

To debug and fix common Terraform issues, start by ensuring your provider configuration is correct. Avoid hardcoding AWS credentials in your Terraform files; instead, use environment variables or an AWS profile.

For example, instead of specifying `access_key` and `secret_key` in the provider block, configure AWS CLI with `'aws configure'` or use IAM roles.

If Terraform fails due to an invalid security group rule, such as an incorrect CIDR block (e.g., `256.256.256.256/32`), correct it by using valid IP ranges like `0.0.0.0/0` only when necessary.

When facing missing IAM permissions errors, such as `'iam:CreateRole'` access being denied, ensure your Terraform user or role has the appropriate IAM policies. Grant `'AdministratorAccess'` or attach a policy that allows `'iam:CreateRole'`, `'iam:AttachRolePolicy'`, and `'iam:PassRole'` actions.

To debug further, run `'terraform init'` to check provider configurations, `'terraform validate'` to detect syntax issues, and `'terraform plan'` to preview changes. If issues persist, check AWS CloudTrail logs for permission failures or use `'TF_LOG=DEBUG terraform apply'` for detailed logs. Following these steps will help you quickly diagnose and fix Terraform misconfigurations.