Terraform Debugging Log – Outputs.tf Errors

Problem:
While applying Terraform with terraform plan -out=tfplan and terraform apply tfplan, multiple errors occurred related to the outputs.tf file, specifically with the object_url output. Errors included: - Argument or block definition required on the line starting with ?. - Saved plan is stale because Terraform could not generate a valid plan due to syntax errors. - Failed to load "tfplan" as a plan file because the plan file never got created after errors. - Too many command line arguments when the plan name was quoted incorrectly in some runs.

Diagnosis:
The main issue was in outputs.tf where the ternary operator (? :) was split across lines. Terraform's HCL parser treated the ? as a new block instead of part of an expression. Additionally, because the plan never succeeded, tfplan was missing, causing subsequent apply commands to fail.

Fix:
1. Corrected the object_url output block to ensure the entire ternary expression was on one line, e.g.:
value = var.aws_region == "us-east-1" ?
"https://${aws_s3_bucket.test.bucket}.s3.amazonaws.com/${aws_s3_object.seed.key}" : "https://${aws_s3_bucket.test.bucket}.s3.${var.aws_region}.amazonaws.com/${aws_s3_object.seed.key}"

2. Deleted any stale or failed plan files:
rm -f tfplan

3. Re-ran the workflow cleanly:
terraform fmt -recursive
terraform validate
terraform plan -out=tfplan
terraform apply tfplan

4. Once syntax was fixed, the plan succeeded and applied without creating or modifying resources, only refreshing state and calculating outputs.

Outcome:
- Terraform successfully validated and planned without syntax errors.
- Outputs were calculated and displayed correctly:
• bucket_name, bucket_arn, object_url, iam_user_arn, etc.
- Verified S3 access worked: Admin profile could read/write, TestUser was not yet configured (missing profile).
- The debugging process confirmed that syntax and formatting of expressions are critical in outputs.tf.

Lessons Learned:
- Keep Terraform ternary expressions (? :) on the same line or use format() for readability.
- If a plan fails, remove the broken plan file and regenerate with terraform plan -out=tfplan.
- terraform validate is your friend — always run it to catch syntax issues before planning.
- The error *"Too many command line arguments"* often means something is wrong with how you quoted arguments (e.g., unnecessary quotes around plan name).