

# Confluent Cloud Infrastructure as Code (IaC) Cluster Linking with PrivateLink Demo

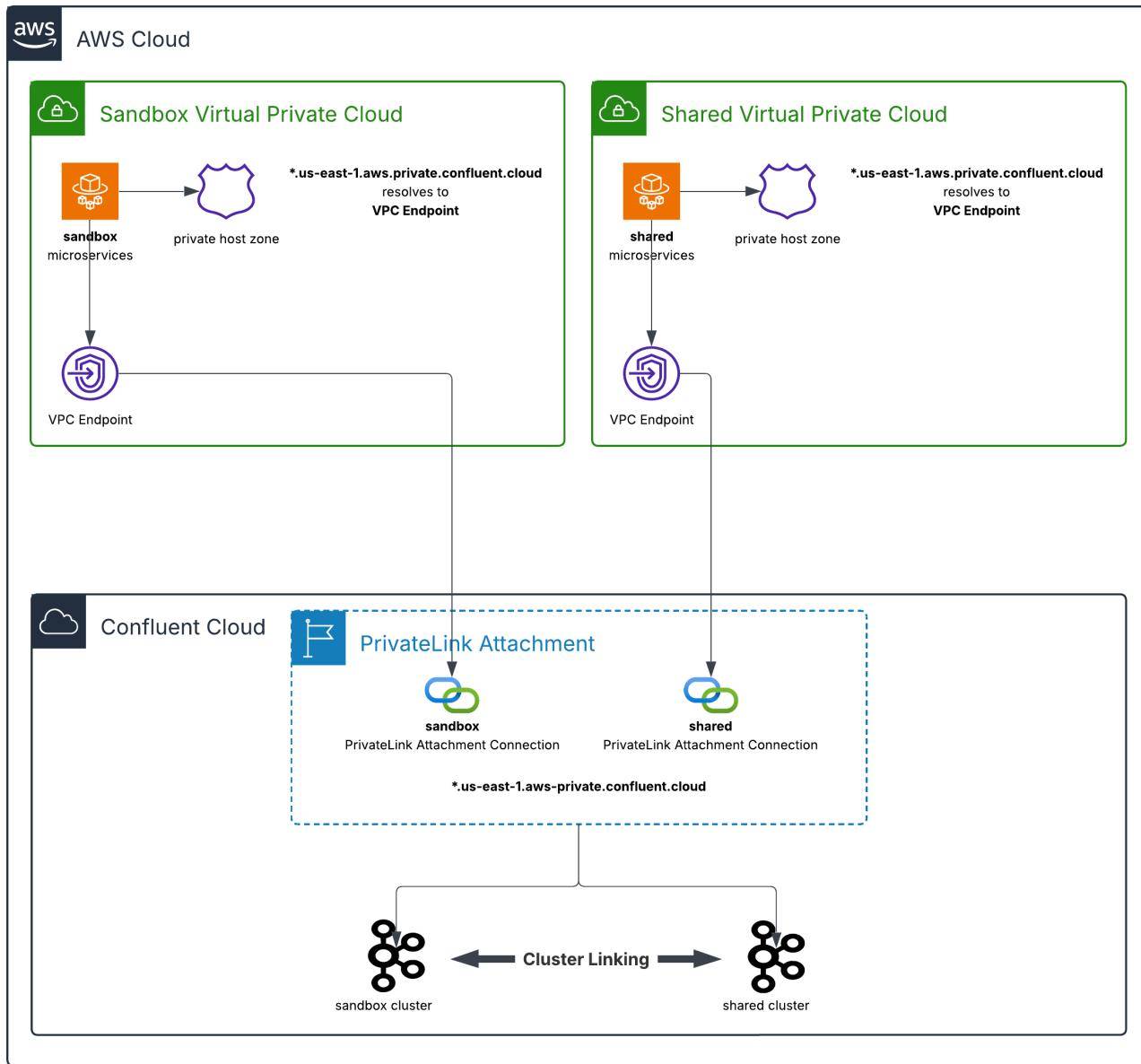
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This repository provides **production-grade Terraform infrastructure-as-code** that implements a **secure, multi-network Confluent Cloud architecture**. It demonstrates **AWS PrivateLink connectivity from a single Confluent Cloud environment to multiple AWS VPCs**, enabling private, network-isolated access without exposing traffic to the public internet.

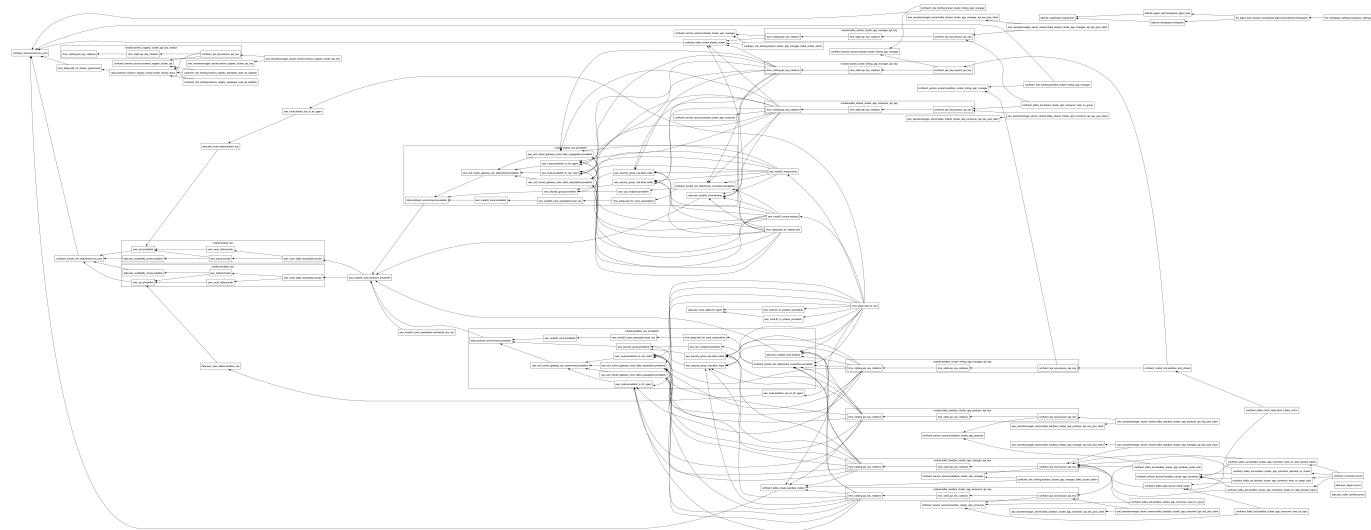
The solution also showcases **in-region Cluster Linking between two Confluent Cloud Kafka clusters**, enabling **low-latency, fully managed data replication** across teams, lines of business, or isolated environments (for example, development, staging, and production) within the same AWS region.

Cluster Linking maintains an **in-sync mirror of selected topics** on the consuming cluster. This isolation allows consuming teams to independently scale **large numbers of consumers, stream processing applications, and downstream sinks** without impacting the producing cluster. From the producer's perspective, the load is equivalent to **a single additional consumer**, regardless of downstream scale.

Access control and ownership remain cleanly separated: the producing team grants **scoped read credentials** to approved topics, while the consuming team **creates, owns, monitors, and manages the cluster link**. This pattern enables secure, scalable data sharing with clear operational boundaries and minimal coupling.



Below is the Terraform resource visualization of the infrastructure that's created:



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## 1.0 Resources

### 1.1 Terminology

- **PHZ:** Private Hosted Zone - AWS Route 53 Private Hosted Zone is a DNS service that allows you to create and manage private DNS zones within your VPCs.
- **TFC:** Terraform Cloud - A service that provides infrastructure automation using Terraform.
- **VPC:** Virtual Private Cloud - A virtual network dedicated to your AWS account.
- **AWS:** Amazon Web Services - A comprehensive cloud computing platform provided by Amazon.
- **CC:** Confluent Cloud - A fully managed event streaming platform based on Apache Kafka.
- **PL:** PrivateLink - An AWS service that enables private connectivity between VPCs and services.
- **IaC:** Infrastructure as Code - The practice of managing and provisioning computing infrastructure through machine-readable definition files.

### 1.2 Related Documentation

- [AWS PrivateLink Overview in Confluent Cloud](#)
- [Use AWS PrivateLink for Serverless Products on Confluent Cloud](#)
- [GitHub Sample Project for Confluent Terraform Provider PrivateLink Attachment](#)
- [Geo-replication with Cluster Linking on Confluent Cloud](#)
- [Use the Confluent Cloud Console with Private Networking](#)

This command can be used to verify that the appropriate routes have been added to the Terraform Cloud Agent VPC route tables:

```
(echo -e "RouteTableId\tDestination\tGateway\tTransitGateway\tState"; \  
aws ec2 describe-route-tables \  
--filters "Name=vpc-id,Values=<TFC_AGENT_VPC_ID>" \  
--output json | jq -r '.RouteTables[] | . as $rt | .Routes[] | \  
[$rt.RouteTableId, .DestinationCidrBlock, .GatewayId, .TransitGatewayId, \  
.State] | @tsv') | \  
column -t -s '$\t'
```