Automating Multicloud Networks with Pureport and Ansible

Presenters

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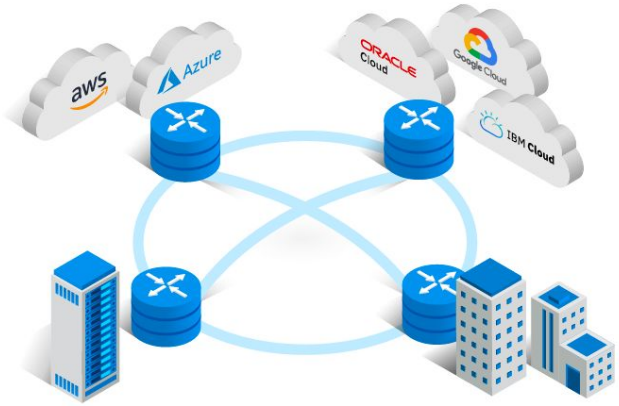
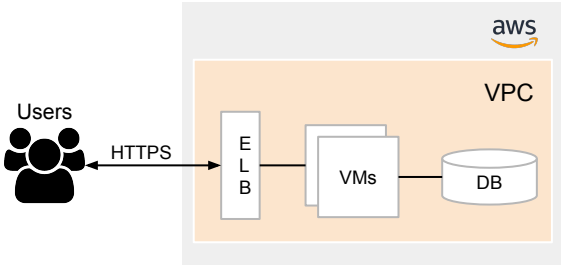
Pureport Background

- Multicloud/multi-site software defined networking platform focused on private connectivity to the public clouds
- Founded in 2018
- Executive team led two Triangle startup success stories - ***Hosted Solutions*** and ***Digitalsmiths/Tivo***
- ***US Patent for multicloud software defined networking***
- Platform launched Q1 2019
- Growing Ecosystem
  - AWS Advanced Technology Partner, Direct Connect Partner
  - Google Cloud Interconnect Partner
  - Azure ExpressRoute Partner
  - Red Hat Technology Partner, Ansible Partner
  - HashiCorp – Terraform Partner
- DevOps/Developer focused networking platform

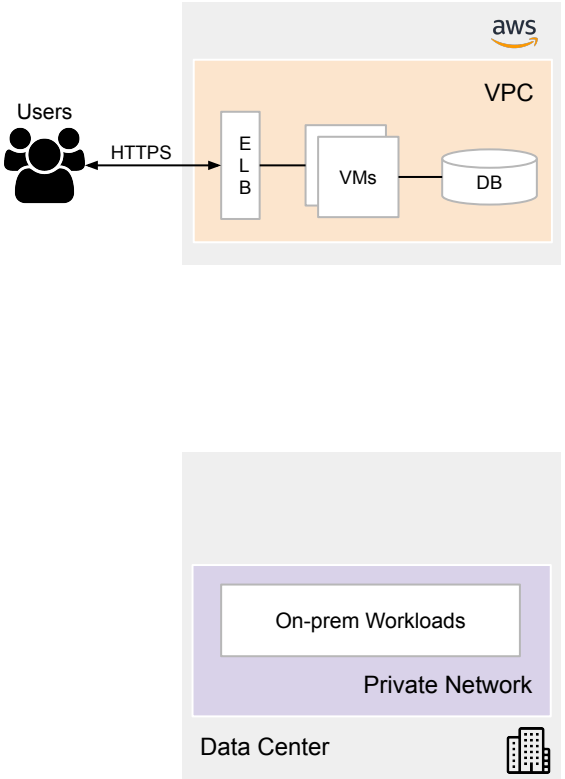


Cloud Networking: Single Cloud



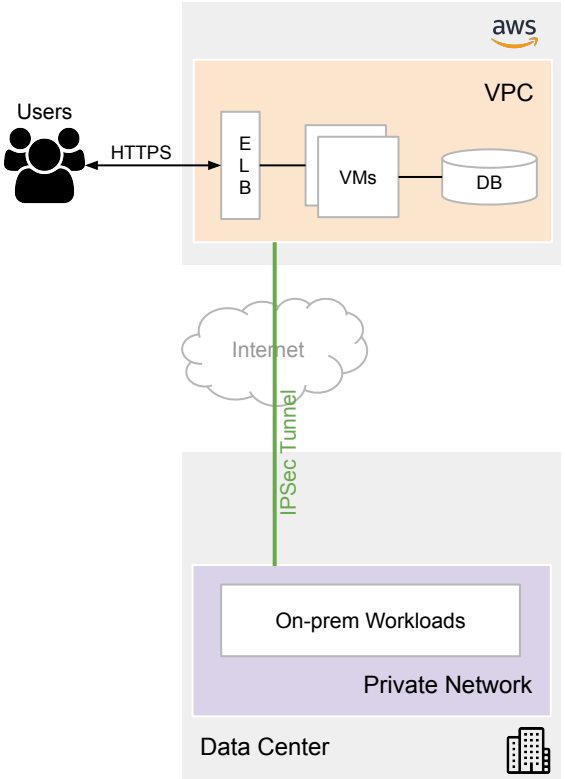
- Everything in a single cloud.
- No external dependencies
- Users access application via the public internet.
- Native cloud networking
  - VPCs
  - Security groups
  - DNS
  - Load balancers
- Maybe establish VPN to cloud for management purposes.

Cloud Networking: Hybrid Cloud



- Workload split across public cloud and private, on-prem network.
- How do we securely connect these 2 environments?
  - TLS / REST APIs

Cloud Networking: Hybrid Cloud



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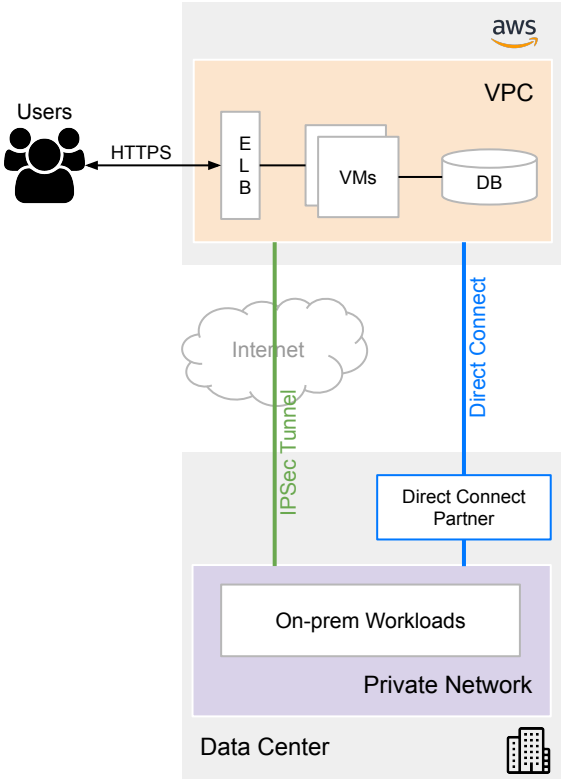
  - TLS / REST APIs
  - **IPSec Tunnel over the public internet**

Cloud Networking: Hybrid Cloud

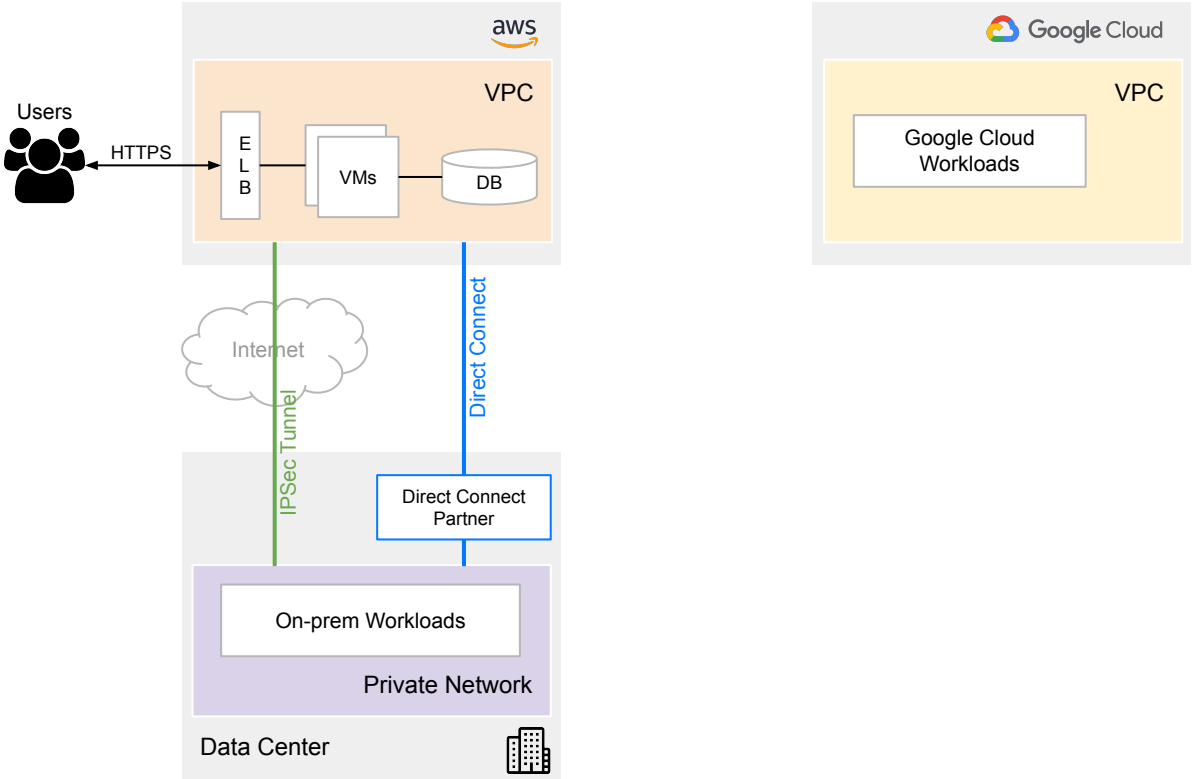


- Workload split across public cloud and private, on-prem network.
- How do we securely connect these 2 environments?
  - TLS / REST APIs
  - IPSec Tunnel over the public internet
  - **Private Connection**
- Private Connections are facilitated by a partner.
- Come in two flavors: hosted and dedicated.

Benefits of Private Connections

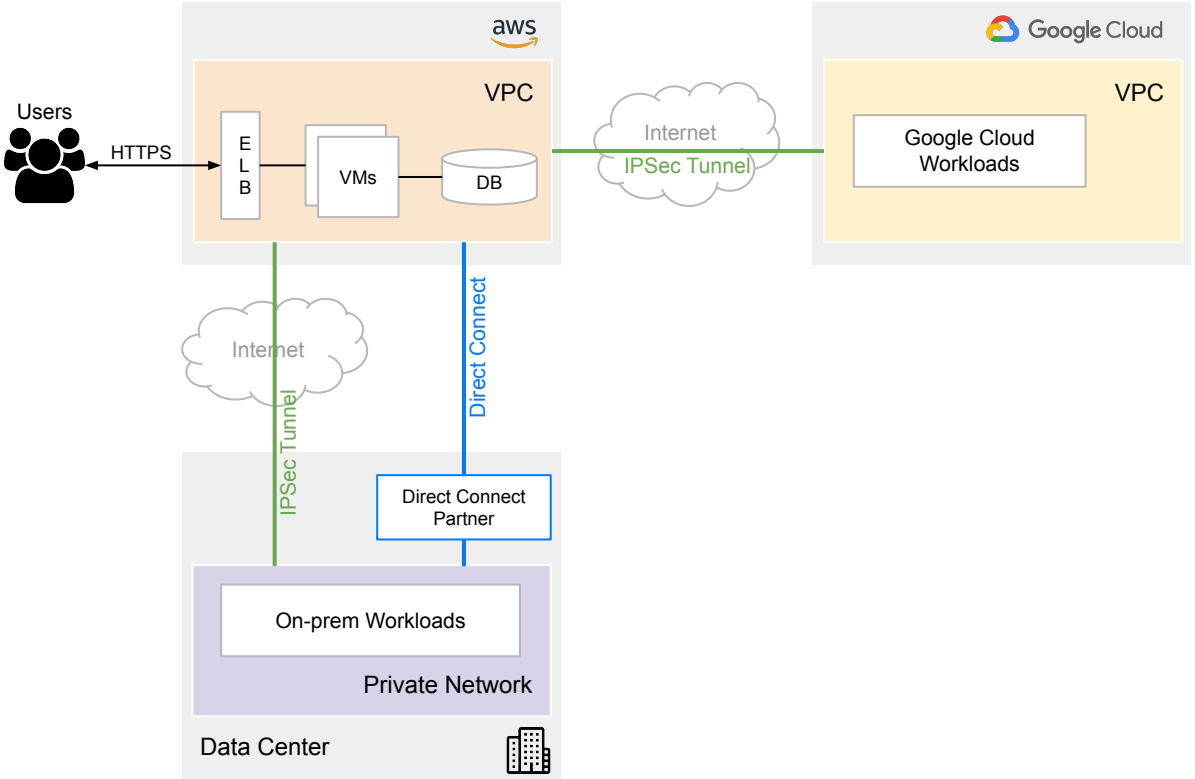
Benefit	Element
Cloud Service Providers offer dramatically lower rates for egress bandwidth charges.	**Costs**
By avoiding the Internet and leveraging private connections, companies can improve elements of their security story.	**Security**
By leveraging private networking, data flows in a more direct path, which can improve the performance of applications.	**Performance**

Cloud Networking: Multicloud



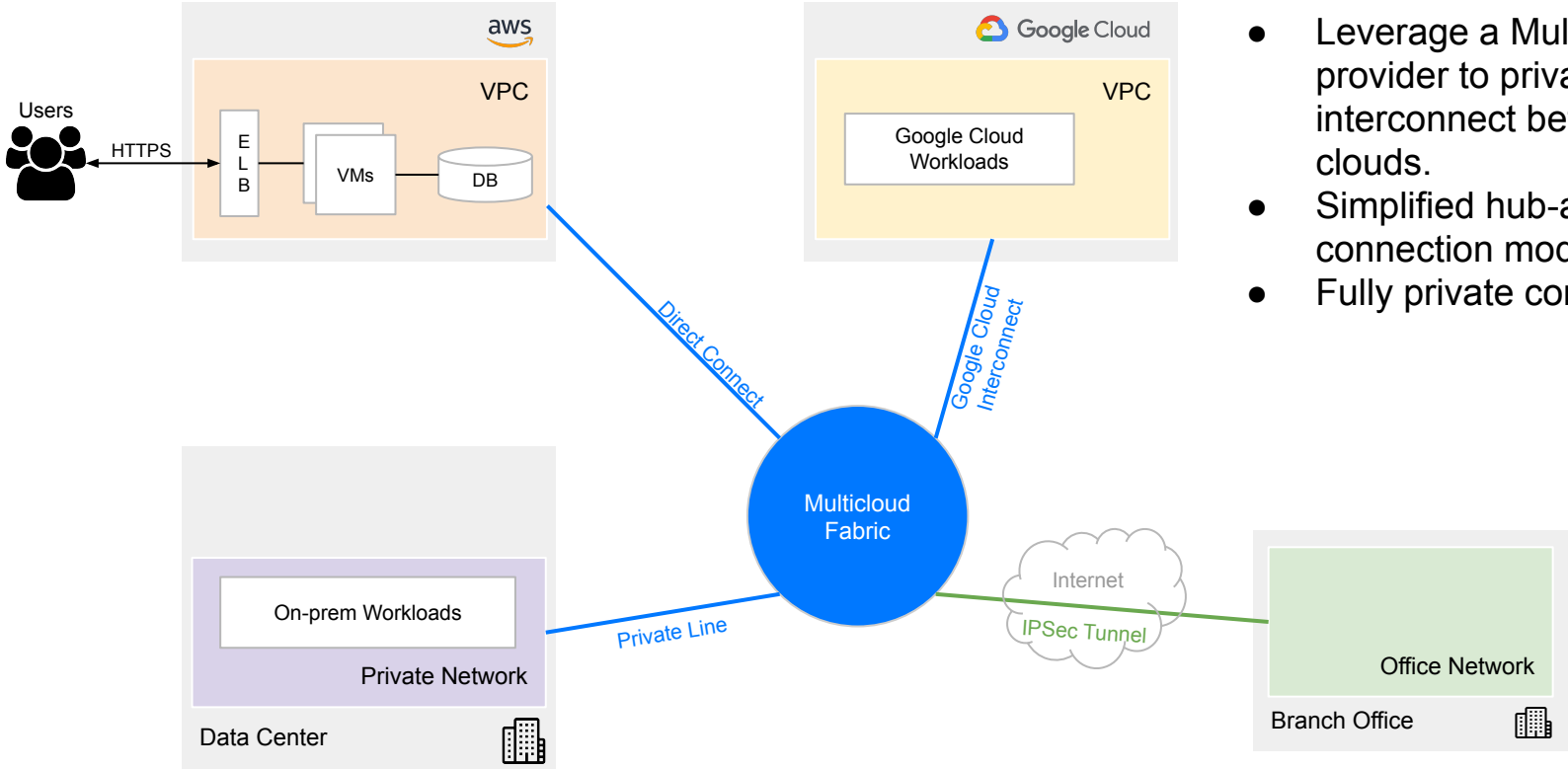
- Workload split across multiple public clouds
- Take advantage of unique offerings from different cloud providers (e.g Google Cloud Spanner)
- How do we securely communicate between 2 public clouds?
  - TLS / REST APIs

Cloud Networking: Multicloud



- Workload split across multiple public clouds
- Take advantage of unique offerings from different cloud providers (e.g Google Cloud Spanner)
- How do we securely communicate between 2 public clouds?
  - TLS / REST APIs
  - **IPSec Tunnel over public internet**
  - What about a private connection?

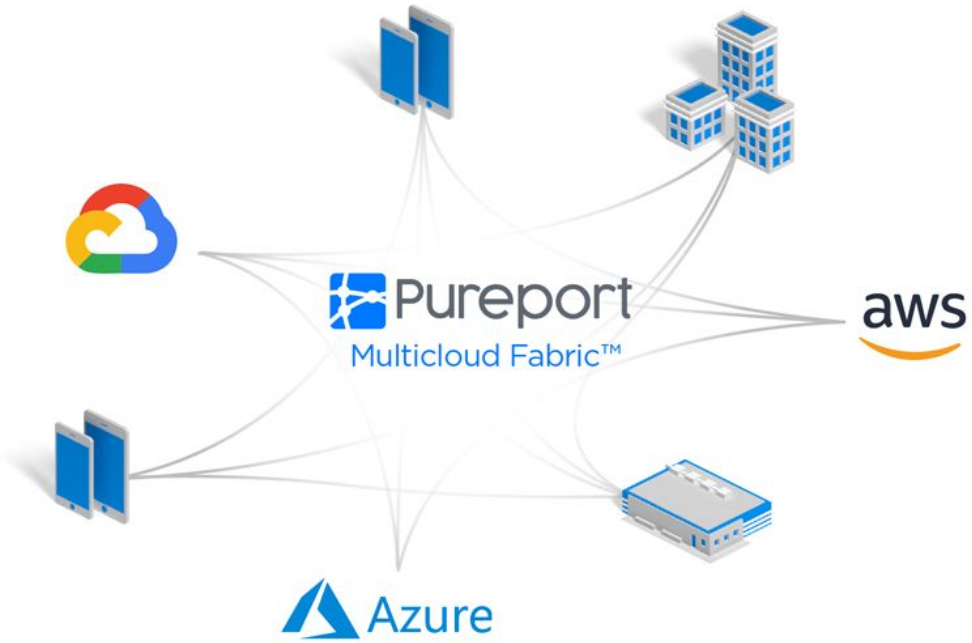
Cloud Networking: Multicloud Fabric



- Leverage a Multicloud Fabric provider to privately interconnect between sites and clouds.
- Simplified hub-and-spoke connection model.
- Fully private connectivity.

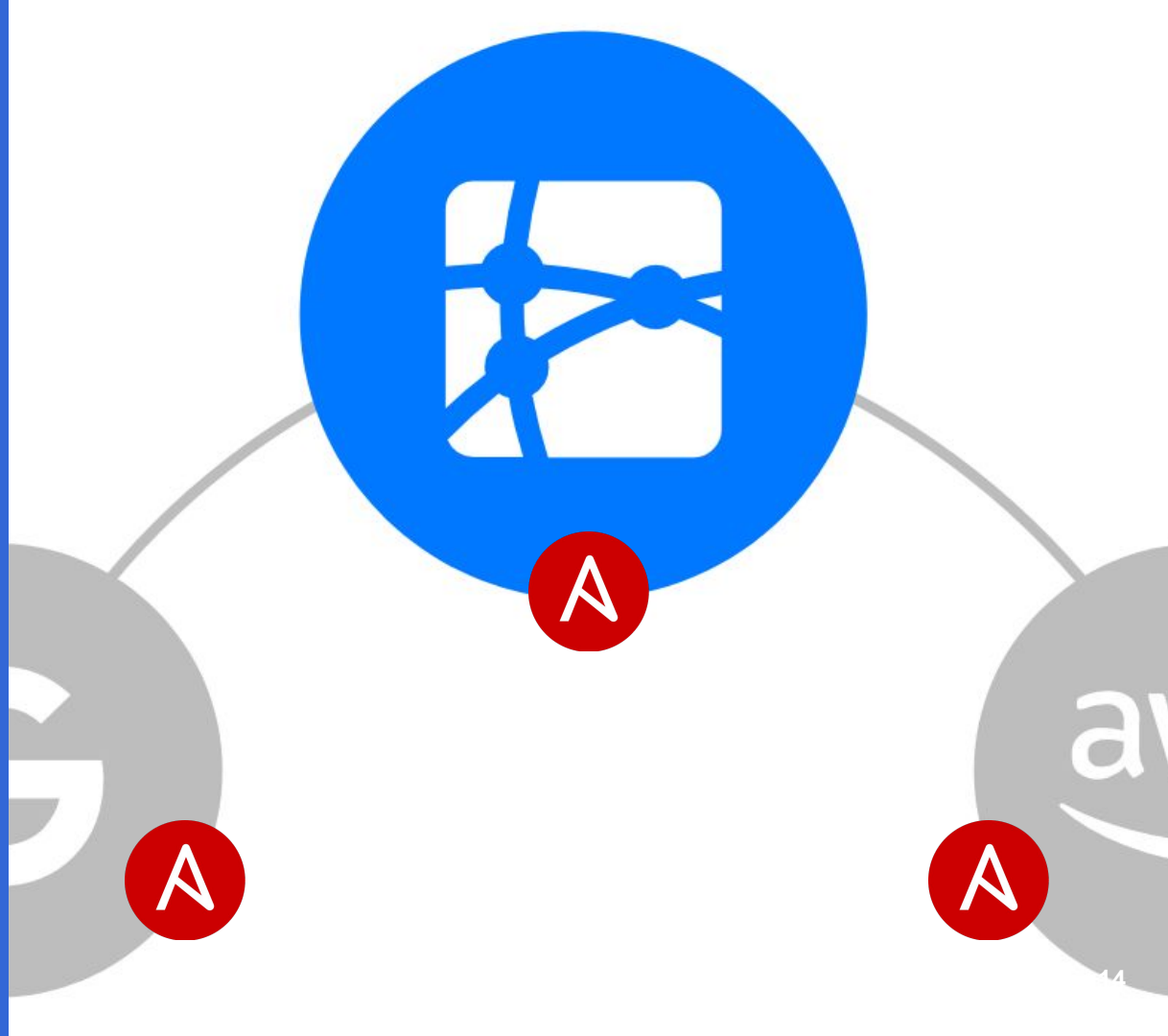
Pureport's Multicloud Fabric™

- Software defined, private, layer-3, interconnection of sites and cloud networks in minutes with no additional hardware required.
- Official AWS Direct Connect, Azure ExpressRoute, and Google Interconnect partner.
- VPN Connectivity or physical port connectivity from 150+ Pureport enabled PoPs across the U.S.
- Customers can be turned-up in minutes and bandwidth adjusted at any time.



Pureport
Demo

Connect a Google VPC to an AWS VPC w/ Ansible



Why might you want to do this?

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Cloud Providers have similar feature parity:

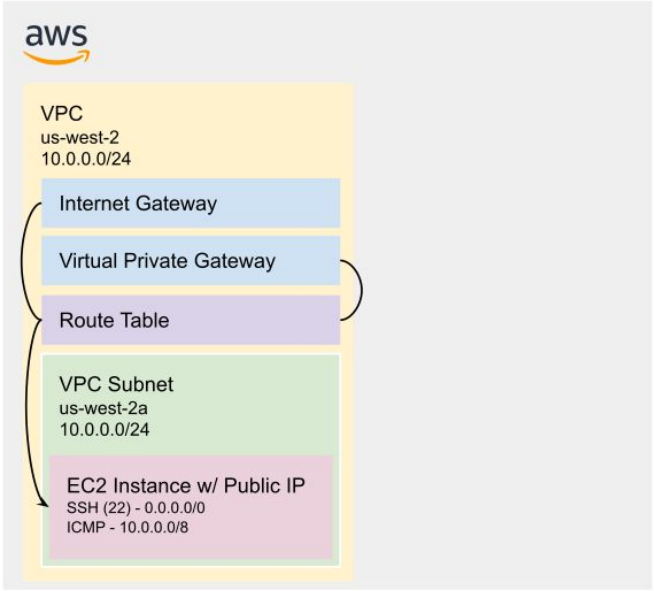
- Storage
  - Block
  - Object
- Computation
  - Data Warehousing
  - Analytics/Machine Learning
- Networking & CDN

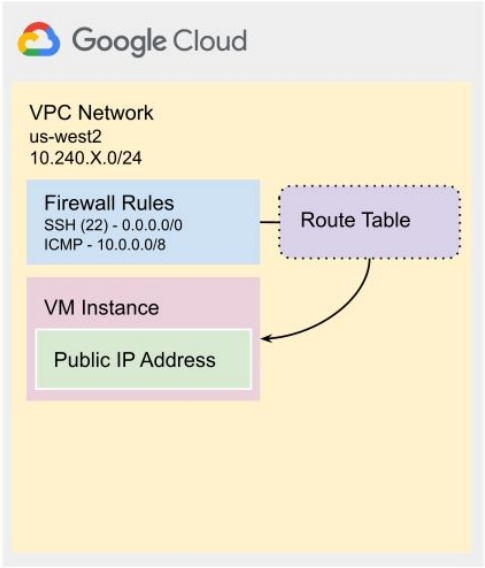
But they differ with:

- Ease of Use
- Performance
- Cost

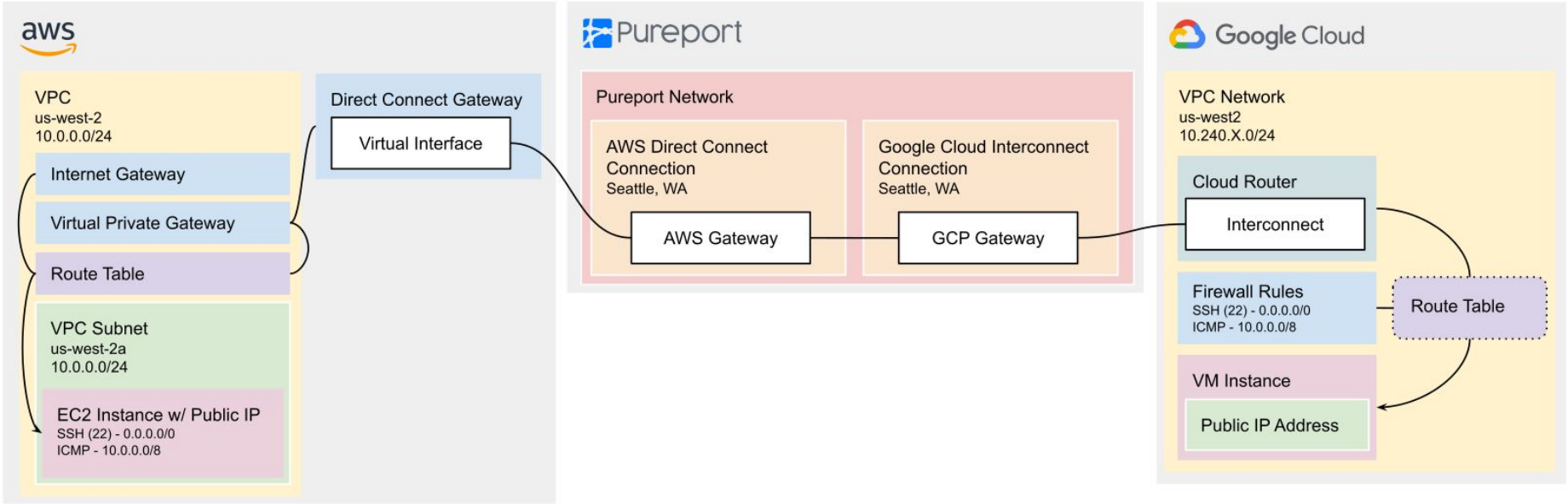
Take advantage of the diversity in **multiple** Cloud Providers.

Demo Outline - Initial Playbook

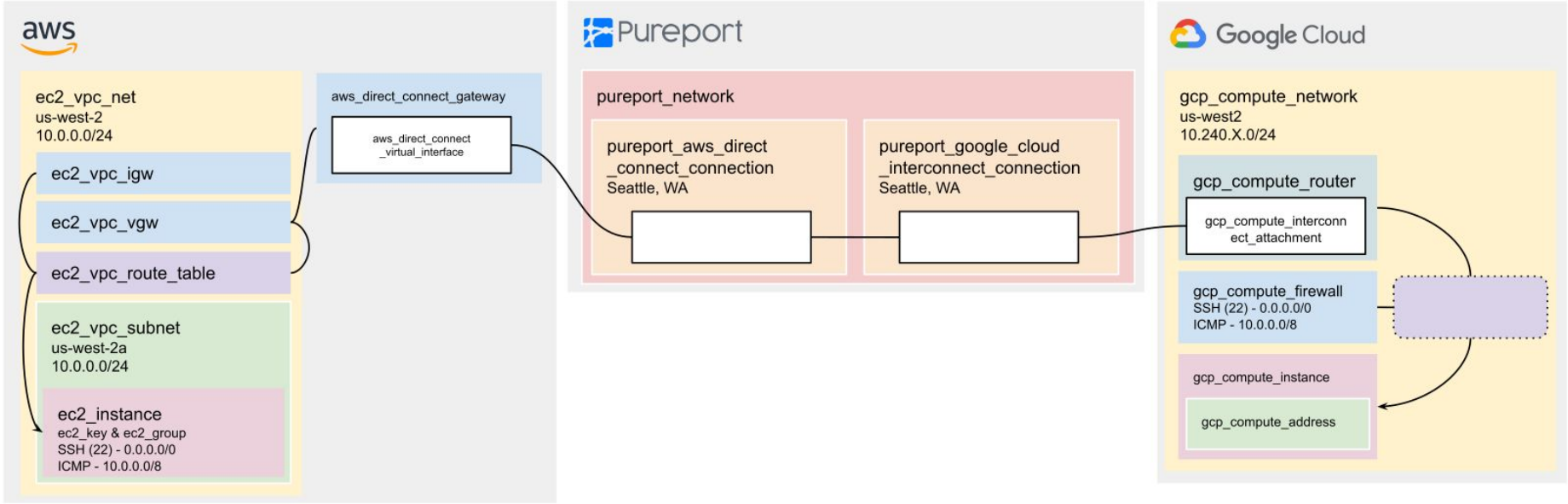




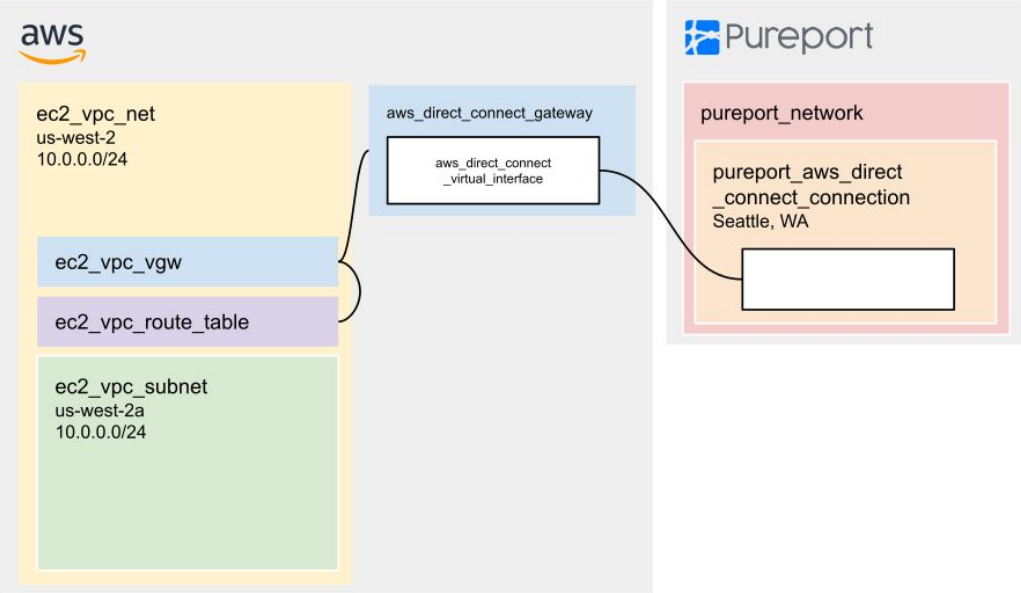
Demo Outline - Second Playbook



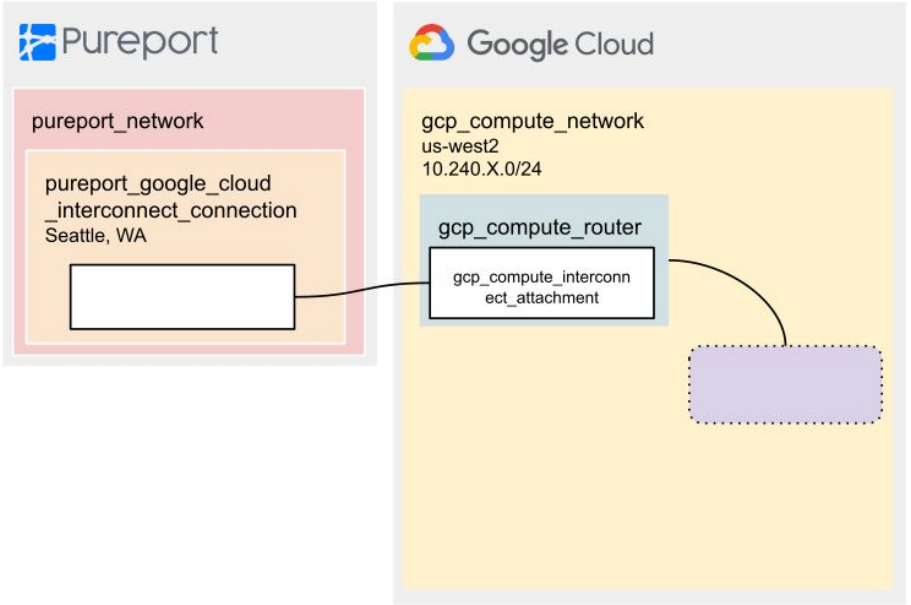
Demo Outline w/ Ansible Module Names



Ansible Role - pureport_aws_direct_connect



Ansible Role - pureport_google_cloud_interconnect



How does Pureport use Ansible?

- Ansible is source of truth for all configs in every environment.
- 56 roles
- 11 inventories (dev, qa, staging, prod, and 1 for each “virtual pod”)
- Continuous deployment to dev integration environment using Ansible.
- Releases to production are fully automated by running playbook against entire production environment.
- Production:
  - 20 network switches
  - 15 bare metal servers
  - 4 AWS Fargate services
  - Kafka cluster
  - OpenStack
  - Monitoring
  - Network configuration

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Questions?

Learn More

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pureport.com

github.com/pureport

github.com/pureport/pureport-ansible-meetup

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Thank you!