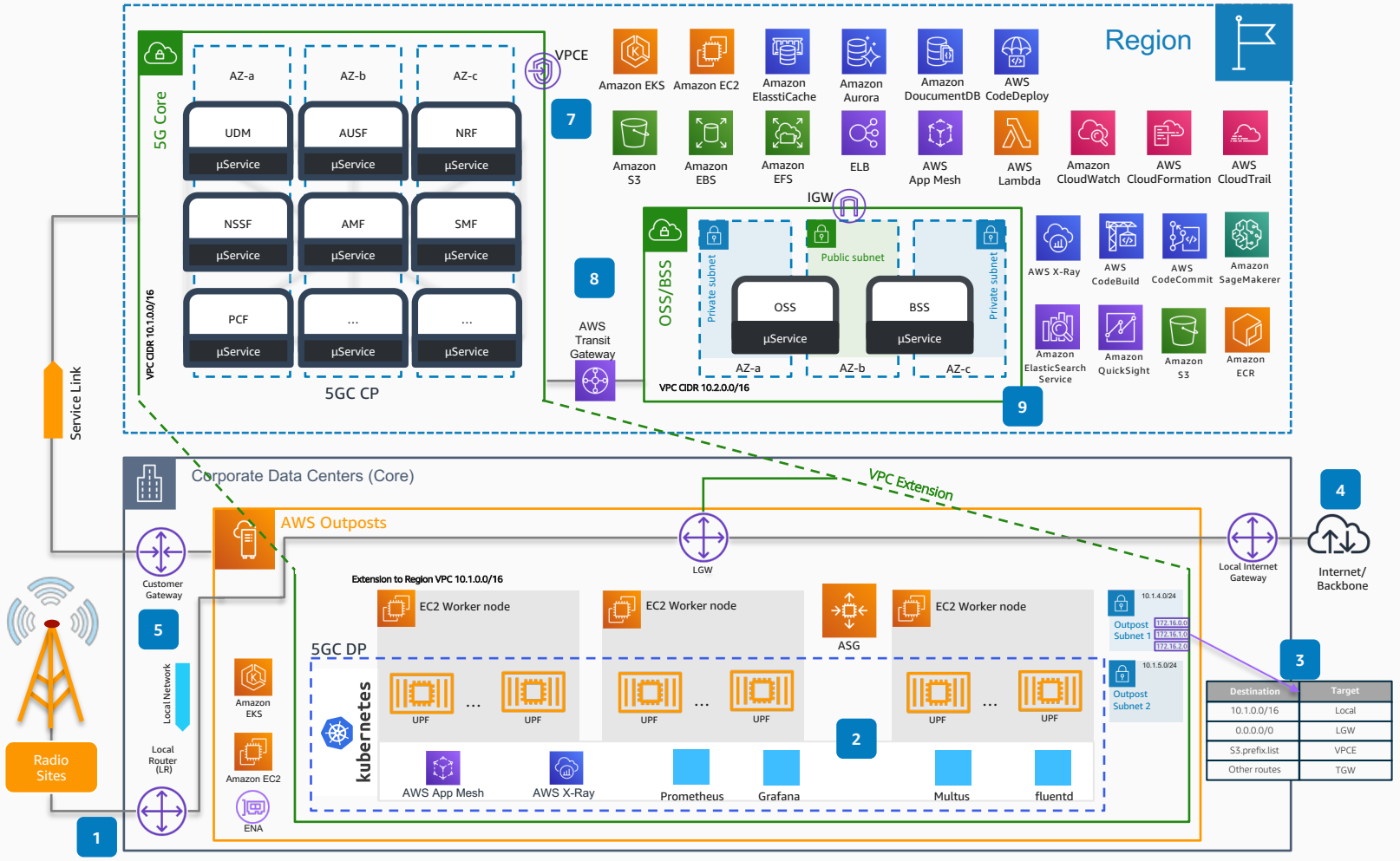
Deploying 5G Core on AWS

Distribute your 5G Core to on-premises data centers

This reference architecture explains how 5G Core can be distributed between on-premises data centers and AWS Regions.



1. Subscriber's traffic from radio access network (RAN) ingress/egress **AWS Outposts** running 5G User Plane Function (UPF) via **Outposts** Local Gateway (LGW) .
2. UPF instances are containers running on **Amazon Elastic Kubernetes Service (Amazon EKS)** with access to multiple network interfaces via AWS Multi-homing support and Multus.
3. **Outposts** has two subnets (for ingress and egress) with routing tables that contains paths to service end points and **Transit Gateway** to other virtual private clouds (VPCs).
4. Internet access to mobile subscribers is achieved via local gateway as a default route in the subnet route tables.
5. Service Link traffic in outpost get separated from local traffic via virtual LANS (VLANS), providing connectivity both locally and to AWS Regions.
6. **AWS Direct Connect** can be used to provide high throughput connection to VPC on an AWS Region (via public virtual interface).
7. The service end-point provides direct access to AWS regional services such as **Amazon Simple Storage Service (Amazon S3)** without traversing via internet.
8. **AWS Transit Gateway** is used to provide connectivity to other VPCs that performs 5G management and control services.
9. Orchestration, operational, and business support systems can run on AWS Regions with direct connectivity to on-premises data centers.

AWS Reference Architecture