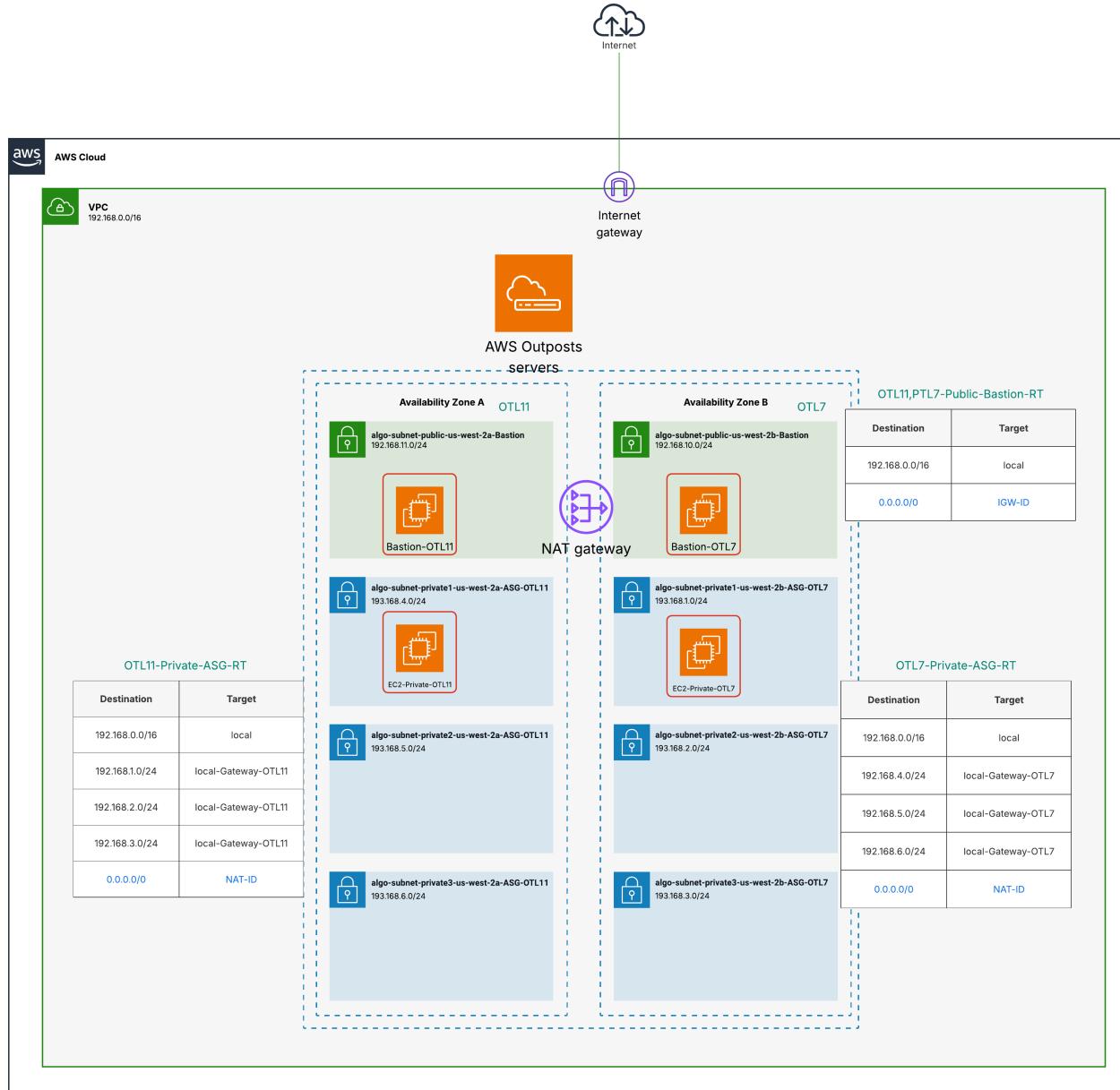


AWS 2 Outposts – Networking Configuration

Architecture

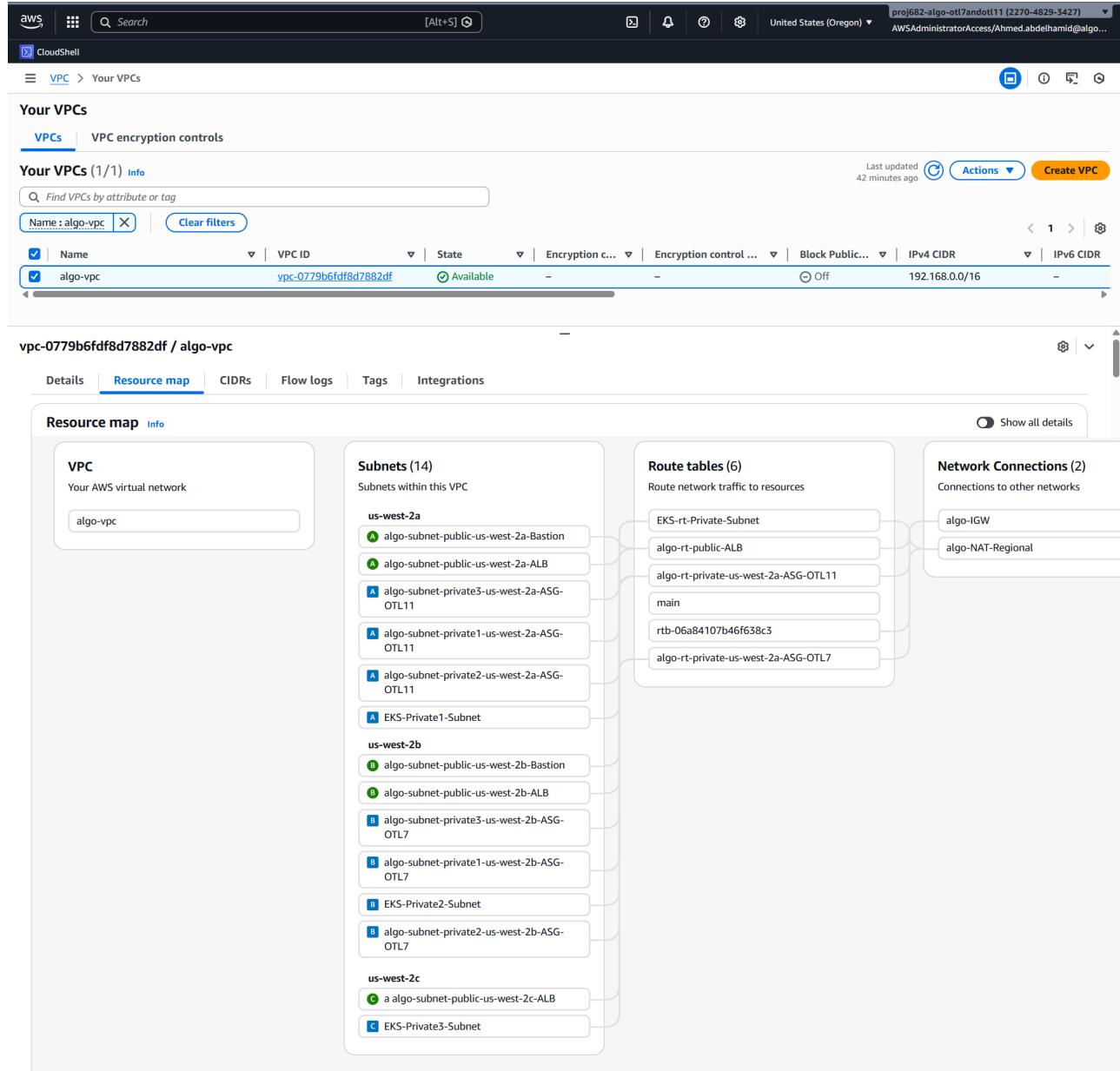


🌐 VPC (Region)

- 💡 **It is recommended to create a new VPC from scratch to prevent failures**
- Key points to ensure a smooth setup:
 - 🚫 Avoid using the main Route Table, as it results in errors.
 - Ensure the following components are created:
 - VPC-CIDR: 192.168.0.0/16**
 - Internet Gateway (IGW)**

- **Route Table**
 - Add Routes
 - Subnet Association
- **NAT Gateway** (Regional Only)
- Add appropriate tags for each resource.

VPC Diagram:



Subnet Breakdown and Configuration:

○ Outpost Subnet Creation:

OTL11 (Created on Outpost):

- 3-Private Subnet ASG (us-west-2a) → **Worker Nodes**
 - 192.168.4.0/24, 192.168.5.0/24, 192.168.6.0/24
- **Public Subnet Bastion (us-west-2a)** → Test connection
 - 192.168.11.0/24
- **Public Subnet ALB (us-west-2a)** — On Region

- 192.168.7.0/24

OTL7 (Created on Outpost):

- 3-Private Subnet ASG (us-west-2b) → **Worker Nodes**
 - 192.168.1.0/24, 192.168.2.0/24, 192.168.3.0/24
- **Public Subnet Bastion (us-west-2b)** → Test connection
 - 192.168.10.0/24
- **Public Subnet ALB (us-west-2b)** — On **Region**
 - 192.168.8.0/24
- **Public Subnet ALB (us-west-2c)** — On **Region**
 - 192.168.9.0/24

AWS Outpost

1. Local Gateway (LGW):

- Automatically created with the subnets.
- After creating subnets on the outpost:
 - **Local Gateway Route Tables** are created automatically.
 - You must **associate the VPC** and configure Routes.

2. Steps to perform:

- Go to the **VPC section**, and configure routing.
- Manage Subnet Association and Route Tables.

Graphical Illustrations:

Outpost ID	Name	Status	Open orders	Site ID	Availability Zone	Availability Zone ID	Supported I
op-0c74f70820f79907c	OTL7	Active	0	os-079092a3d49a83f60	us-west-2b	usw2-az1	Rack
op-0663daef268ef9183	OTL11	Active	0	os-01efdbd8545690252	us-west-2a	usw2-az2	Rack

- Local Gateway Visualization:

Local gateway ID	Name	Status	Outpost ID	Owner ID	Outpost ARN
lgw-0f7b7a45106d66b0d	OTL11	Available	op-0663daef268ef9183	726336412275	arn:aws:outposts:us-west-2:726336412275:outpost/op-0663daef268ef9183
lgw-008e7656cf09c9c21	OTL7	Available	op-0c74f70820f79907c	322625939534	arn:aws:outposts:us-west-2:322625939534:outpost/op-0c74f70820f79907c

LGW Configuration Table

Configuration OTL11

Local Gateway Configuration

AWS Outposts Local gateways

Local gateway ID: lgw-0f7b74510d60bd Status: Available Owner ID: 726336412275 Output ID: op-0f7b74510d60bd

Local gateway ID: lgw-0f7b74510d60bd Status: Available Owner ID: 726336412275 Output ID: op-0f7b74510d60bd

Details

Local gateway ID: lgw-0f7b74510d60bd Status: Available Owner ID: 726336412275 Output ID: op-0f7b74510d60bd

OTL7

AWS Outposts Local gateways

Local gateway ID: lgw-000e7656c90ck21 Status: Available Owner ID: 326261899634 Output ID: op-1af7c510d60bd

Local gateway ID: lgw-000e7656c90ck21 Status: Available Owner ID: 326261899634 Output ID: op-1af7c510d60bd

Details

Local gateway ID: lgw-000e7656c90ck21 Status: Available Owner ID: 326261899634 Output ID: op-1af7c510d60bd

Associate VPC

AWS Outposts Local gateway route tables

Local gateway route table ID: rtg-077ba0fb6a045111 Status: Available Name: rtg-077ba0fb6a045111 Local gateway ID: lgw-0f7b74510d60bd Mode: osp Owner ID: 726336412275

Local gateway route table ID: rtg-077ba0fb6a045111 Status: Available Name: rtg-077ba0fb6a045111 Local gateway ID: lgw-0f7b74510d60bd Mode: osp Owner ID: 726336412275

Details

VPC associations

VPC ID: vpc-000e7656c90ck21 Association ID: lgw-rtg-077ba0fb6a045111

AWS Outposts Local gateway route tables

Local gateway route table ID: rtg-009999fe5e70ee2a Status: Available Name: rtg-009999fe5e70ee2a Local gateway ID: lgw-000e7656c90ck21 Mode: osp Owner ID: 326261899634

Local gateway route table ID: rtg-009999fe5e70ee2a Status: Available Name: rtg-009999fe5e70ee2a Local gateway ID: lgw-000e7656c90ck21 Mode: osp Owner ID: 326261899634

Details

VPC associations

VPC ID: vpc-000e7656c90ck21 Association ID: lgw-rtg-009999fe5e70ee2a

Routing from the VPC Route table to Outpost through Local Gateway (LGW) — in the region

rtb-0e5ee4465bd5c37 / algo-rt-private-us-west-2a-ASG-OTL11

Details

Main No Owner ID: 2270482913427

Explicit subnet associations: 3 subnets

Edge associations: -

Routes Subnet associations Edge associations Route propagation Tags

Explicit subnet associations (3)

Name	Subnet ID	IPv4 CDR	IPv6 CDR
algo-subnet-private1-us-west-2a-ASG-OTL11	subnet-0f02a0f5d77a7b6	192.168.0.2/24	-
algo-subnet-private1-us-west-2a-ASG-OTL11	subnet-0935a5ab040c598	192.168.0.2/24	-
algo-subnet-private2-us-west-2a-ASG-OTL11	subnet-07ff0a6b27051431	192.168.0.2/24	-

rtb-0e5ee4465bd5c37 / algo-rt-private-us-west-2a-ASG-OTL11

Details

Main No Owner ID: 2270482913427

Explicit subnet associations: 3 subnets

Edge associations: -

Routes Subnet associations Edge associations Route propagation Tags

Explicit subnet associations (3)

Name	Subnet ID	IPv4 CDR	IPv6 CDR
algo-subnet-private1-us-west-2a-ASG-OTL11	subnet-0ed47a7dca14ec0	192.168.1.0/24	-
algo-subnet-private2-us-west-2a-ASG-OTL11	subnet-0ff0a5f5109825d	192.168.2.0/24	-
algo-subnet-private3-us-west-2a-ASG-OTL11	subnet-0ba08a17ff252b	192.168.3.0/24	-

rtb-009999fe5e70ee2a / algo-rt-private-us-west-2a-ASG-OTL7

Details

Main No Owner ID: 2270482913427

Explicit subnet associations: 3 subnets

Edge associations: -

Routes Subnet associations Edge associations Route propagation Tags

Explicit subnet associations (3)

Name	Subnet ID	IPv4 CDR	IPv6 CDR
algo-subnet-private1-us-west-2b-ASG-OTL7	subnet-0ed47a7dca14ec0	192.168.1.0/24	-
algo-subnet-private2-us-west-2b-ASG-OTL7	subnet-0ff0a5f5109825d	192.168.2.0/24	-
algo-subnet-private3-us-west-2b-ASG-OTL7	subnet-0ba08a17ff252b	192.168.3.0/24	-

rtb-009999fe5e70ee2a / algo-rt-private-us-west-2a-ASG-OTL7

Details

Main No Owner ID: 2270482913427

Explicit subnet associations: 3 subnets

Edge associations: -

Routes Subnet associations Edge associations Route propagation Tags

Explicit subnet associations (3)

Name	Subnet ID	IPv4 CDR	IPv6 CDR
algo-subnet-private1-us-west-2b-ASG-OTL7	subnet-0ed47a7dca14ec0	192.168.1.0/24	-
algo-subnet-private2-us-west-2b-ASG-OTL7	subnet-0ff0a5f5109825d	192.168.2.0/24	-
algo-subnet-private3-us-west-2b-ASG-OTL7	subnet-0ba08a17ff252b	192.168.3.0/24	-

After associating successfully, go to Outpost- LGW-rt, and you should see “propagated.”

lgw-rtb-00fc8ca84c141ba9

Details

Main No Owner ID: 2270482913427

Explicit subnet associations: 3 subnets

Edge associations: -

Routes

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	lgw-vrf-gpp-01b2085d9ef0f7f3	Active	No	Create Route
10.77.11.0/24	lgw-vrf-gpp-01b2085d9ef0f7f3	Active	No	Create Route Table
10.77.11.0/24	lgw-vrf-gpp-01b2085d9ef0f7f3	Active	No	Create Route
192.168.3.0/24	subnet-0be68aa17ff252b	Active	Propagated	static
192.168.1.0/24	subnet-0e2d8a817ff2524	Active	Propagated	static
192.168.2.0/24	subnet-0ff085398c5eb	Active	Propagated	static

lgw-rtb-07d2eb0deaf88456b

Details

Main No Owner ID: 326261899634

Explicit subnet associations: 3 subnets

Edge associations: -

Routes

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	lgw-vrf-gpp-047a605f252424db	Active	No	Create Route
10.77.3.0/24	lgw-vrf-gpp-047a605f252424db	Active	No	Create Route
10.77.3.0/24	lgw-vrf-gpp-047a605f252424db	Active	No	Create Route
192.168.4.0/24	lgw-vrf-gpp-047a605f252424db	Active	No	Create Route
192.168.5.0/24	subnet-0766b082705d4d1	Active	No	Create Route
192.168.6.0/24	subnet-0935a5ab040c598	Active	No	Create Route
192.168.6.0/24	subnet-0ff085398c5eb	Active	Propagated	static

 To test the connection, we will create 2 EC2 instances and ping each other

Testing Connections

1. EC2 in Public Subnets:

- Create 2 EC2 instances across outposts.
- Use **ping** to test the connection.

- Errors you might encounter:

- Create **2 Security Groups (SG)** in Outpost, allowing:
 - **SSH**
 - **ICMP**
 - Supported EBS: **gpt2**
 - Supported Instance Types: **C5d.xlarge, C5.xlarge**



Example

- Public- us-west-2a (OTL11)
EC2



Example

**Private-
EC2**

us-west-2b (OTL7)

Example

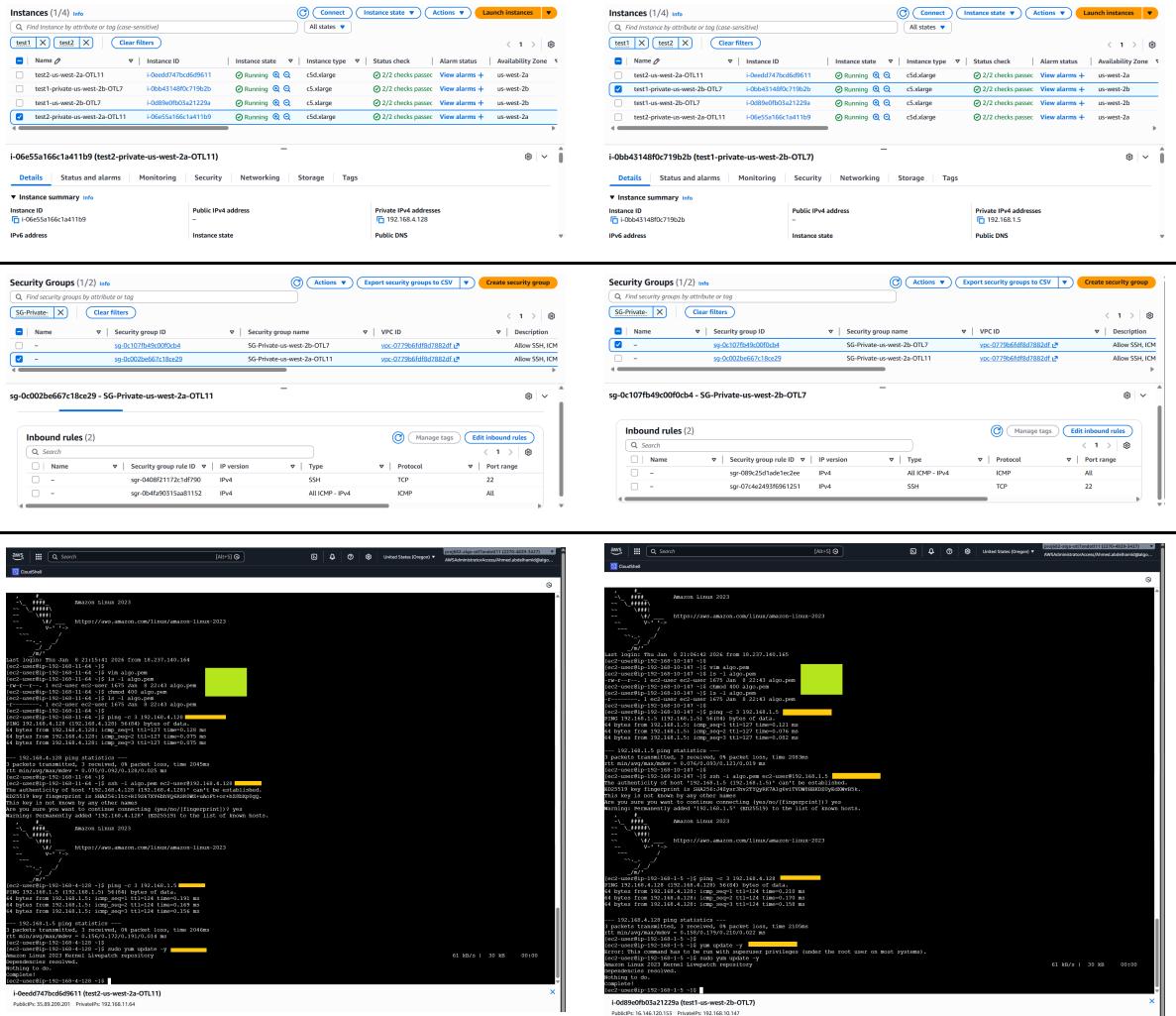
**Private-
EC2**

us-west-2b (OTL7)

EC2 Private Instance Output:

A circular icon containing a padlock and a key, representing security or access control.

Test Ping:



 **Final Steps**

Both **Outposts** can successfully communicate. This configuration ensures reliable connection and meets the requirements for deploying instances in AWS Outposts.

For further information, refer to the official AWS documentation: [AWS Outposts Launch Instances Guide](#)