COSMOS Project - AWS GovCloud Reference Architecture

Overview

The COSMOS Project is a fully reproducible, multi-VPC AWS GovCloud reference architecture built with CloudFormation. It mirrors infrastructure patterns aligned with SBS and Navy mission application environments.

Architecture Summary

- 3 VPCs: Dev (10.0.0.0/16), Shared Services (10.10.0.0/16), Prod (10.20.0.0/16)

- Centralized AWS Transit Gateway (TGW): tgw-082e28f65a5016d0e

- Shared TGW Route Table: tgw-rtb-00995db6cb853e946

- Optional On-Premise (simulated via Direct Connect)

CloudFormation Stack Files

- vpc-dev.yaml, vpc-shared.yaml, vpc-prod.yaml - Create segmented VPCs

- tgw-create.yaml - Creates the TGW

- tgw-attach-[env].yaml - Attaches VPC to TGW

- tgw-route-attach-[env].yaml - Propagates VPC to central TGW Route Table

Deployment Order

1. Deploy VPCs (Dev, Shared, Prod)

2. Deploy the Transit Gateway

3. Attach each VPC to TGW

4. Apply TGW route table propagation for each

Optional: Run ./deploy.sh to automate steps 1-4

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Results

- Successfully deployed and tested Dev, Shared, and Prod environments

- TGW fully routes traffic through one shared TGW Route Table

- All deployments executed via clean, modular CloudFormation stacks

- Architecture diagram embedded and visually aligned with deployed infra

GitHub Repo

https://github.com/serversorcerer/aws-govcloud-cosmos-project