

DAY 13: NAT GATEWAY, INTERNET GATEWAY, AND BASTION HOST

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WHAT IS AN INTERNET GATEWAY (IGW)?

Connects
VPC to
the
internet.

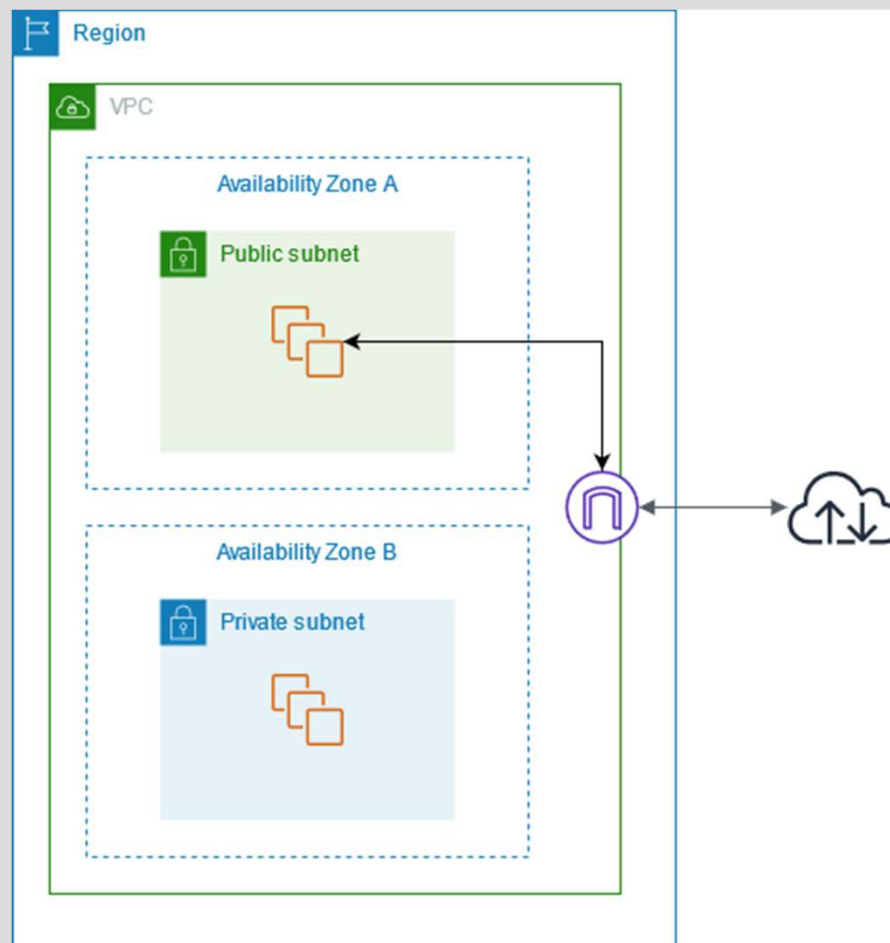
Handles
inbound
and
outbound
traffic.

Needed
for public
subnets.

Requires
public IP
on
instances.

Routing:
0.0.0.0/0
→ IGW

INTERNET GATEWAY - SIMPLE DIAGRAM



WHAT IS A NAT GATEWAY (NGW)?

Allows private instances to access internet outbound only.

Hides private IPs.

Deployed in a Public Subnet.

Requires an Elastic IP.



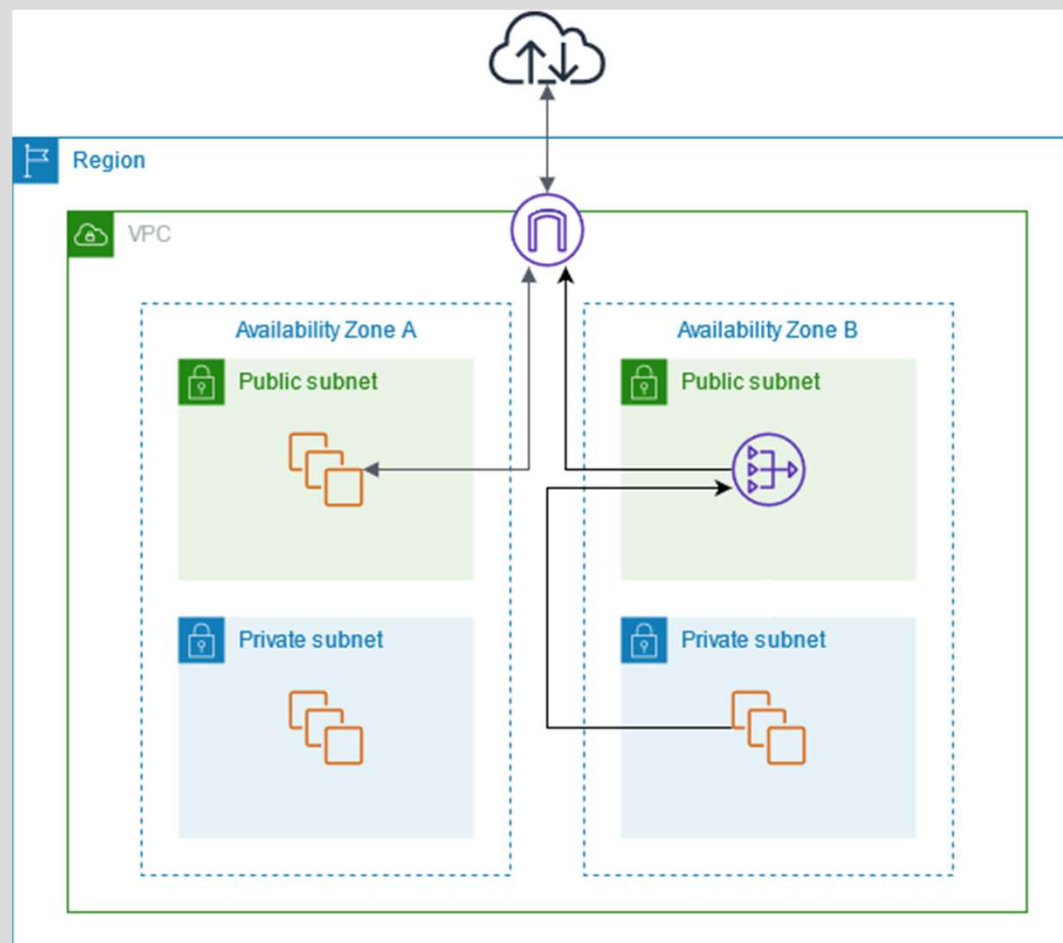
WHY NAT GATEWAY NEEDED?

IGW alone = public IP needed.

NAT Gateway = private EC2 can access internet safely.

No inbound access from internet.

NAT GATEWAY - SIMPLE DIAGRAM



NAT GATEWAY QUOTAS

Max 8
private IPs
on private
NAT GW.

Default: 2
Elastic IPs
for public
NAT GW.

Need
available
EIP to
create
Public NAT
GW.

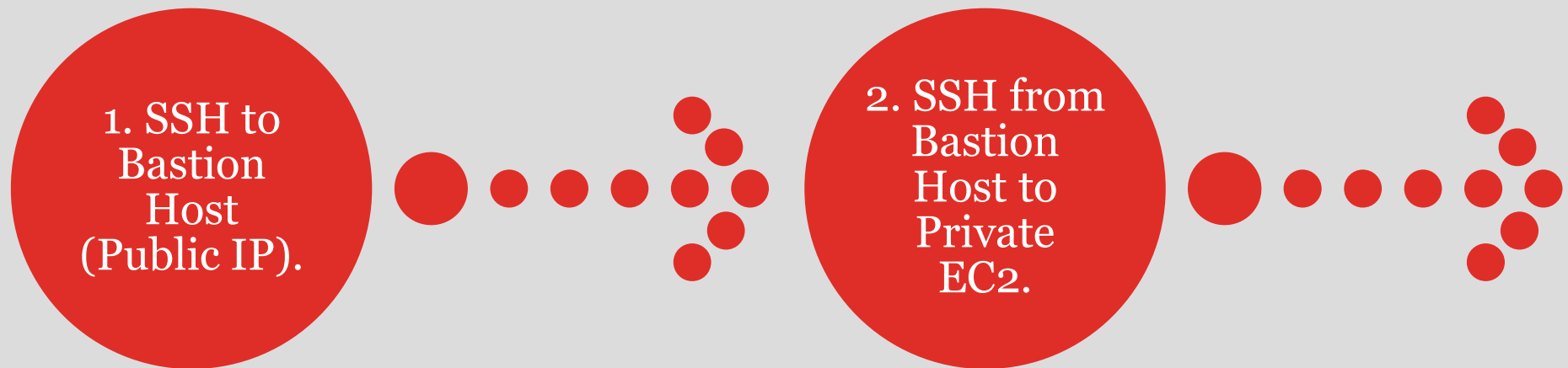
WHAT IS A BASTION HOST (JUMP BOX)?

EC2 in
Public
Subnet.

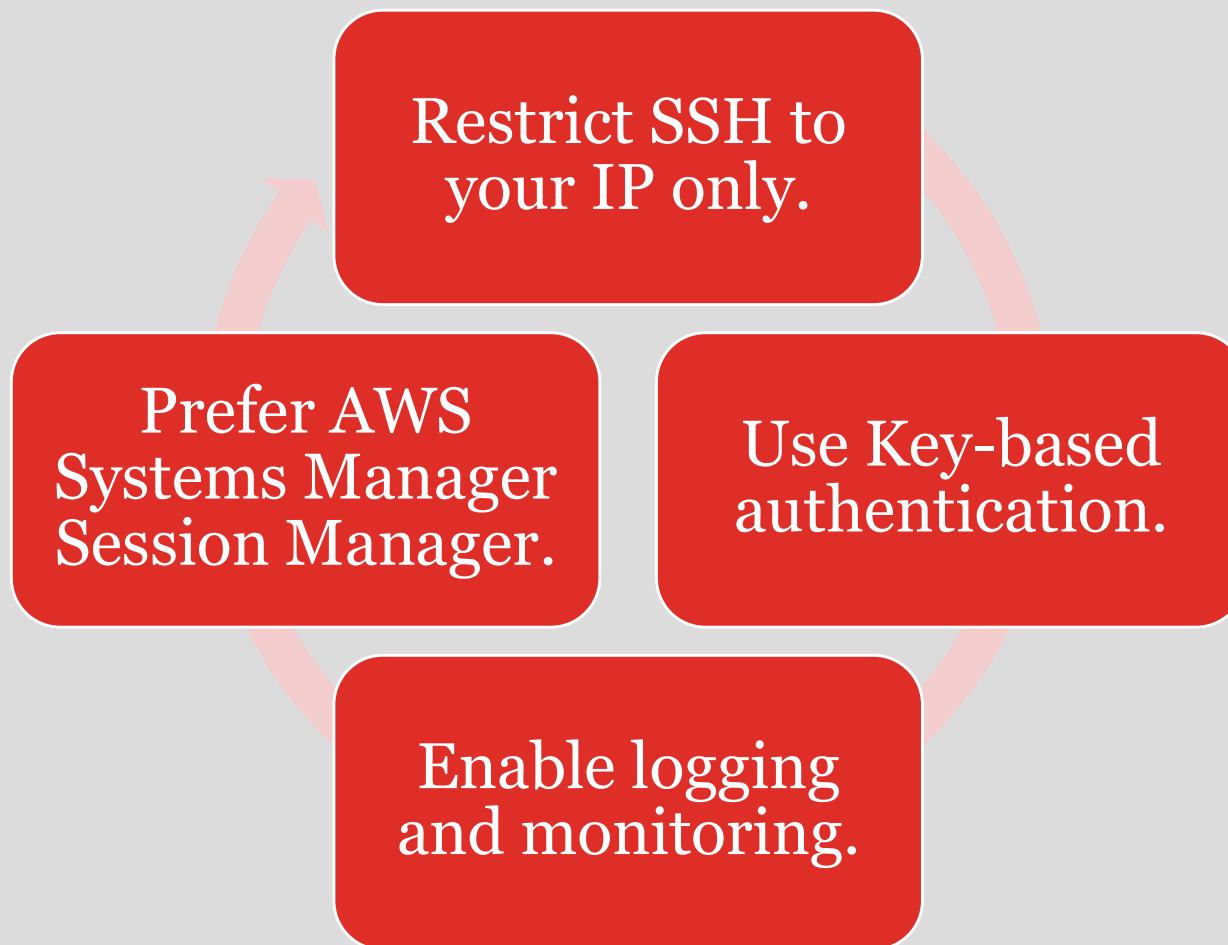
Secure
SSH/RDP
access to
Private
Subnets.

Acts as a
gatekeeper.

BASTION HOST - HOW IT WORKS



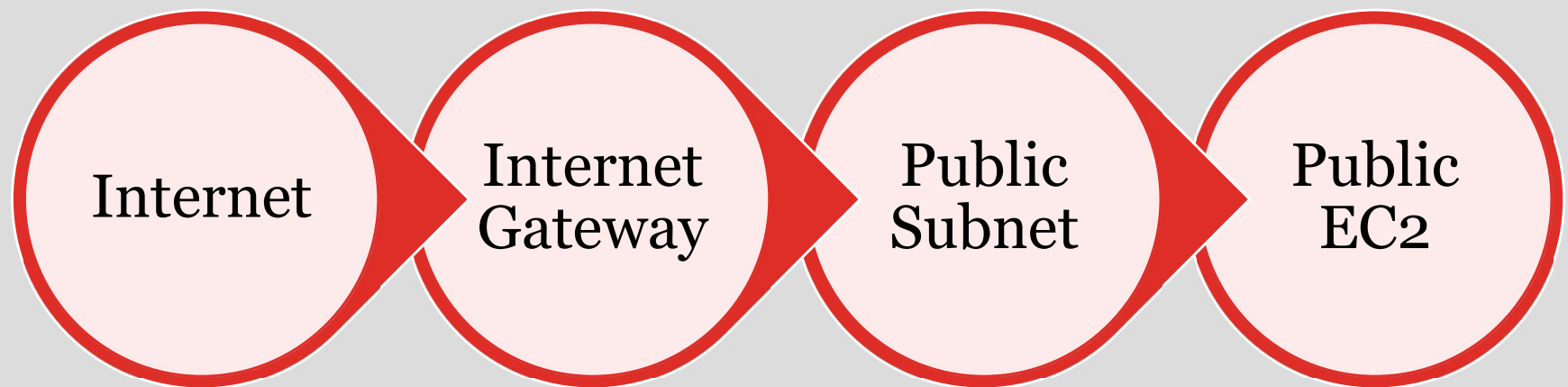
SECURITY TIPS FOR BASTION HOST



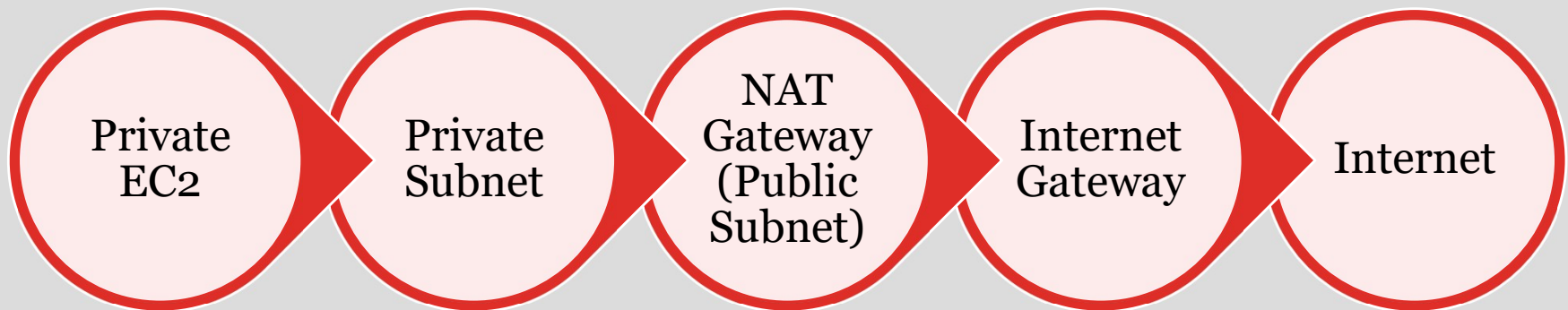
DIFFERENCE: INTERNET GATEWAY VS NAT

Feature	Internet Gateway	NAT Gateway
Purpose	Inbound + Outbound	Outbound Only
Placement	Attached to VPC	In Public Subnet
Needs Public IP?	Yes	No
Supports Inbound?	Yes	No

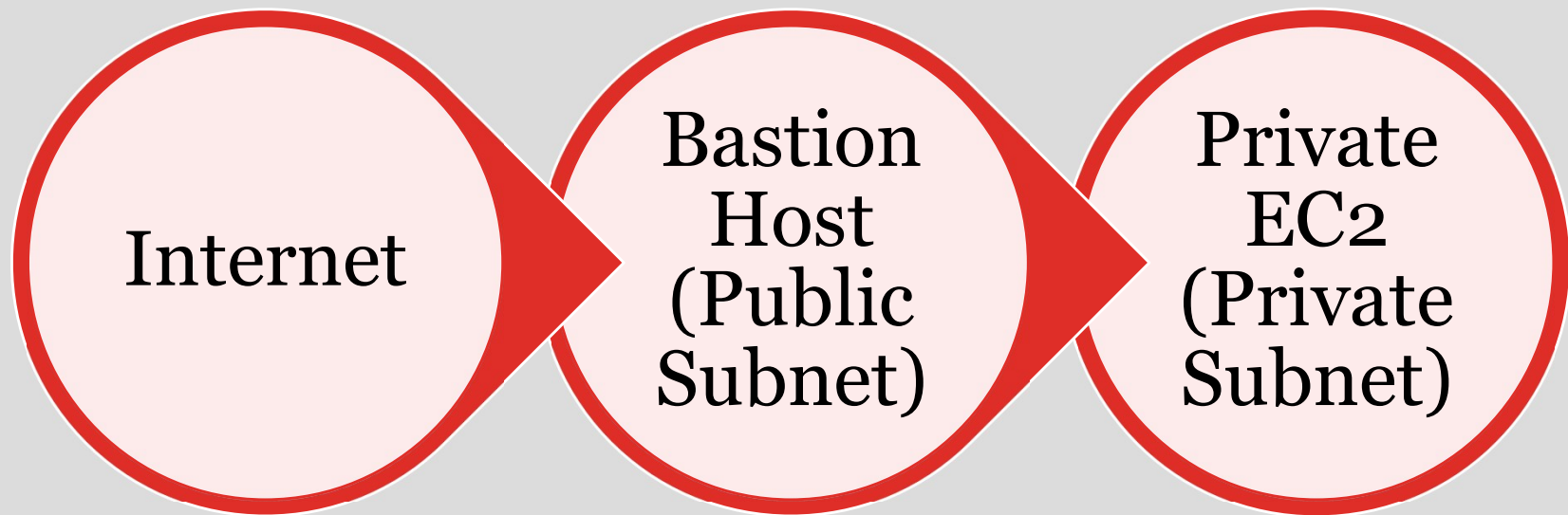
PUBLIC EC₂ ACCESS VIA INTERNET GATEWAY



PRIVATE EC₂ ACCESS VIA NAT GATEWAY



SSH INTO PRIVATE EC₂ VIA BASTION HOST



SUMMARY

Internet
Gateway:
Full internet
access for
public EC2.

NAT
Gateway:
Outbound
internet
access for
private EC2.

Bastion
Host:
Secure
access to
private EC2.

LAB IDEA FOR STUDENTS

Create VPC (Public + Private Subnet).



Launch NAT Gateway.



Deploy Bastion Host.



SSH into private EC2 via Bastion Host.



Observe traffic behavior.

