**NAT Gateway vs. Internet Gateway in AWS**

Both **NAT Gateway** and **Internet Gateway** are used for network communication in AWS, but they serve different purposes.

| **Feature** | **NAT Gateway** | **Internet Gateway** |
| --- | --- | --- |
| **Purpose** | Allows private instances to access the internet securely for outbound traffic (e.g., downloading updates). | Provides public instances in a VPC with internet access (both inbound and outbound). |
| **Direction** | Outbound only | Both inbound and outbound |
| **Public IP** | Uses an Elastic IP (EIP) | Directly associated with public IP addresses of instances |
| **Usage** | Used by private subnets to access the internet without exposing instances publicly | Used by public subnets to provide internet access to EC2 instances |
| **Security** | Private instances remain hidden from the internet | Public instances are reachable from the internet (requires security groups and route tables) |
| **Route Table Configuration** | Private subnet routes internet-bound traffic to NAT Gateway in a public subnet | Public subnet routes traffic through the Internet Gateway |
| **Cost** | Charged per hour + per GB of data processed | Free |

**When to Use What?**

* **Use NAT Gateway** when you have private instances that need to access the internet securely (e.g., downloading patches, updates).
* **Use Internet Gateway** when you need public-facing resources like web servers that require direct internet access.