tcp"
  from_port              = 3000
  to_port                = 3000
  referenced_security_group_id = aws_security_group.ecs_sg.id
  description             = "ALB can reach ECS tasks"
}

#resource "aws_vpc_security_group_egress_rule" "alb_egress_general" {
#  security_group_id = aws_security_group.alb_sg.id
#  ip_protocol       = "tcp"
#  from_port          = 0
#  to_port            = 0
#  cidr_ipv4         = "0.0.0.0/0"
#  description        = "ALB general outbound"
#}

#####
# ECS Security Group
#####
resource "aws_security_group" "ecs_sg" {
  name      = "wikijs-ecs-sg"
  description = "ECS tasks"
  vpc_id    = module.vpc.vpc_id

  tags = merge(local.common_tags, {
    Name      = "wikijs-ecs-sg"
  })
}

# Ingress (from ALB)
resource "aws_vpc_security_group_ingress_rule" "ecs_from_alb" {
  security_group_id      = aws_security_group.ecs_sg.id
  ip_protocol            = "tcp"
  from_port              = 3000
  to_port                = 3000
  referenced_security_group_id = aws_security_group.alb_sg.id
  description             = "Allow ALB to reach ECS tasks"
}

# Egress (to DB + general)
resource "aws_vpc_security_group_egress_rule" "ecs_to_db" {
  security_group_id      = aws_security_group.ecs_sg.id
  ip_protocol            = "tcp"
  from_port              = 5432
  to_port                = 5432
  referenced_security_group_id = aws_security_group.db_sg.id
  description             = "ECS tasks can reach RDS"
}

# Egress (to vpc endpoints)
resource "aws_vpc_security_group_egress_rule" "ecs_to_vpce" {
  security_group_id = aws_security_group.ecs_sg.id
  ip_protocol       = "tcp"
  from_port          = 443
  to_port            = 443
  referenced_security_group_id = aws_security_group.vpce.id
  #cidr_ipv4         = "0.0.0.0/0"
  description        = "ECS general outbound traffic"
}

#####
# RDS Security Group
#####

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resource "aws_security_group" "db_sg" {
  name      = "wikijs-db-sg"
  description = "RDS PostgreSQL"
  vpc_id    = module.vpc.vpc_id

  tags = merge(local.common_tags, {
    Name      = "wikijs-db-sg"
  })
}

# Ingress (from ECS)
resource "aws_vpc_security_group_ingress_rule" "db_from_ecs" {
  security_group_id      = aws_security_group.db_sg.id
  ip_protocol            = "tcp"
  from_port              = 5432
  to_port                = 5432
  referenced_security_group_id = aws_security_group.ecs_sg.id
  description             = "Allow ECS tasks to connect"
}

# Egress (general)
resource "aws_vpc_security_group_egress_rule" "db_egress" {
  security_group_id = aws_security_group.db_sg.id
  ip_protocol       = "tcp"
  from_port         = 0
  to_port           = 0
  referenced_security_group_id = aws_security_group.ecs_sg.id
  #cidr_ipv4        = "0.0.0.0/0"
  description        = "RDS outbound traffic"
}

variable "region" {
  type     = string
  description = "Default region"
  default   = "eu-west-1"
}

variable "db_username" {
  type     = string
  description = "Database admin username"
  default   = "postgres"
}

variable "db_password" {
  type     = string
  description = "Database admin password"
  sensitive = true
  default   = ""
}#####
# Interface VPC Endpoints Security Group
#####
resource "aws_security_group" "vpce" {
  name      = "wikijs-vpce-sg"
  description = "Allow ECS to access VPC interface endpoints"
  vpc_id    = module.vpc.vpc_id

  tags = merge(local.common_tags, {
    Name = "wikijs-vpce-sg"
  })
}

# Ingress (from ecs)
resource "aws_vpc_security_group_ingress_rule" "vpce_from_ecs" {
  security_group_id      = aws_security_group.vpce.id
  #referenced_security_group_id = aws_security_group.ecs_sg.id
  ip_protocol            = "tcp"
  from_port              = 443
}

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        to_port          = 443
        cidr_ipv4       = "10.0.0.0/16"
        description      = "Allow ECS tasks to access interface endpoints"
    }

# Egress (to ecs)
resource "aws_vpc_security_group_egress_rule" "vpce_egress" {
    security_group_id = aws_security_group.vpce.id
    ip_protocol       = "tcp"
    from_port         = 443
    to_port           = 443
    #referenced_security_group_id = aws_security_group.ecs_sg.id
    cidr_ipv4         = "10.0.0.0/16"
    description        = "Endpoint outbound"
}

#####
# Interface VPC Endpoints
#####
resource "aws_vpc_endpoint" "ecr_api" {
    vpc_id            = module.vpc.vpc_id
    service_name      = "com.amazonaws.${var.region}.ecr.api"
    vpc_endpoint_type = "Interface"
    subnet_ids        = module.vpc.private_subnets
    security_group_ids = [aws_security_group.vpce.id]
    private_dns_enabled = true

    tags = merge(local.common_tags, {
        Name = "wikijs-ecr-api-endpoint"
    })
}

resource "aws_vpc_endpoint" "ecr_dkr" {
    vpc_id            = module.vpc.vpc_id
    service_name      = "com.amazonaws.${var.region}.ecr.dkr"
    vpc_endpoint_type = "Interface"
    subnet_ids        = module.vpc.private_subnets
    security_group_ids = [aws_security_group.vpce.id]
    private_dns_enabled = true

    tags = merge(local.common_tags, {
        Name = "wikijs-ecr-dkr-endpoint"
    })
}

resource "aws_vpc_endpoint" "logs" {
    vpc_id            = module.vpc.vpc_id
    service_name      = "com.amazonaws.${var.region}.logs"
    vpc_endpoint_type = "Interface"
    subnet_ids        = module.vpc.private_subnets
    security_group_ids = [aws_security_group.vpce.id]
    private_dns_enabled = true

    tags = merge(local.common_tags, {
        Name = "wikijs-logs-endpoint"
    })
}

#####
# Gateway VPC Endpoint
#####

resource "aws_vpc_endpoint" "s3" {
    vpc_id            = module.vpc.vpc_id
    service_name      = "com.amazonaws.${var.region}.s3"
    vpc_endpoint_type = "Gateway"
}

```

```
route_table_ids  = module.vpc.private_route_table_ids
tags = merge(local.common_tags, {
    Name      = "wikijs-s3-endpoint"
})
}
module "vpc" {
  source  = "terraform-aws-modules/vpc/aws"
  version = "6.6.0"

  name = "wikijs-vpc"
  cidr = "10.0.0.0/16"

  azs = [
    "eu-west-1a",
    "eu-west-1b",
    #"eu-west-1c",
  ]

  # Public subnets
  public_subnets = [
    "10.0.1.0/24",
    "10.0.2.0/24",
    #'10.0.3.0/24",
  ]

  # Private subnets
  private_subnets = [
    "10.0.11.0/24",
    "10.0.12.0/24",
    #'10.0.13.0/24",
  ]

  create_igw        = true
  enable_nat_gateway = false
  #single_nat_gateway = true

  enable_dns_support  = true
  enable_dns_hostnames = true

  # Public subnet tags
  public_subnet_tags = {
    Name = "wikijs-public-subnet"
  }

  # Private subnet tags
  private_subnet_tags = {
    Name = "wikijs-private-subnet"
  }

  # Route table tags
  public_route_table_tags = {
    Name = "wikijs-public-rt"
  }

  private_route_table_tags = {
    Name = "wikijs-private-rt"
  }

  default_route_table_tags = {
    Name = "wikijs-default-rt"
  }

  # # NAT Gateway tag
  # nat_gateway_tags = {
  #   Name = "wikijs-nat-gw"
  # }
```

```
#  
# Internet Gateway tag  
igw_tags = {  
    Name = "wikijs-igw"  
}  
  
# General VPC tags  
tags = merge(local.common_tags, {  
    Name      = "wikijs-vpc"  
})  
}
```