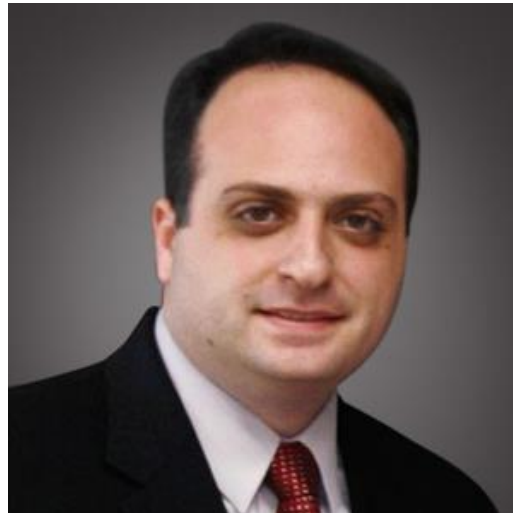


Understanding AWS Networking, CloudWatch and Auto Scaling



Elias Khnaser

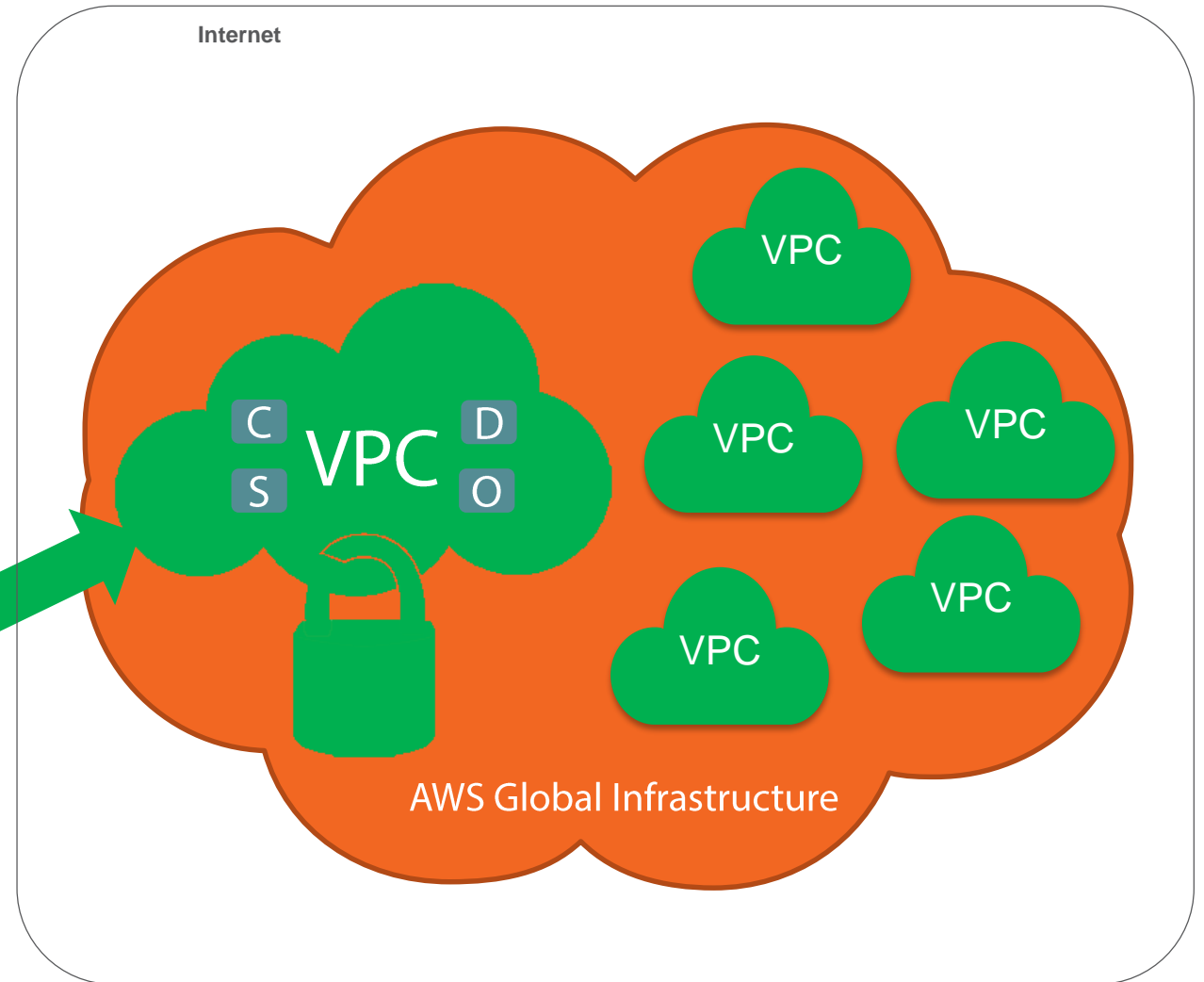
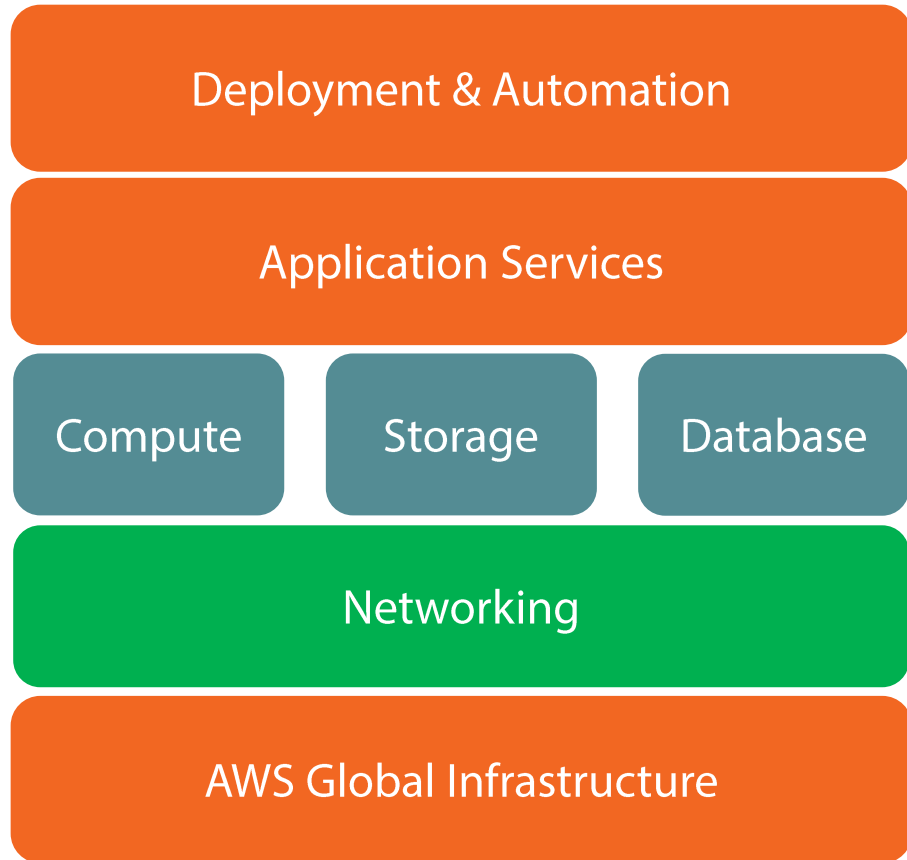
@ekhnaser | www.eliaskhnaser.com

Virtual Private Cloud (VPC)



- Logically isolated network in the AWS cloud
- Control of network architecture
- Enhanced security
- Interconnect with other organizations
- Elastic IP Address (public IPs)
- Enable hybrid cloud (site-to-site VPN)
- VPC cost = \$0
- VPN cost is \$0.05/hr

AWS Reference Model



VPC Access

Gateway

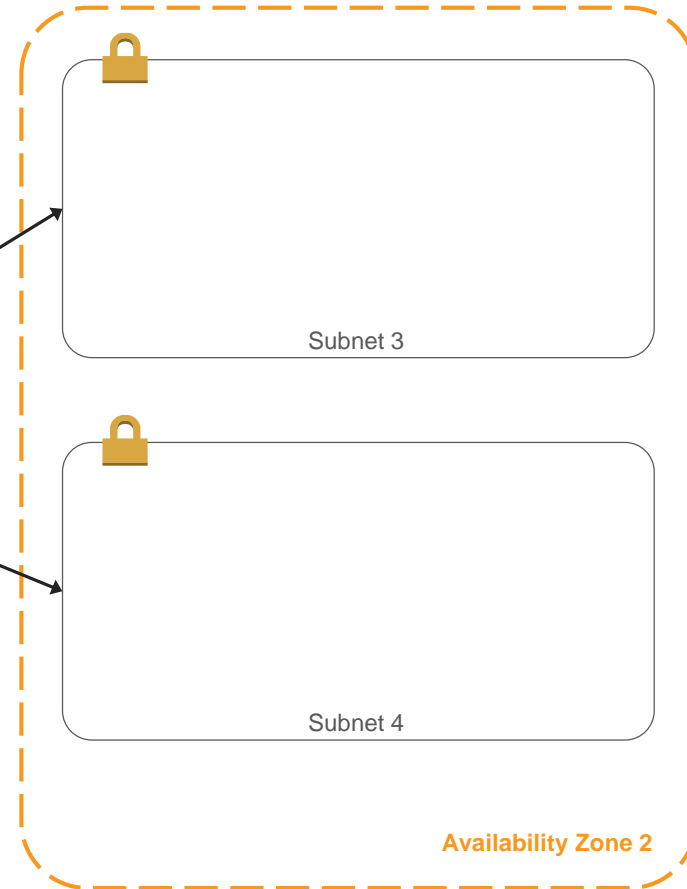
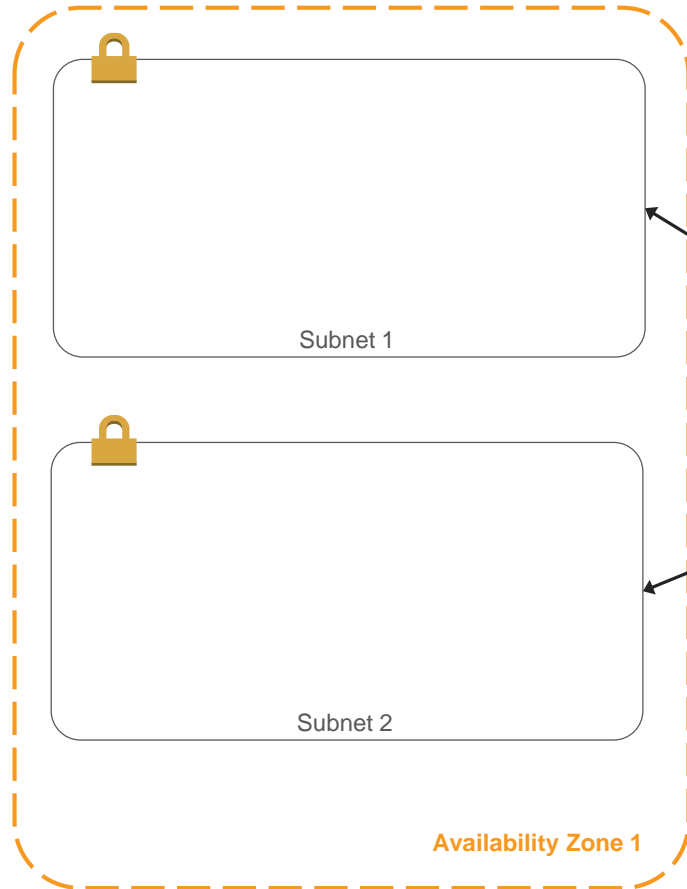
- Internet Gateway (IGW)
 - Ingress and egress
- Virtual Private Gateway (VPG)
 - AWS side of secure VPN
- Customer Gateway (CG)
 - Customer side of secure VPN

VPN

- Direct Connect
 - Dedicated and isolated
 - No internet
 - HA connectivity supported
- Hardware-based VPN
 - On-premises to AWS over internet
 - HA connectivity supported
 - 3rd party brands supported

VPC

Region



VPC Network Security

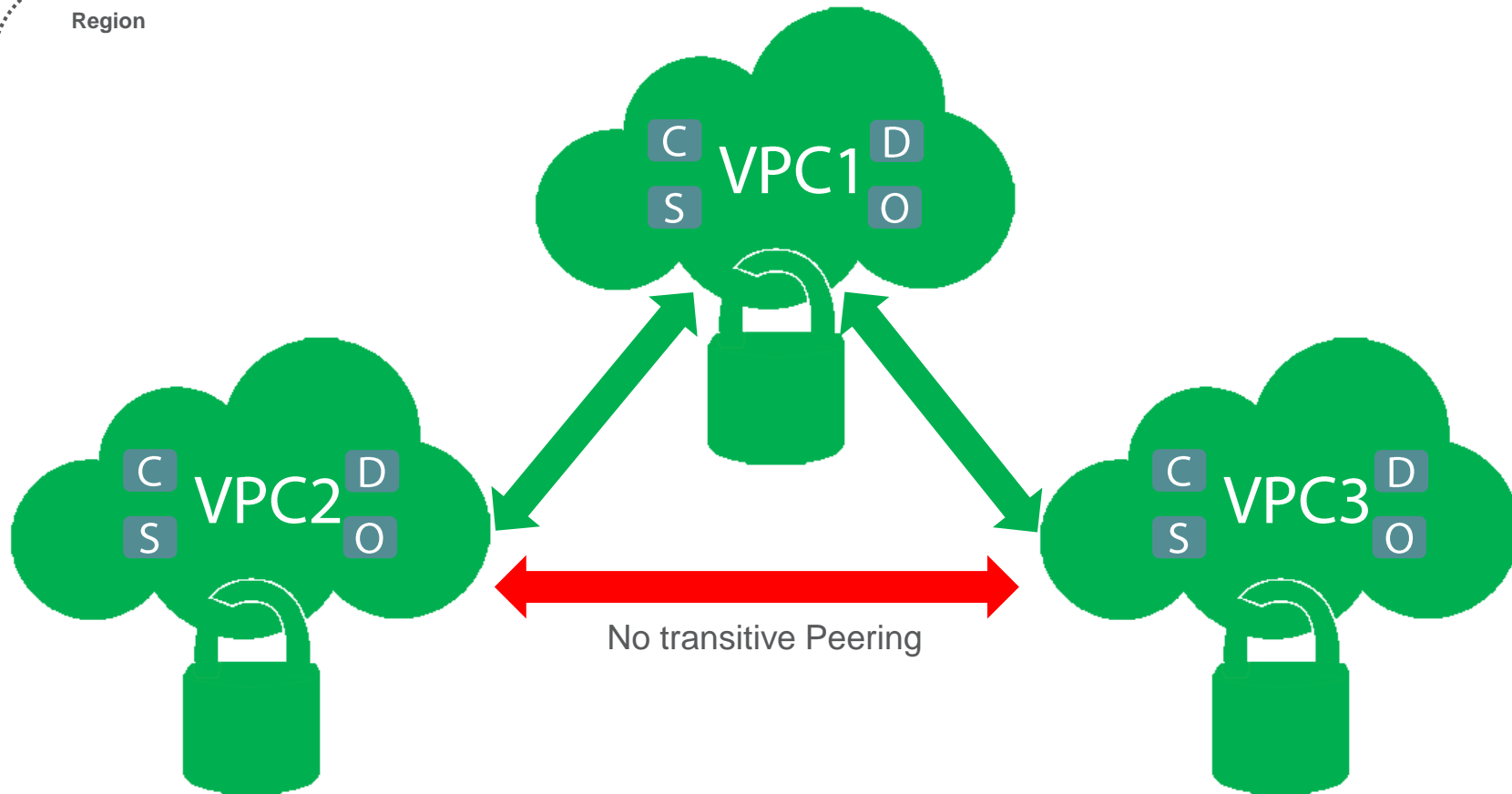
Security Groups

- Resource level traffic firewall
 - Instance, ELB, etc...
- Ingress and Egress
- Stateful
 - Return traffic allowed

Access Control Lists

- Source and Protocol filtering
- Subnet level traffic firewall
 - Separate inbound and outbound rule set
- Stateless
 - Traffic strictly filtered

Region

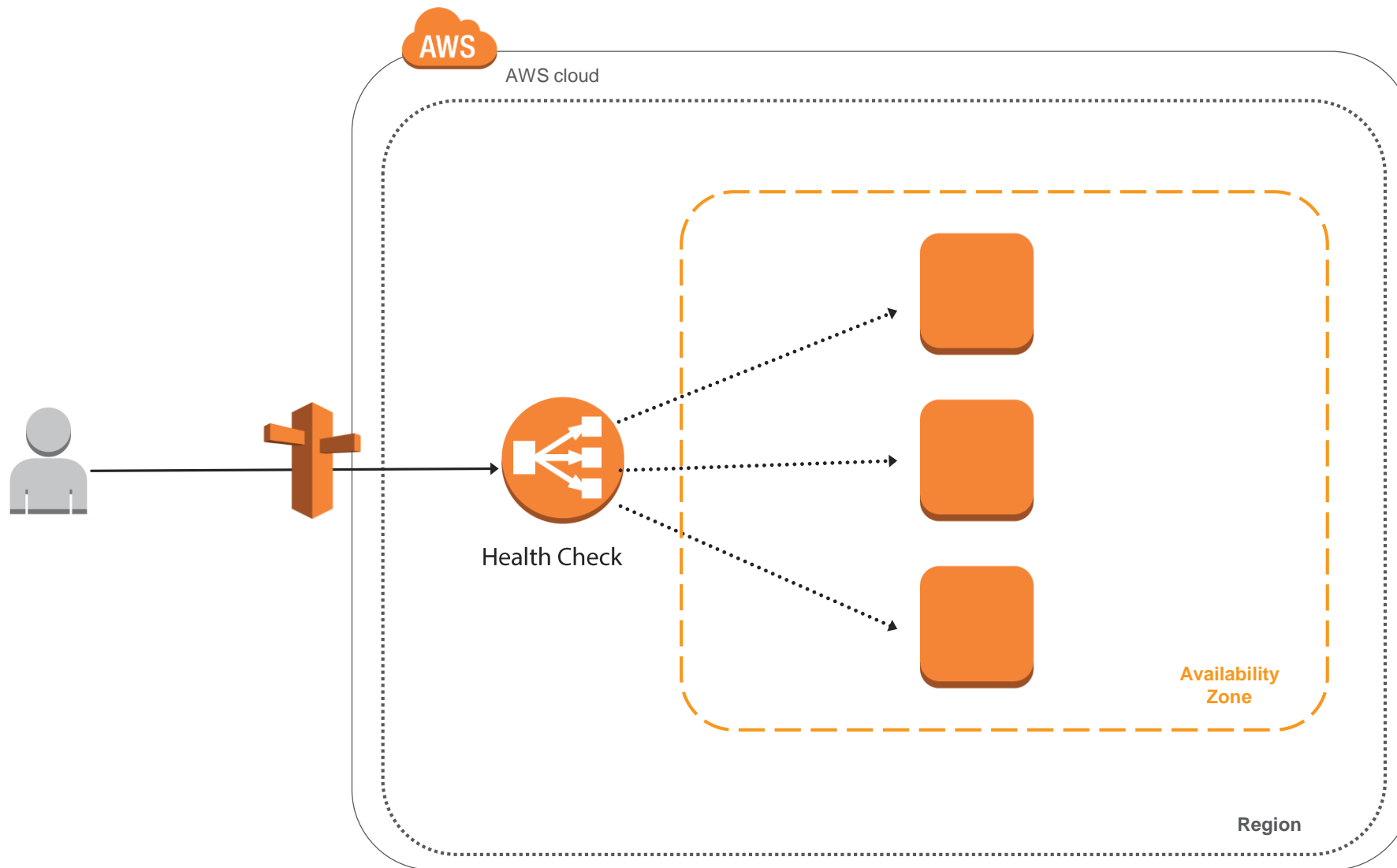


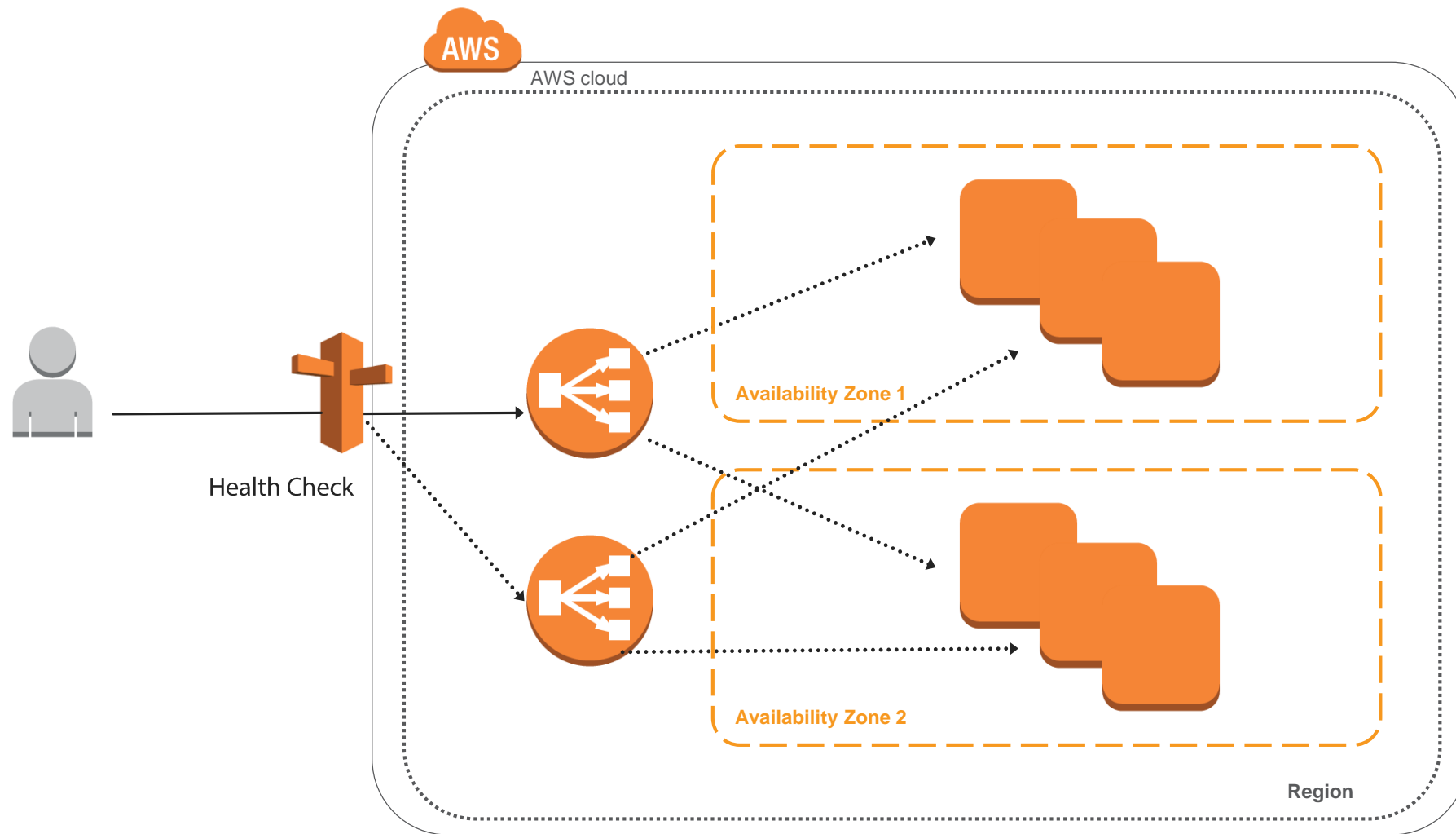
- Inter-VPC routing
- Same or different AWS account
- No overlapping network addresses

Elastic Load Balancing (ELB)



- Region wide load balancer
- Can be used internally or externally
- SSL Termination and processing
- ELB EC2 health checks
- Route 53 performs ELB health checks





Route 53



- DNS is crucial for any environment
- Worldwide distributed DNS
- Route 53 has a 100% SLA uptime
- Route 53 API
- Server health checks

AWS CloudWatch



- Basic monitoring (7 metrics, 5min)
- Detailed monitoring (10 alarms, 1 million API requests, 1min)
- Set alarms and alerts
- Notification via SES, SNS
- Custom Monitoring through API
- Integrate with Auto Scaling
- Mobile app for basic monitoring and management

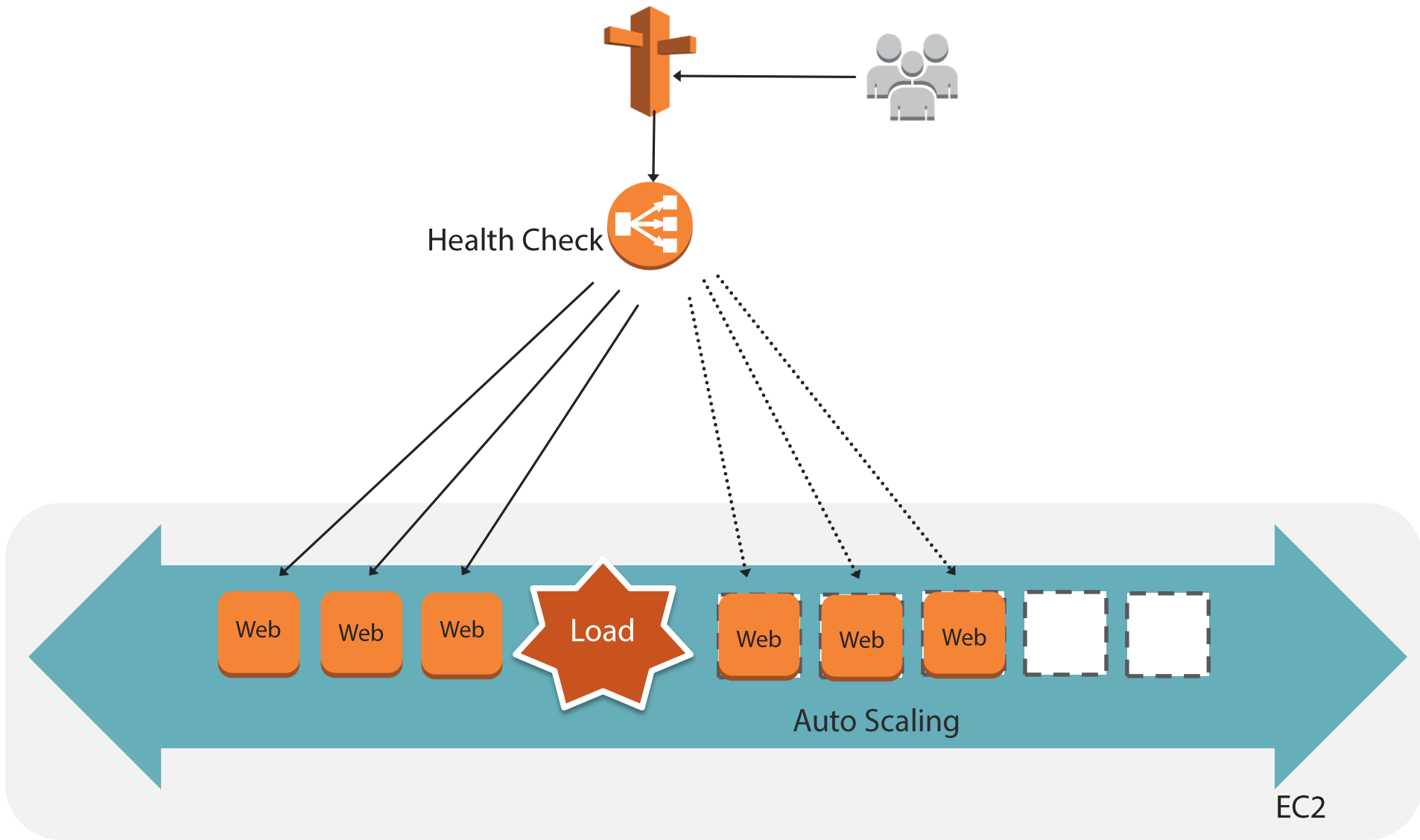
Auto Scaling

Expand or shrink
your EC2
instances on-
demand

CloudWatch or
manual schedule
configuration

Notifications

It's Free!



Summary



Virtual Private Cloud (VPC)

Elastic Load Balancing (ELB)

Route 53

AWS CloudWatch

Auto Scaling