



AWS
re:Invent

NET211-S

Service mesh across hybrid infrastructure

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Agenda

Challenges in hybrid infrastructure

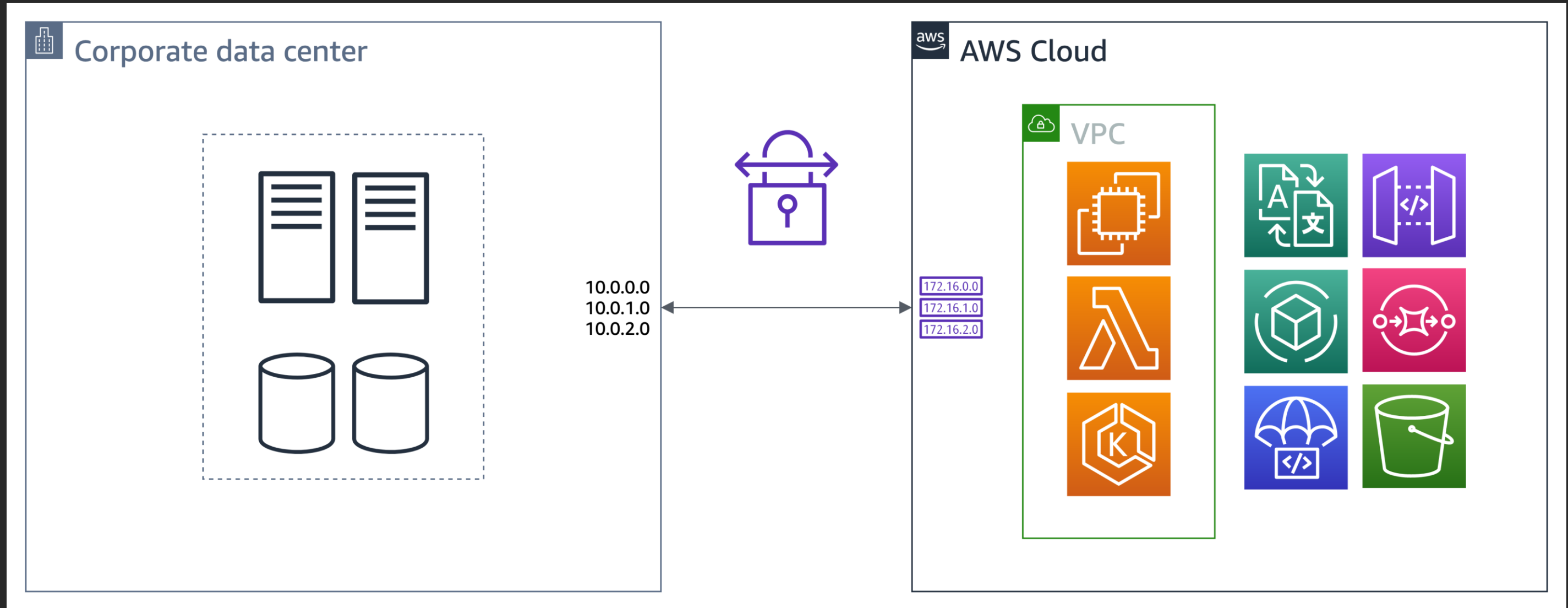
Building insight between AWS and the datacenter

Demo

Takeaways

Challenges in hybrid infrastructure

Setting up connectivity

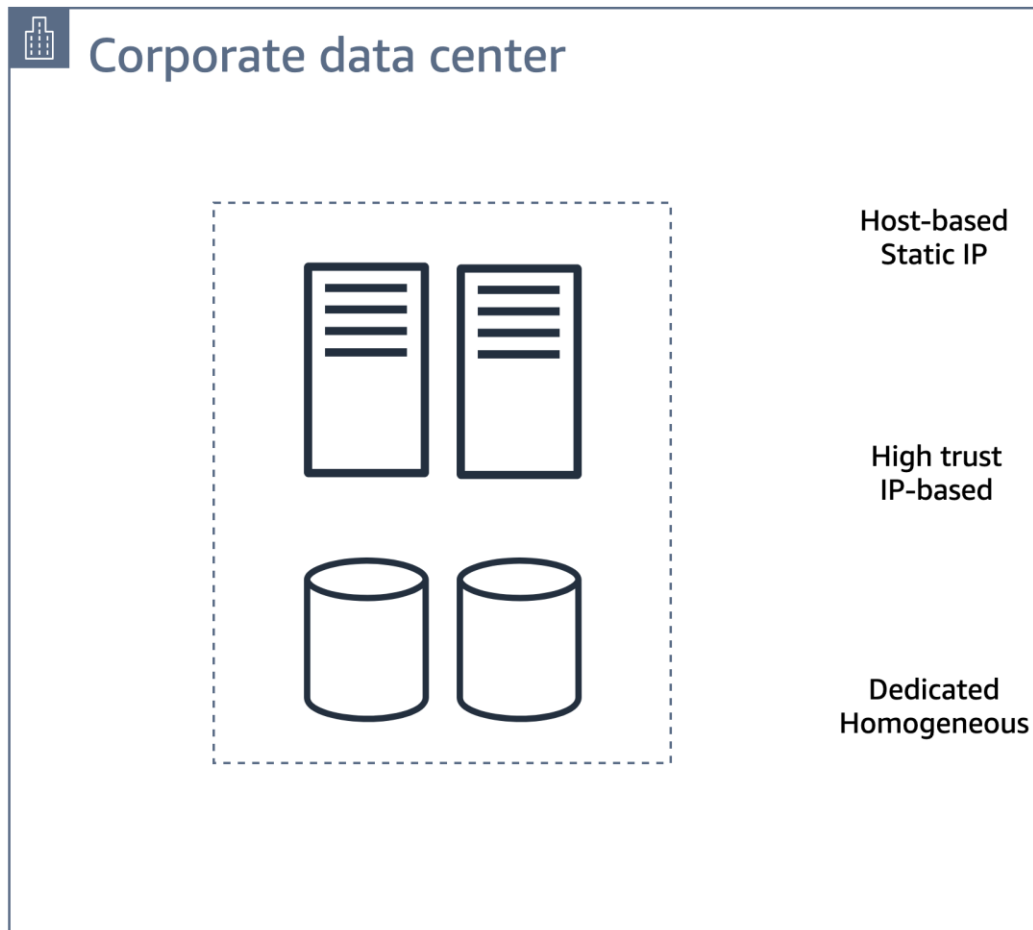


“Why won’t X connect to Y?
It should work.”

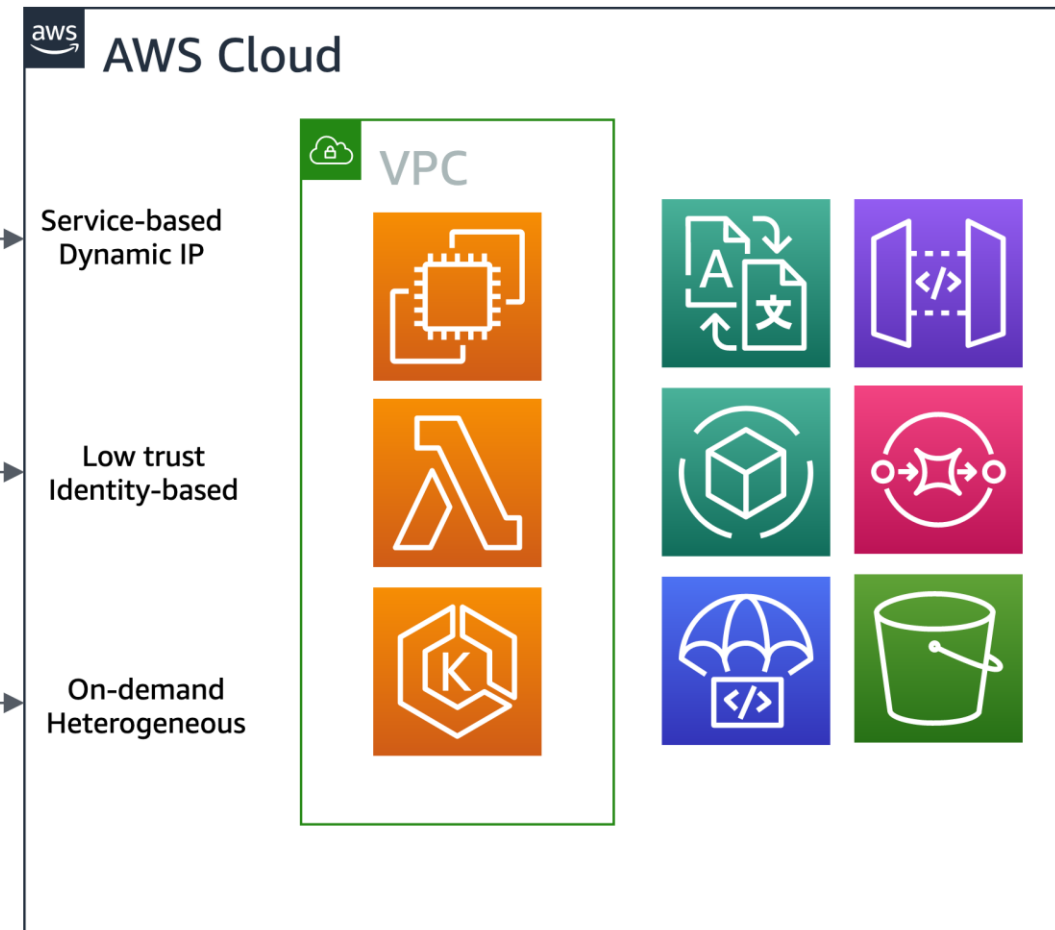
**Almost every engineer
working on hybrid cloud**

Systems of record vs. systems of engagement

STATIC DEDICATED INFRASTRUCTURE



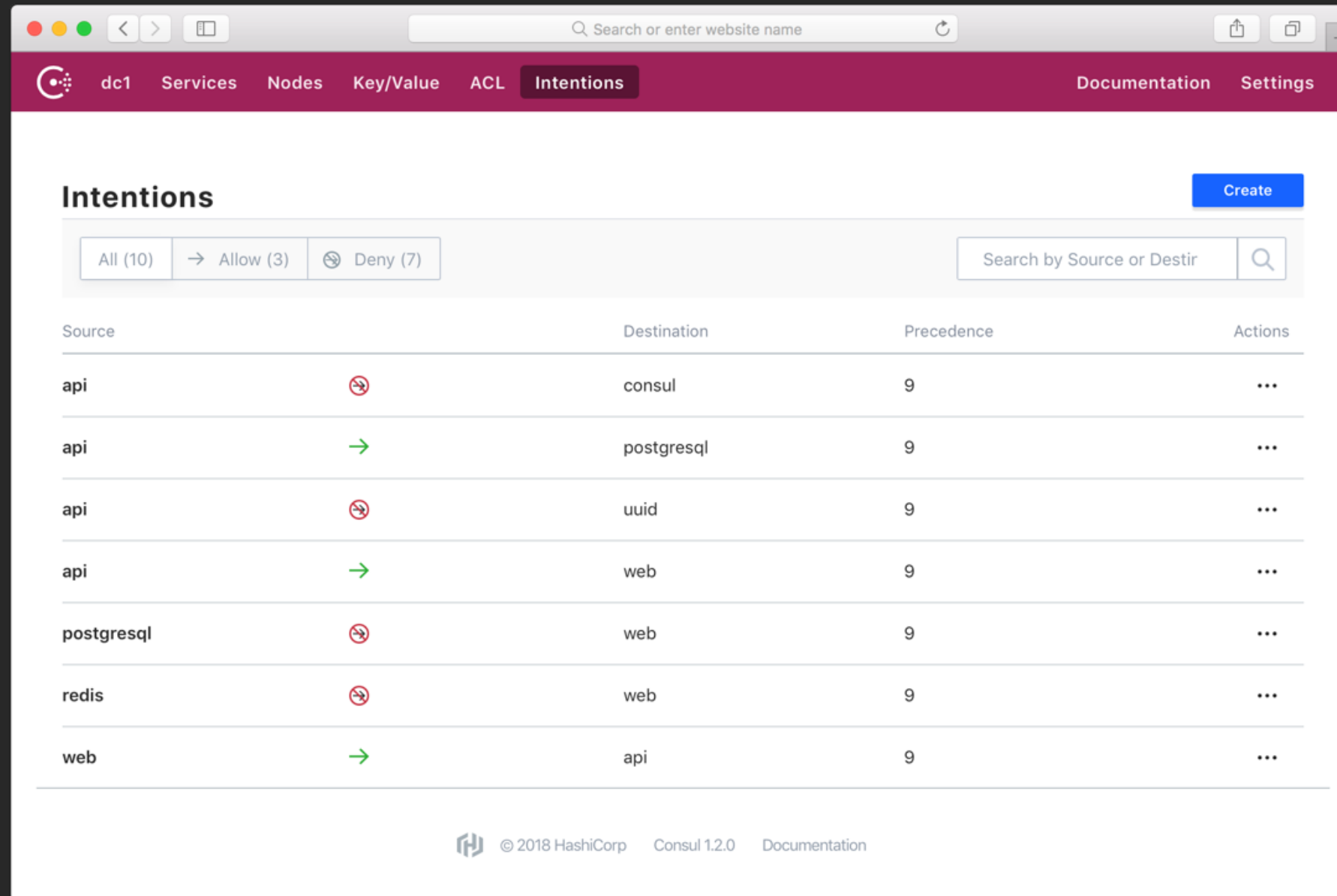
DYNAMIC INFRASTRUCTURE



Insights are difficult without context

530...	52.068045	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36600001 Ack=1 Win=48914 Len=1460
530...	52.069294	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36601461 Ack=1 Win=48914 Len=1460
530...	52.070175	131.243.127.166	128.3.15.232	NBDS	216	[Packet size limited during capture]
530...	52.070554	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36602921 Ack=1 Win=48914 Len=1460
530...	52.070570	82:95:f4:12:12:dc	Broadcast	ARP	60	Who has 131.243.127.166? Tell 131.243.127.186
530...	52.071247	128.3.15.232	131.243.127.166	NBDS	234	[Packet size limited during capture]
531...	52.071794	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36604381 Ack=1 Win=48914 Len=1460
531...	52.073042	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36605841 Ack=1 Win=48914 Len=1460
531...	52.074291	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36607301 Ack=1 Win=48914 Len=1460
531...	52.075665	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36608761 Ack=1 Win=48914 Len=1460
531...	52.077039	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36610221 Ack=1 Win=48914 Len=1460
531...	52.078293	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36611681 Ack=1 Win=48914 Len=1460
531...	52.078795	131.243.125.108	131.243.86.253	TCP	702	497 → 4137 [PSH, ACK] Seq=36613141 Ack=1 Win=48914 Len=648
531...	52.080289	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [PSH, ACK] Seq=36613789 Ack=1 Win=48914 Len=1460
531...	52.081537	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36615249 Ack=1 Win=48914 Len=1460
531...	52.082786	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36616709 Ack=1 Win=48914 Len=1460
531...	52.084042	131.243.125.108	131.243.86.253	TCP	1514	497 → 4137 [ACK] Seq=36618169 Ack=1 Win=48914 Len=1460

Apply systems of engagement approaches



The screenshot shows the Consul web interface for the 'Intentions' page. The navigation bar includes links for 'dc1', 'Services', 'Nodes', 'Key/Value', 'ACL', and 'Intentions' (which is highlighted). There are also links for 'Documentation' and 'Settings'. A search bar is present in the top right of the navigation bar.

The main content area is titled 'Intentions' and includes a 'Create' button. Below the title, there are filters for 'All (10)', 'Allow (3)', and 'Deny (7)'. A search bar labeled 'Search by Source or Destir' is also present.

Source	Destination	Precedence	Actions
api	consul	9	...
api	postgresql	9	...
api	uuid	9	...
api	web	9	...
postgresql	web	9	...
redis	web	9	...
web	api	9	...

The footer of the page includes the HashiCorp logo, copyright information '© 2018 HashiCorp', the version 'Consul 1.2.0', and a link to 'Documentation'.

Required functionality

- Discover AWS resources and services
- Discover datacenter resources and services
- Manage requests between AWS and the datacenter

Building insight between AWS and the datacenter

AWS Cloud Map

Service discovery for cloud resources

The screenshot displays the AWS Cloud Map console interface. The top navigation bar includes the AWS logo, a menu icon, and links to Services, Resource Groups, Route 53, VPC, EC2, IAM, and a notification bell. The breadcrumb trail indicates the current location: AWS Cloud Map > Namespaces > hashicorp.live > web. The main content area is titled 'Service: web' with an 'Info' link and a 'Delete' button. It is divided into four sections: 'Service information', 'DNS configuration', 'Health check configuration', and 'Service instances'.

Service information

Name	web	Service ID	srv-j4dmeipbe5rebwtm
Namespace name	hashicorp.live	Description	webservice
Namespace ID	ns-sgymkpxyj7lv3fu5		

DNS configuration

DNS routing policy	Record type	TTL
Weighted routing	A	300

Health check configuration

Health check type: No health check configured

Service instances


Buttons: Deregister, Register service instance

Find instance:

ID	Health
<input type="radio"/> web-1	<input type="radio"/> Unknown
<input type="radio"/> web-2	<input type="radio"/> Unknown
<input type="radio"/> web-3	<input type="radio"/> Unknown

HashiCorp Consul

Service discovery
and service mesh
for datacenter

 dc1

Services

Nodes

Key/Value

ACL

Intentions

Documentation

Services

All (1)




✓ Passing (1)

⚠ Warning (0)

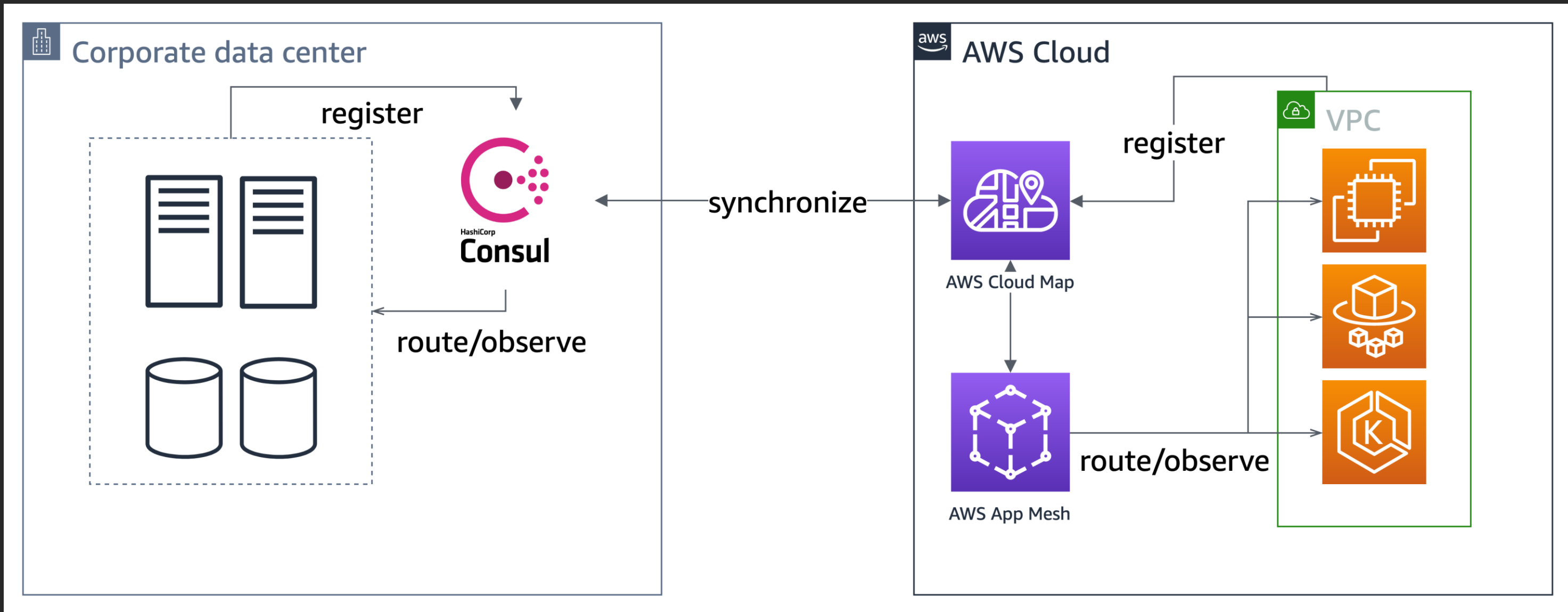
✖ Critical (0)

Search by name

🔍

Service	Node Health	Tags
 web	 0	aws
consul	 1	

Bridging the datacenter and AWS



Demo

Demo

- Configure AWS Cloud Map and HashiCorp Consul
- Register resources and services in AWS and the datacenter
- Manage requests between resources

Takeaways

Takeaways

- Visibility in AWS and the datacenter can ease operational complexity
- AWS Cloud Map, AWS App Mesh, and HashiCorp Consul can help manage and provide insight
- Integrate a system of record into a single system of engagement

Resources

- hashicorp.com/cloud-operating-model
- aws.amazon.com/cloud-map/
- aws.amazon.com/app-mesh/
- learn.hashicorp.com/consul/getting-started/connect
- hashicorp.com/blog/enabling-service-discovery-consul-cloud-map

Thank you!

Rosemary Wang

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Please complete the session
survey in the mobile app.