



# Cloud Resource Identification, Inventory and Grouping

# Topics Covered



## Tenet from NIST Publication 800-207 - Zero Trust Architecture (ZTA)

**The enterprise collects as much information as possible about the current state of assets, network infrastructure and communications and uses it to improve its security posture.**

- Asset Inventory using Aviatrix CoPilot Asset Inventory
- Resources identification using tags and other attributes
- Resource Grouping using Aviatrix SmartGroups

## Use Cases:

Zero Trust Network Access  
(Cloud Firewalling)

Secure B2B  
Connectivity

Secure High-Performance Data  
Connectivity for LLMS

Secure High-Performance  
Datacenter Edge

Cloud Visibility and  
Tooling

# CSP Cloud Accounts Inventory



☰ CoPilot

🔍 Search

🏠 Dashboard

🌐 Cloud Fabric

🔗 Networking

🛡️ Security

👤 Groups

☁️ Cloud Resources

Cloud Account

☁️ Cloud Assets

📊 Monitor

🔧 Diagnostics

👥 Administration

⚙️ Settings

Cloud Account

+ Cloud Account

Actions

Audit Settings

🔼

📄

<input type="checkbox"/> Account Name	Cloud	Account Number / ID	RBAC Group	Audit Status	Last Audit Time
<input type="checkbox"/> <a href="#">accounting-aws</a>	AWS	894337324417	admin, <a href="#">+ 5 more</a>	⚠️ Warning	May 8, 2025 2:00:02 AM
<input type="checkbox"/> <a href="#">engineering-aws</a>	AWS	884657925782	admin, <a href="#">+ 5 more</a>	⚠️ Warning	May 8, 2025 2:00:03 AM
<input type="checkbox"/> <a href="#">enterprise-data-gcp</a>	GCP	aviatrix-demo-dev	admin, <a href="#">+ 5 more</a>	✅ Pass	May 8, 2025 2:00:07 AM
<input type="checkbox"/> <a href="#">marketing-azure</a>	Azure ARM	c6fd7442-2813-4056-ae02-c029a4263885	admin, <a href="#">+ 5 more</a>	✅ Pass	May 8, 2025 2:00:09 AM
<input type="checkbox"/> <a href="#">operations-aws</a>	AWS	667857464789	admin, <a href="#">+ 5 more</a>	✅ Pass	May 8, 2025 2:00:07 AM
<input type="checkbox"/> <a href="#">operations-azure</a>	Azure ARM	cb4b4bc0-a245-42e1-8381-f602ca428232	admin, <a href="#">+ 5 more</a>	✅ Pass	May 8, 2025 2:00:10 AM
<input type="checkbox"/> <a href="#">operations-gcp</a>	GCP	aviatrix-demo-stg	admin, <a href="#">+ 5 more</a>	✅ Pass	May 8, 2025 2:00:14 AM
<input type="checkbox"/> <a href="#">operations-oci</a>	OCI	ocid1.tenancy.oc1..aaaaaaaawgcwwvxnmuh	admin, <a href="#">+ 5 more</a>	✅ Pass	May 8, 2025 2:00:16 AM

# CSP Assets Inventory



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Cloud Assets

Virtual Machines

VPC/VNets & Subnets

Kubernetes Clusters

+ VPC/VNet

Actions

Filter

Grid

Download

Name	Cloud	Region	Availability Zone	IP Address CIDR	VMs	Cloud Tags
accounting-aws-spoke-prod	AWS	us-east-1	us, + 1 more	10.1.4.0/24	accounti...	Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
accounting-aws-spoke-qa	AWS	us-east-1	us, + 1 more	10.1.3.0/24	accounti...	Name: accounting-aws-spoke-qa, + 1 more
engineering-aws-spoke-dev	AWS	us-east-2	us, + 1 more	10.5.2.0/24	engineer...	Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
engineering-aws-spoke-prod	AWS	us-east-2	us, + 1 more	10.5.4.0/24	engineer...	Name: engineering-aws-spoke-prod, + 1 more
engineering-aws-spoke-qa	AWS	us-east-2	us, + 1 more	10.5.3.0/24	engineer...	Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
example-aws-spoke-vpc	AWS	us-east-1	us, + 5 more	10.101.1....		Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
example-aws-transit-vpc	AWS	us-east-1	us, + 1 more	10.102.0....		Name: example-aws-transit-vpc, + 1 more
operations-aws-landing-zone	AWS	us-east-1	us, + 1 more	10.7.2.0/24		Name: operations-aws-landing-zone, + 1 more
operations-aws-spoke-k8s	AWS	us-east-1	us, + 1 more	10.1.5.0/24	ng_1	Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
transit-aws-us-east-1	AWS	us-east-1	us, + 1 more	10.1.0.0/23	transit-a...	Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
transit-aws-us-east-2	AWS	us-east-2	us, + 1 more	10.5.0.0/23		Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
example-azure-spoke-vnet	Azure ARM	East US	eastus	10.108.1....		Aviatrix-Created-Resource: Do-Not-Delete-Aviatrix-Created-Resource, + 1 more
example-azure-transit-vnet	Azure ARM	East US	eastus	10.109.0....		Name: example-azure-transit-vnet, + 1 more
marketing-azure-spoke-all	Azure ARM	North Eu...	northeur...	10.2.2.0/24	ag, + 3 more	Name: marketing-azure-spoke-all, + 1 more
operations-azure-spoke-k8s	Azure ARM	North Eu...	northeur...	10.2.5.0/24	aks-agen...	Name: operations-azure-spoke-k8s, + 1 more
transit-azure-north-europe	Azure ARM	North Eu...	northeur...	10.2.0.0/23		Name: transit-azure-north-europe, + 1 more
enterprise-data-gcp-spoke-dev	GCP					

GCP labels (tags) are NOT available for VPC or VPC Network

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Kubernetes Clusters

DCF on Kubernetes Clusters is in Preview. Preview features are not safe for deployment in production environments.

Only publicly accessible Kubernetes Clusters are supported. Clusters with Overlay Networks have limited support for Distributed Cloud Firewall.

Manually Onboard Cluster

Filter

Grid

Download

Help

Name	Cloud Account	VPC/VNets	Namespaces	Onboarded
shared-north-europe-aks-cluster	operations-azure	operations-azure-spoke-k8s	7	
shared-us-east-1-eks	operations-aws	vpc-03bca47bf62b22bf3	7	

backend

default

frontend

kube-node-lease

kube-public

kube-system

shared-services

18

8

Yes

Yes

# Global Routing Inventory (i.e Cloud Routes): Aviatrix Gateways' RTBs

Cloud Routes

Gateway Routes

VPC/VNet Routes

External Connections

BGP Info

More Specific Routes injected by the Controller

Gateway	VPC/VNet	Gateway Status	Tunnel Status	Tunnels	Routes		
accounting-aws-psf-dev	accounting-aws-spoke-dev (10.1.2.0/24)	Up	Unknown	0	4		
accounting-aws-spoke-dev	accounting-aws-spoke-dev (10.1.2.0/24)	Up	Up	1	7		
ROUTE	SOURCE	INTERFACE	VIA	NEXT HOP IP	NEXT HOP GATEWAY	METRIC	W
default, 10.1.2.2/32	10.1.2.37	eth0 (INF2)	10.1.2.33	10.1.2.33		100	
default		eth0 (INF2)	10.1.2.33	10.1.2.33		400	
10.1.0.13/32	10.1.2.37	tun-2CCD3F57-0 (INF9)		44.205.63.87	transit-aws-us-east-1	0	
10.1.2.0/24		eth0 (INF2)	10.1.2.33	10.1.2.33		0	
10.1.2.32/28, 10.1.2.33/32	10.1.2.37	eth0 (INF2)				100	
10.2.2.0/24, 10.3.2.0/24, + 230 more	10.1.2.37	tun-2CCD3F57-0 (INF9)		44.205.63.87	transit-aws-us-east-1	100	
accounting-aws-spoke-prod	accounting-aws-spoke-prod (10.1.4.0/24)	Up	Up	1	7		

# Global Routing Inventory (i.e Cloud Routes): CSPs' Routers RTBs

Cloud Routes Gateway Routes <b>VPC/VNet Routes</b> External Connections BGP Info			
<div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> </div>			
^ Name	VPC/VN		
^ accounting-aws-spoke-prod-Private-1-us-east-1a-rtb	accounting-aws-spoke-prod(vpc-0048eff309de2a237) (10.1.4.0/24)	rtb-04af5a7543e7c5a38	5
ROUTE	GATEWAY	TARGET	
10.1.4.0/24	local	local	
192.168.0.0/16	aviatrix-accounting-aws-spoke-prod	i-0abc894bf28fd199c	
172.16.0.0/12	aviatrix-accounting-aws-spoke-prod	i-0abc894bf28fd199c	
10.0.0.0/8	aviatrix-accounting-aws-spoke-prod	i-0abc894bf28fd199c	
0.0.0.0/0	aviatrix-accounting-aws-spoke-prod	i-0abc894bf28fd199c	
^ accounting-aws-spoke-prod-Private-2-us-east-1b-rtb	accounting-aws-spoke-prod(vpc-0048eff309de2a237) (10.1.4.0/24)	rtb-00168625453f0490a	5
^ aviatrix-accounting-aws-spoke-prod	accounting-aws-spoke-prod(vpc-0048eff309de2a237) (10.1.4.0/24)	rtb-0735497e6a502311c	2
^ accounting-aws-spoke-prod-Public-2-us-east-1b-rtb	accounting-aws-spoke-prod(vpc-0048eff309de2a237) (10.1.4.0/24)	rtb-0ecdae864f2592abd	5
^ accounting-aws-spoke-prod-Public-1-us-east-1a-rtb	accounting-aws-spoke-prod(vpc-0048eff309de2a237) (10.1.4.0/24)	rtb-0951896b8db8489b2	5

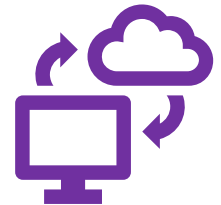
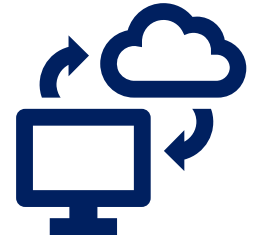
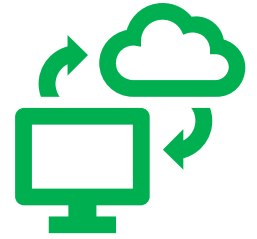
Summary Routes (rfc1918 routes), local cidr, default route... injected by the Controller



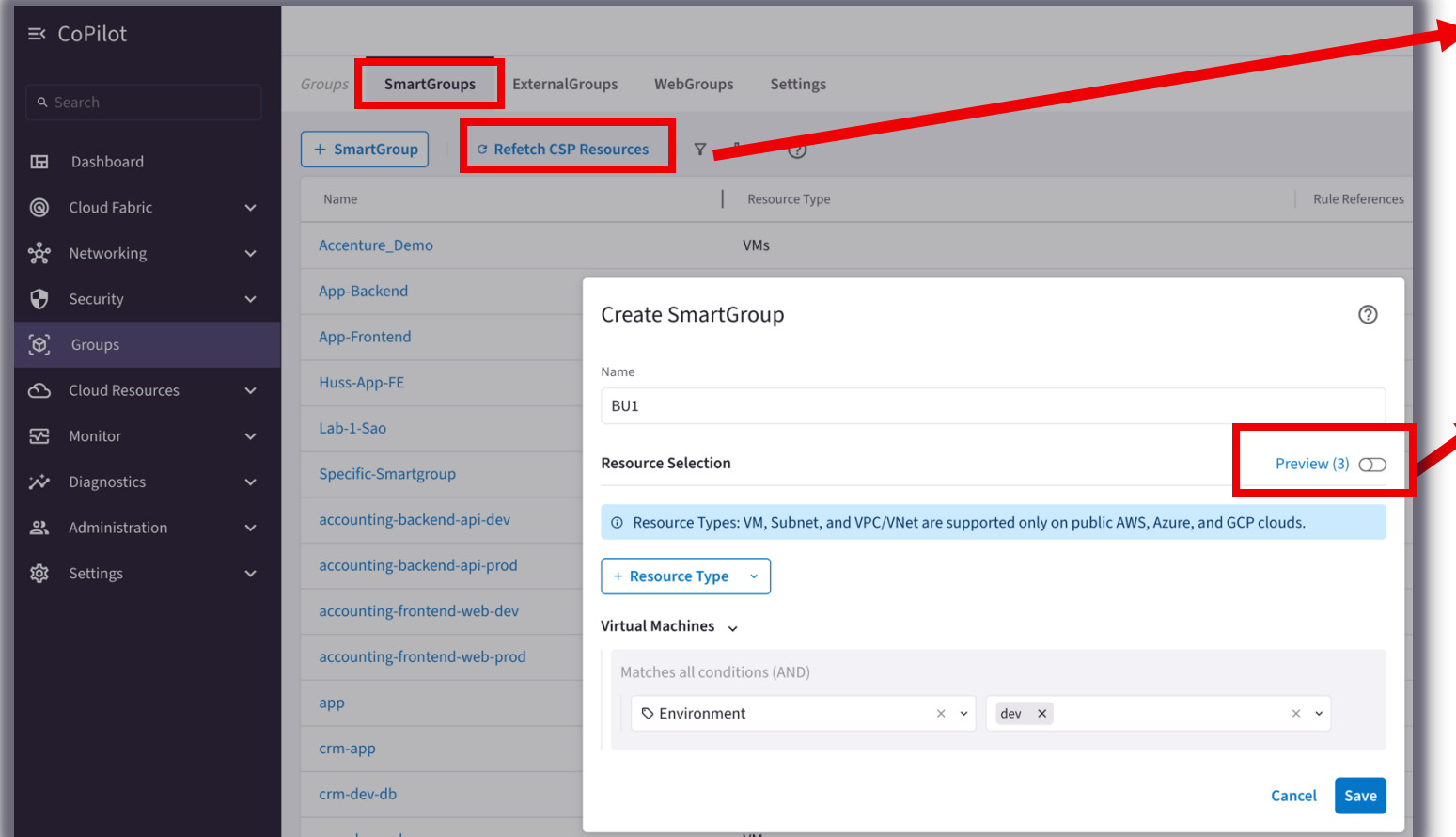
# Aviatrix Smart Group


An Aviatrix Smart Group identifies a group of resources with similar policy requirements confined in the same logical container.

- The members of a Smart Group can be classified using *three* methods:
  - CSP Tag
  - Subnets
  - VPC/Vnets
  - Kubernetes
  - Hostnames
  - External Connections (S2C)



# Smart Groups Creation




Successfully refreshed CSP resources

Auto Dismisses in 4s
Dismiss

### Create SmartGroup

Name
 BU1

Resource Selection
 Preview (3)

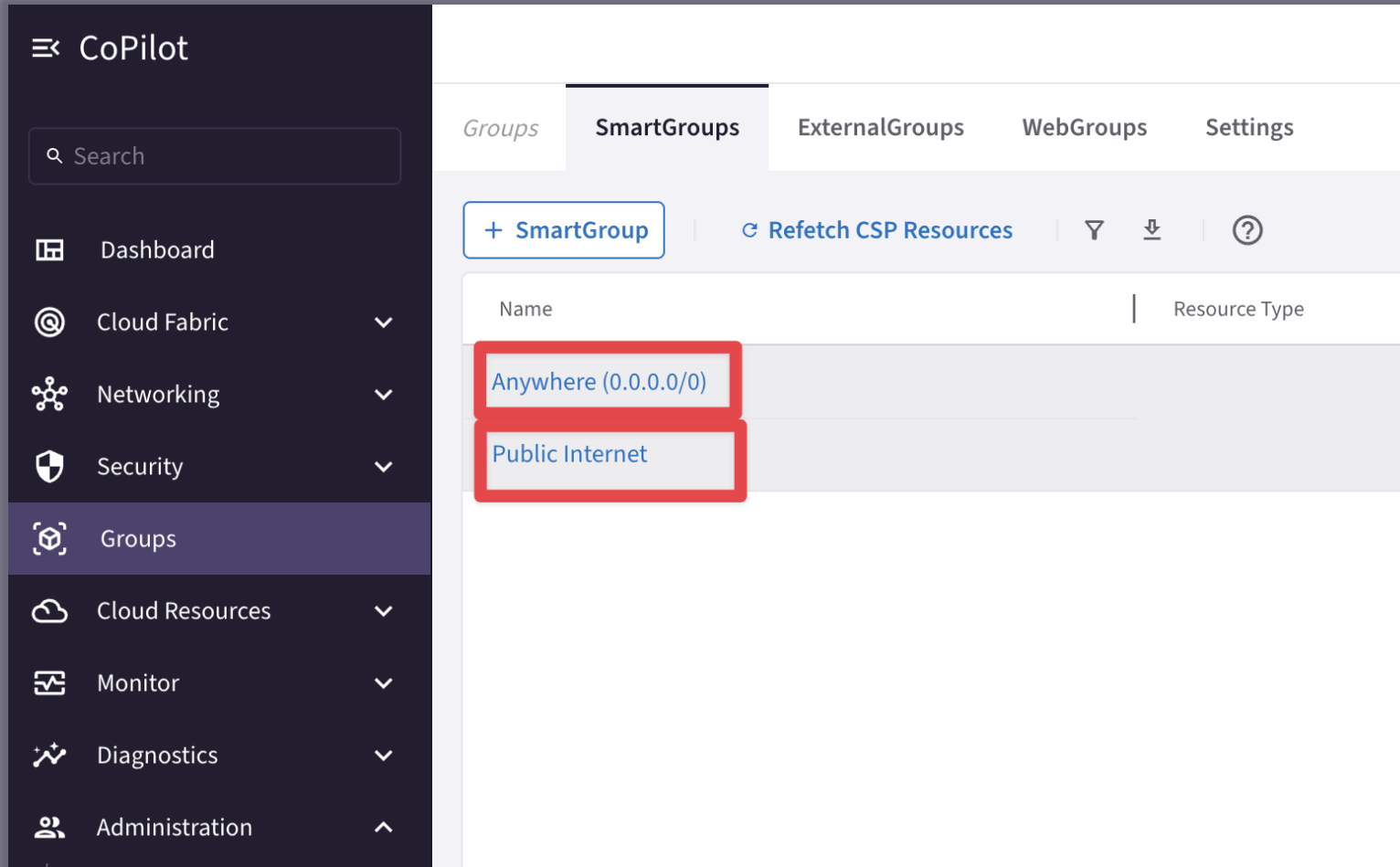
Name	Type	Cloud	Region
accounting-web-dev	VM	AWS	us-east-1
engineering-web-dev	VM	AWS	us-east-2
marketing-web-dev	VM	Azure ARM	northeurope

Total 3 Resources

Cancel Save

- Controller polls the CSPs to retrieve inventory (about VPCs, instances etc.) every **15 minutes** (can be modified)
- CoPilot queries Controller every **1 hour** (can be modified)
- On-demand refresh of tags is available

# Pre-defined Smart Groups



The screenshot shows the Aviaatrix CoPilot interface. On the left is a dark sidebar with a 'CoPilot' header and a search bar. Below the search bar are navigation links: Dashboard, Cloud Fabric, Networking, Security, Groups (highlighted), Cloud Resources, Monitor, Diagnostics, and Administration. The main content area has tabs for Groups, SmartGroups (selected), ExternalGroups, WebGroups, and Settings. Under the SmartGroups tab, there are buttons for '+ SmartGroup', 'Refresh CSP Resources', a filter icon, a download icon, and a help icon. Below these buttons is a table with two columns: 'Name' and 'Resource Type'. Two rows are visible in the table, both highlighted with red boxes: 'Anywhere (0.0.0.0/0)' and 'Public Internet'.

Name	Resource Type
Anywhere (0.0.0.0/0)	
Public Internet	

- **Anywhere (0.0.0.0/0)** → RFC1918 routes + Default Route (IGW)
- **Public Internet** → Default Route (IGW)

# Asset Inventory with SmartGroups



CoPilot

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Kubernetes Clusters

Actions

Search

<input type="checkbox"/> Name ↑	Cloud ↑	Region	Availability Zone	IP Address	Tags	SmartGroups
<input type="checkbox"/> accounting-app-prod	AWS	us-east-1	us-east-1a	10.1.4.10	Repository: aviatrixsys... , + 9 more	app, crm-app, crm-dev-web, crm-prod, crm-qa, + 3 more
<input type="checkbox"/> accounting-app-qa	AWS	us-east-1	us-east-1a	10.1.3.10	Division: Solution Engi... , + 9 more	Accenture_Demo, app, crm-app, crm-dev-web, + 5 more
<input type="checkbox"/> accounting-web-dev	AWS	us-east-1	us-east-1a	10.1.2.10	Tier: web, + 9 more	Accenture_Demo, crm-app, crm-dev-web, crm-prod, + 4 more
<input type="checkbox"/> appiq-example-destination	AWS	us-east-1	us-east-1a	10.1.2.5	Repository: aviatrixsys... , + 9 more	app, crm-prod, crm-qa-app, marketing-prod, prod
<input type="checkbox"/> engineering-app-prod	AWS	us-east-2	us-east-2a	10.5.4.10	Name: engineering-ap... , + 9 more	App-Frontend, Huss-App-FE, app, crm-prod, + 4 more
<input type="checkbox"/> engineering-app-qa	AWS	us-east-2	us-east-2a	10.5.3.10	Terraform: true, Tier: app, + 8 more	Accenture_Demo, App-Frontend, Huss-App-FE, app, + 4 more
<input type="checkbox"/> engineering-web-dev	AWS	us-east-2	us-east-2a	10.5.2.10	Organization: Aviatrix ... , + 9 more	Accenture_Demo, App-Frontend, Huss-App-FE, + 4 more
<input type="checkbox"/> ng_1	AWS	us-east-1	us-east-1a	1..., + 19 more	k8s.io/cluster-autosc... , + 10 more	
<input type="checkbox"/> transit-aws-us-east-1-az1-fw1@172.64.1.114	AWS	us-east-1	us-east-1a	10..., + 4 more	Aviatrix-Created-Resou..., + 1 more	
<input type="checkbox"/> aks-agentpool-33639424-vmss_0	Azure ARM	North Europe	northeurope	1..., + 28 more	aks-managed-operati..., + 10 more	
<input type="checkbox"/> appiq-example-source	Azure ARM	North Europe	northeurope	10.2.2.45	Tier: app, + 9 more	app, crm-prod, crm-qa-app, marketing-prod, prod
<input type="checkbox"/> marketing-app-prod	Azure ARM	North Europe	northeurope	10.2.2.100	Name: marketing-app-..., + 9 more	App-Backend, app, crm-prod, crm-qa-app, + 2 more
<input type="checkbox"/> marketing-app-qa	Azure ARM	North Europe	northeurope	10.2.2.70	Organization: Aviatrix ... , + 9 more	Accenture_Demo, App-Backend, app, crm-qa, + 4 more
<input type="checkbox"/> marketing-web-dev	Azure ARM	North Europe	northeurope	10.2.2.40	Tier: web, + 9 more	Accenture_Demo, App-Backend, crm-dev-web, dev, + 2 more
<input type="checkbox"/> enterprise-data-dev	GCP	us-west1	us-west1-b	10.4.2.10	name: enterprise-data... , + 9 more	crm-app, crm-dev-db, database, dev-data
<input type="checkbox"/> enterprise-data-prod	GCP	us-west1	us-west1-b	10.4.4.10	terraform: true, + 9 more	crm-app, database, prod-data
<input type="checkbox"/> enterprise-data-qa	GCP	us-west1	us-west1-b	10.4.3.10	division: solution_engi..., + 9 more	crm-app, crm-qa-db, database, qa-data



**Next: Aviatrix Cloud Firewall**

# AVIATRIX CLOUD COFFE BREAK

- Core feature: **Feel free to grab a coffee**

