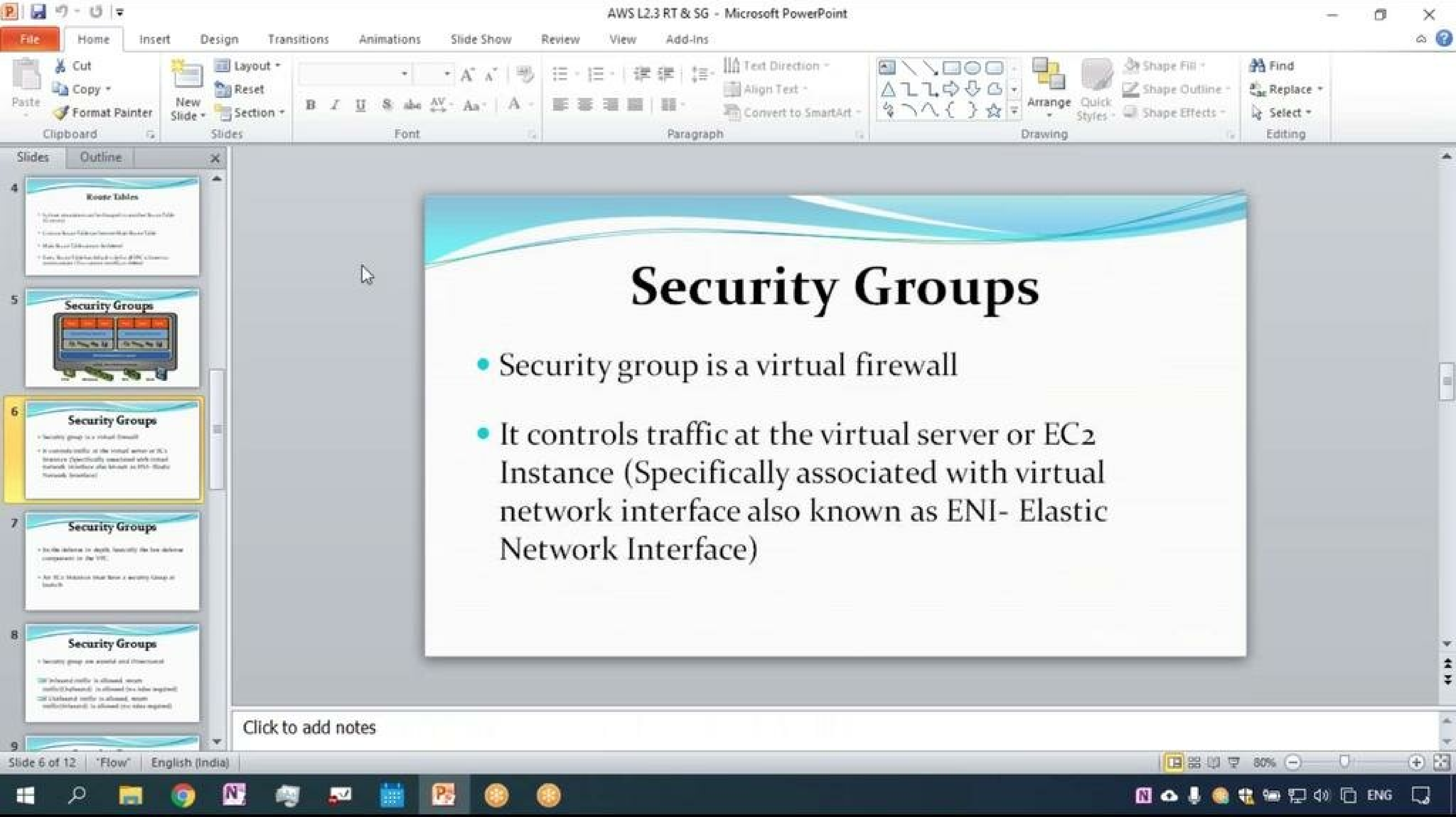
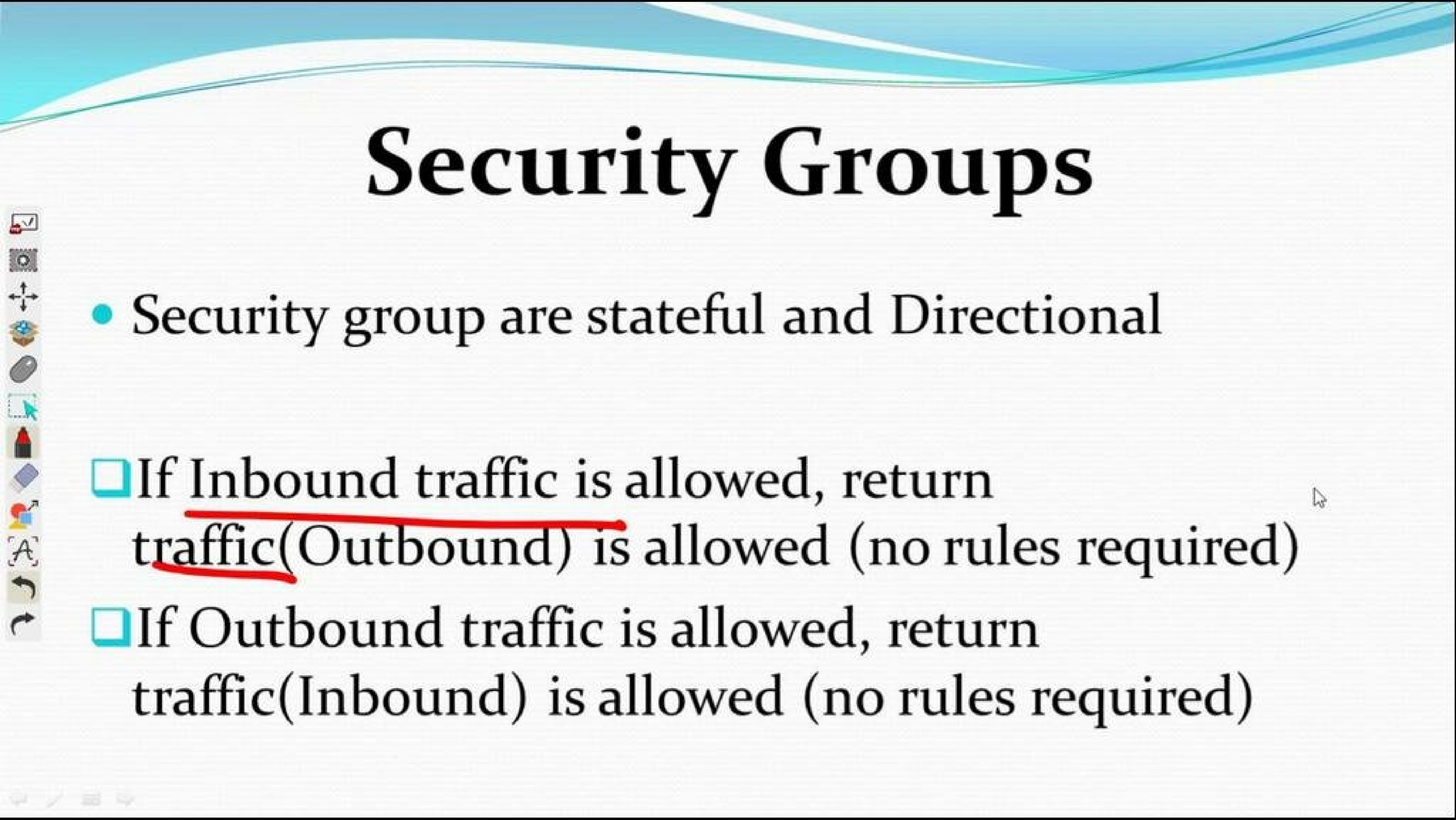


Security Groups

- Security group is a virtual firewall
- It controls traffic at the virtual server or EC2 Instance (Specifically associated with virtual network interface also known as ENI- Elastic Network Interface)

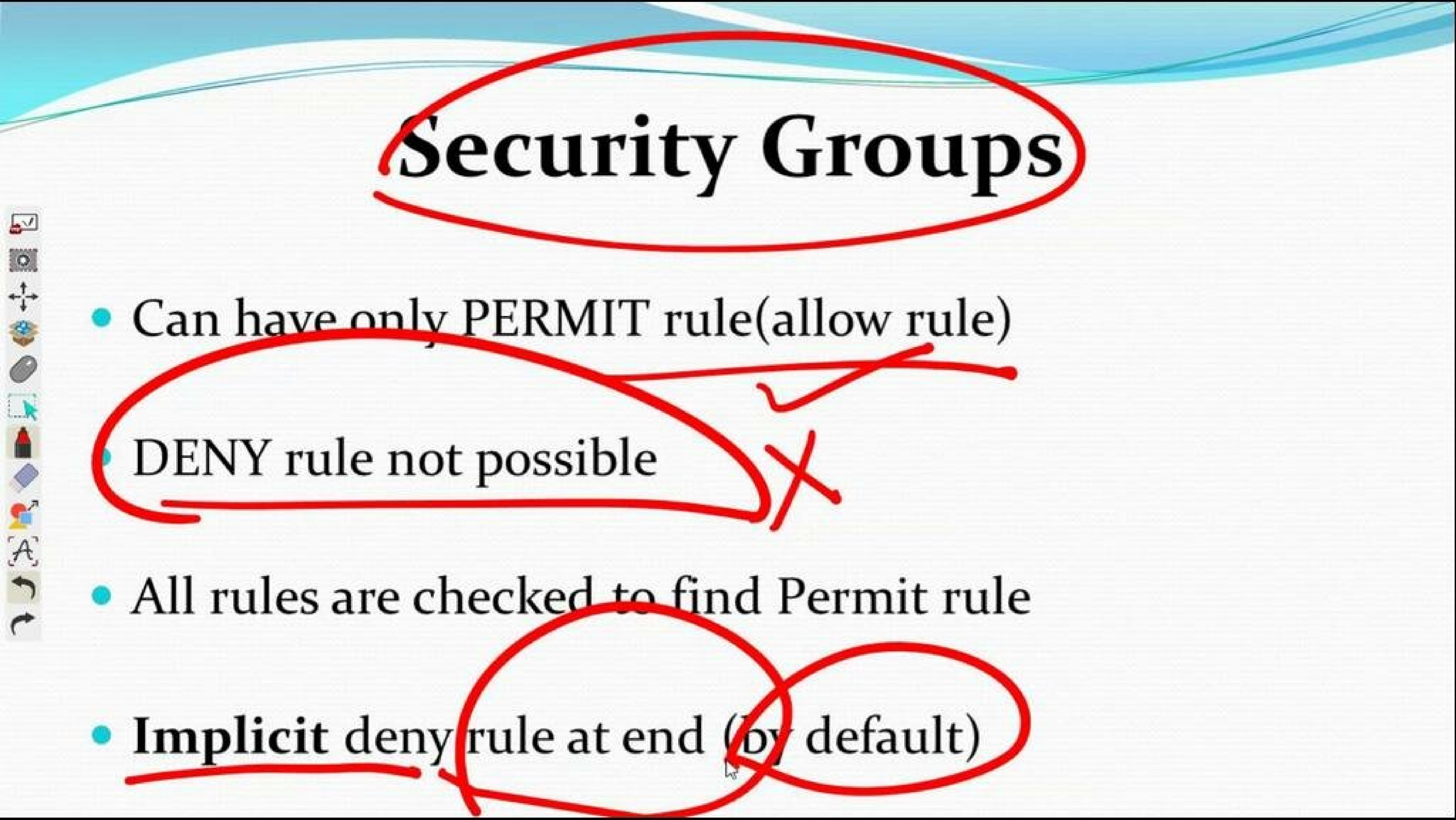


Security Groups

- Security group are stateful and Directional

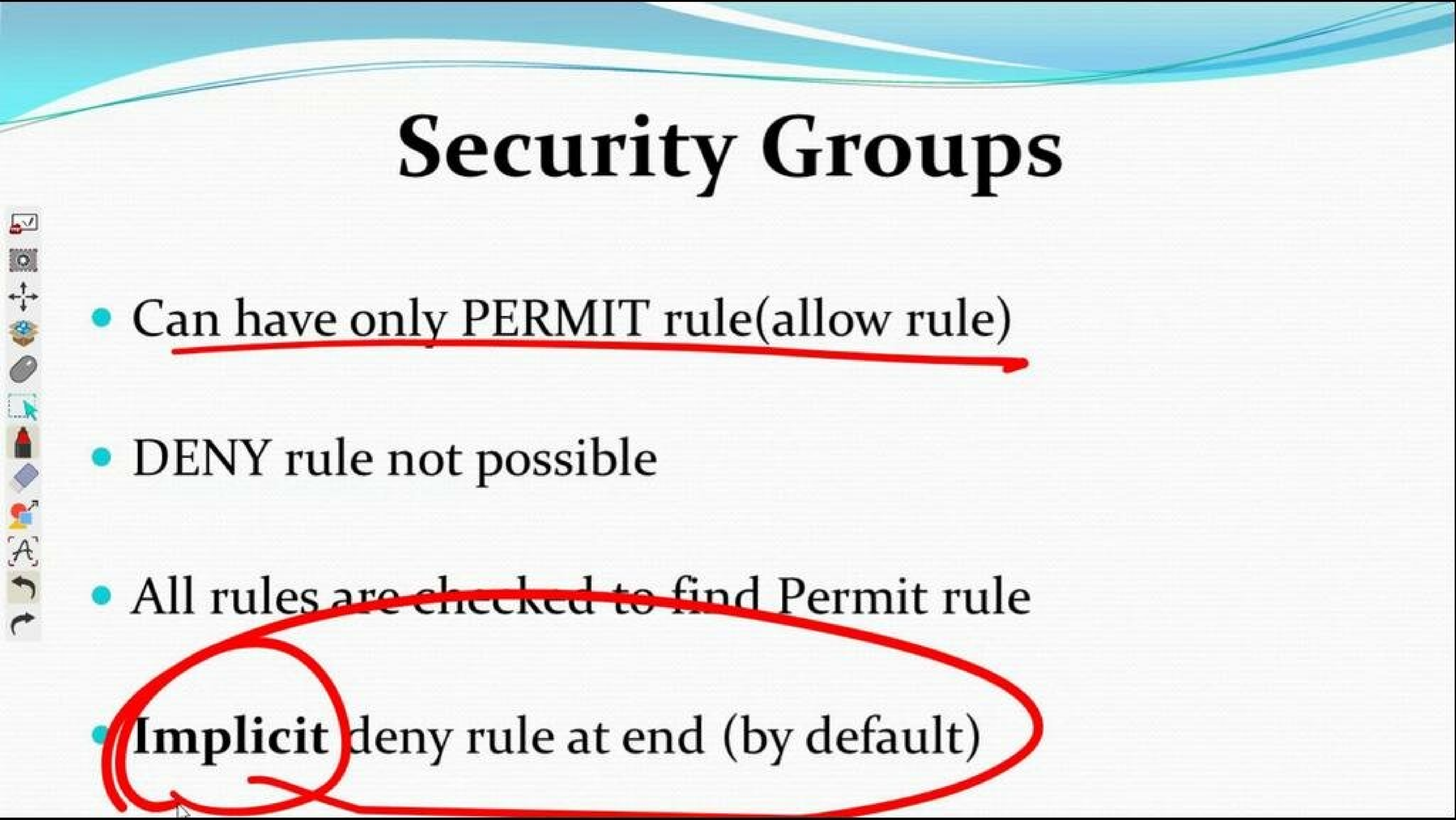
□ If Inbound traffic is allowed, return traffic(Outbound) is allowed (no rules required)

□ If Outbound traffic is allowed, return traffic(Inbound) is allowed (no rules required)



Security Groups

- Can have only PERMIT rule(allow rule) ✓
- DENY rule not possible ✗
- All rules are checked to find Permit rule
- **Implicit** deny rule at end (by default)



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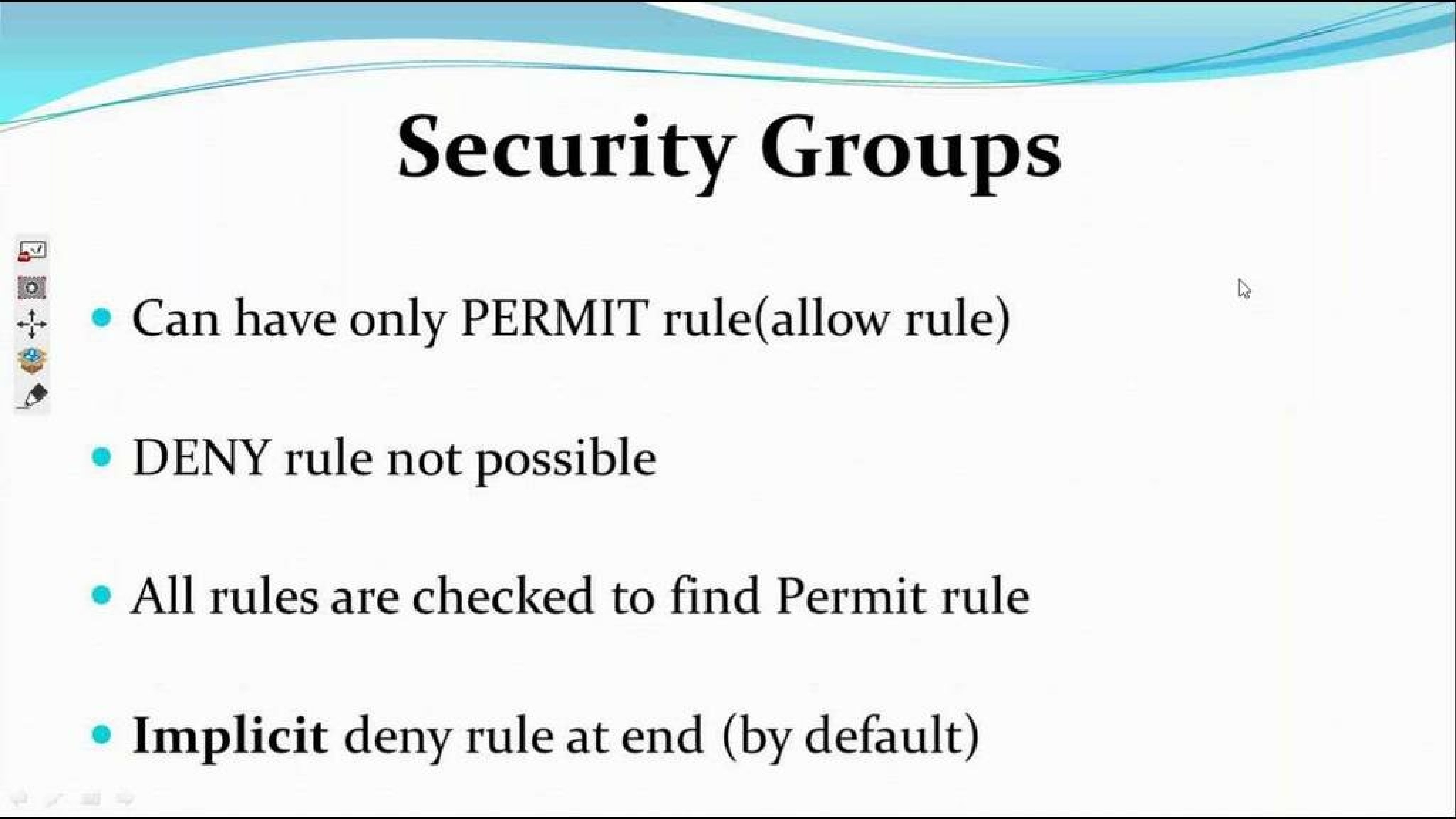

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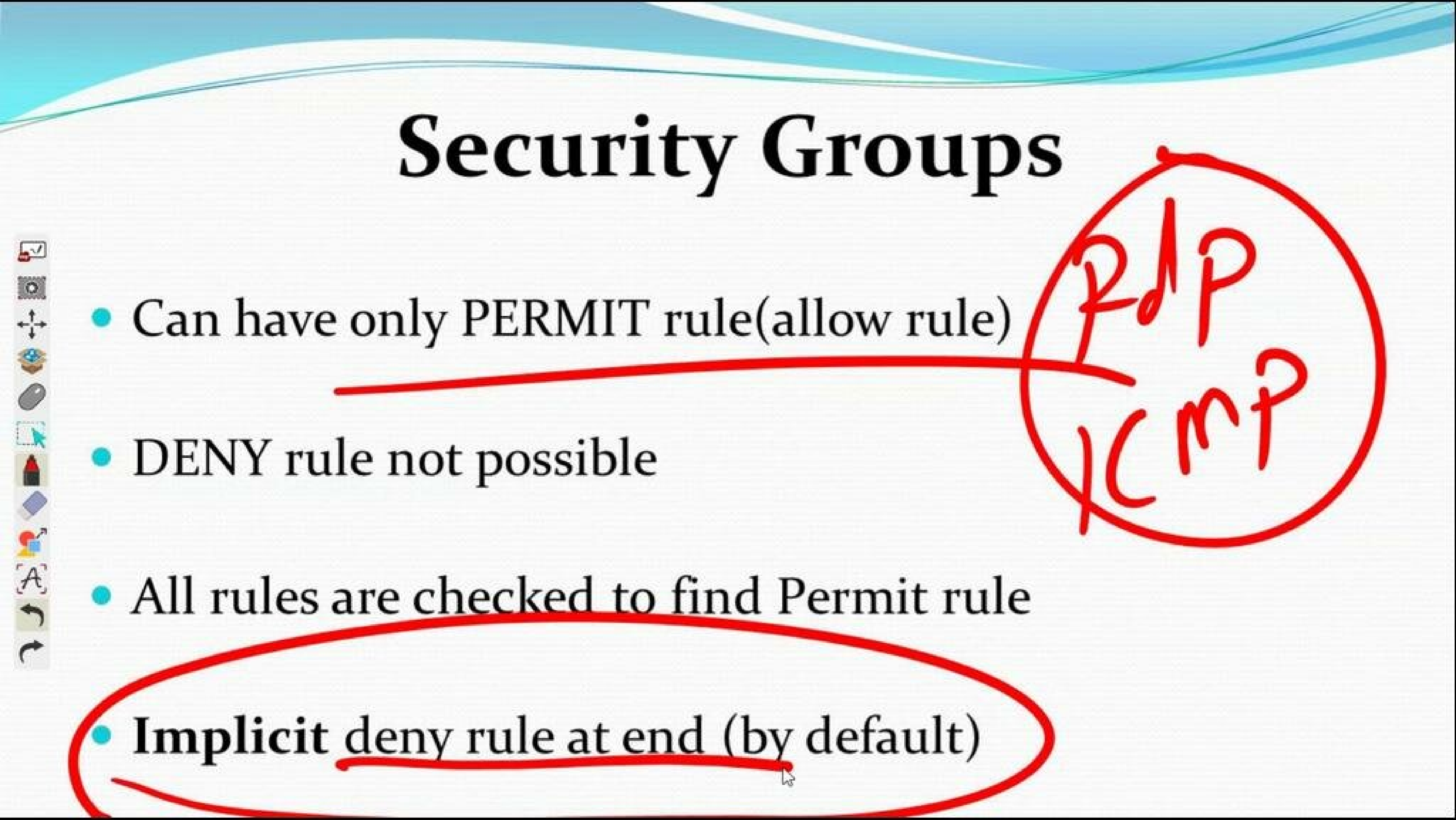

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RDP
ICMP

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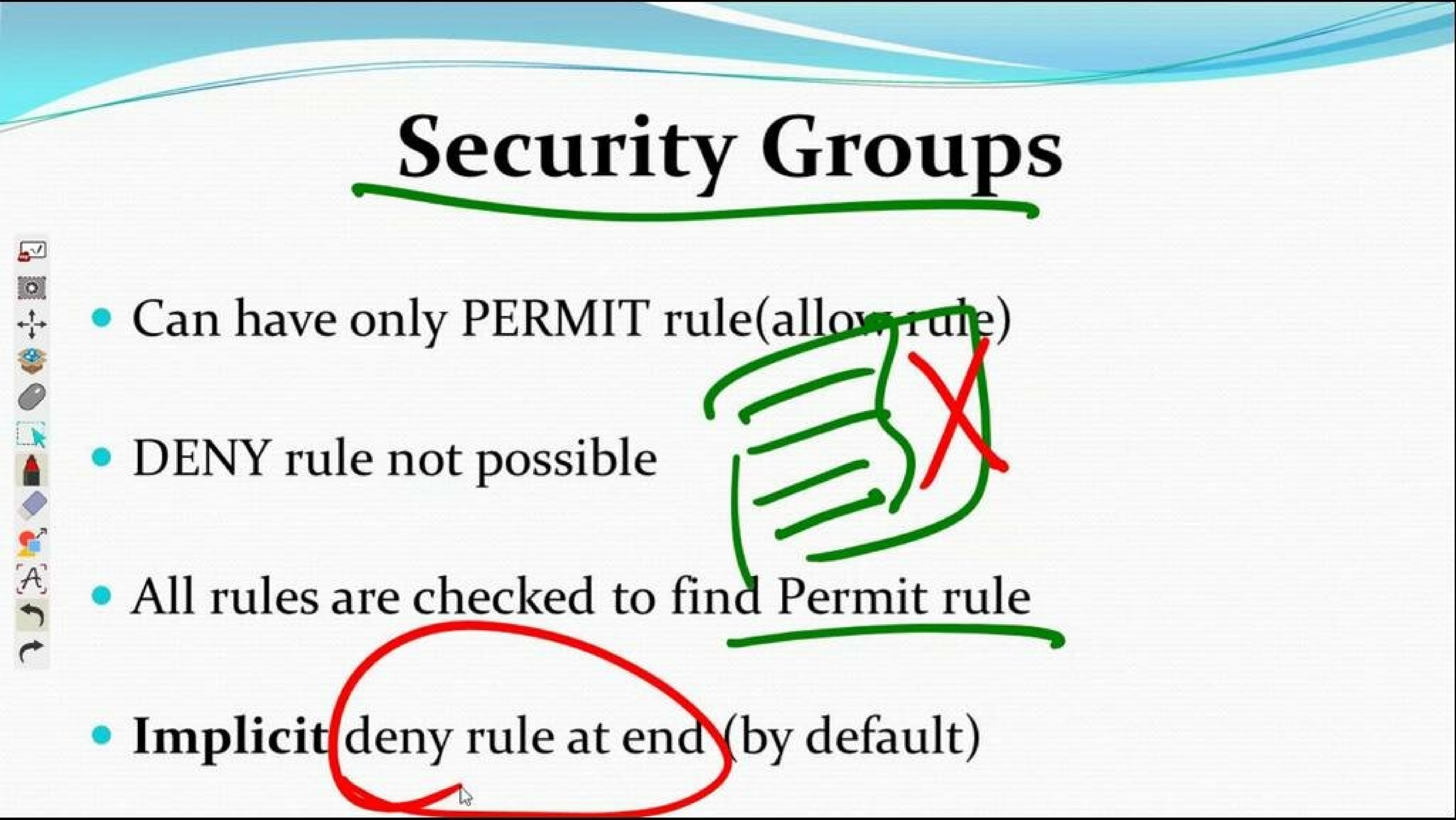

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- Inbound rules allows Mutiple EC2 instance assigned to same security group talk to each other
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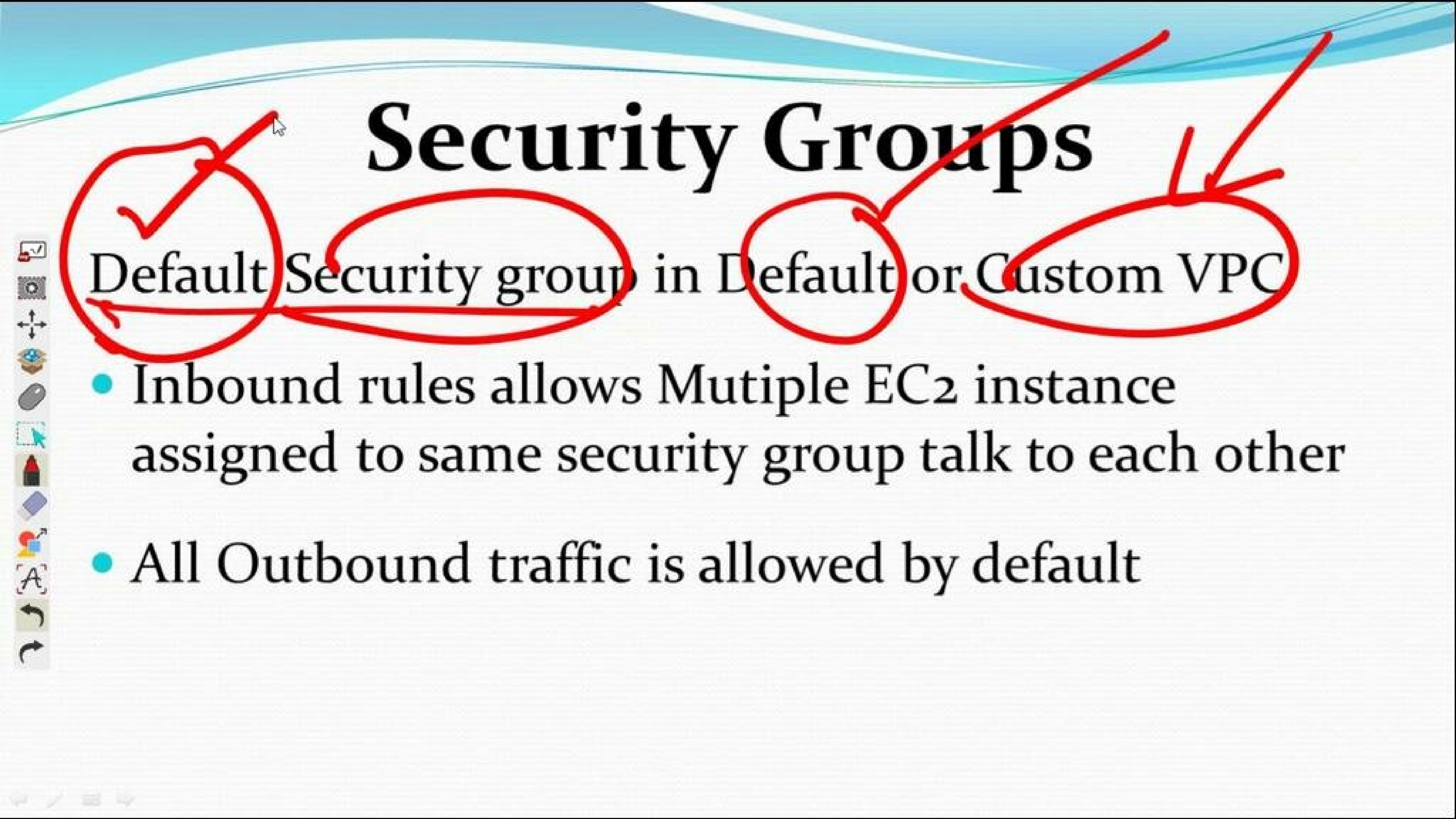

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A1 11 SG

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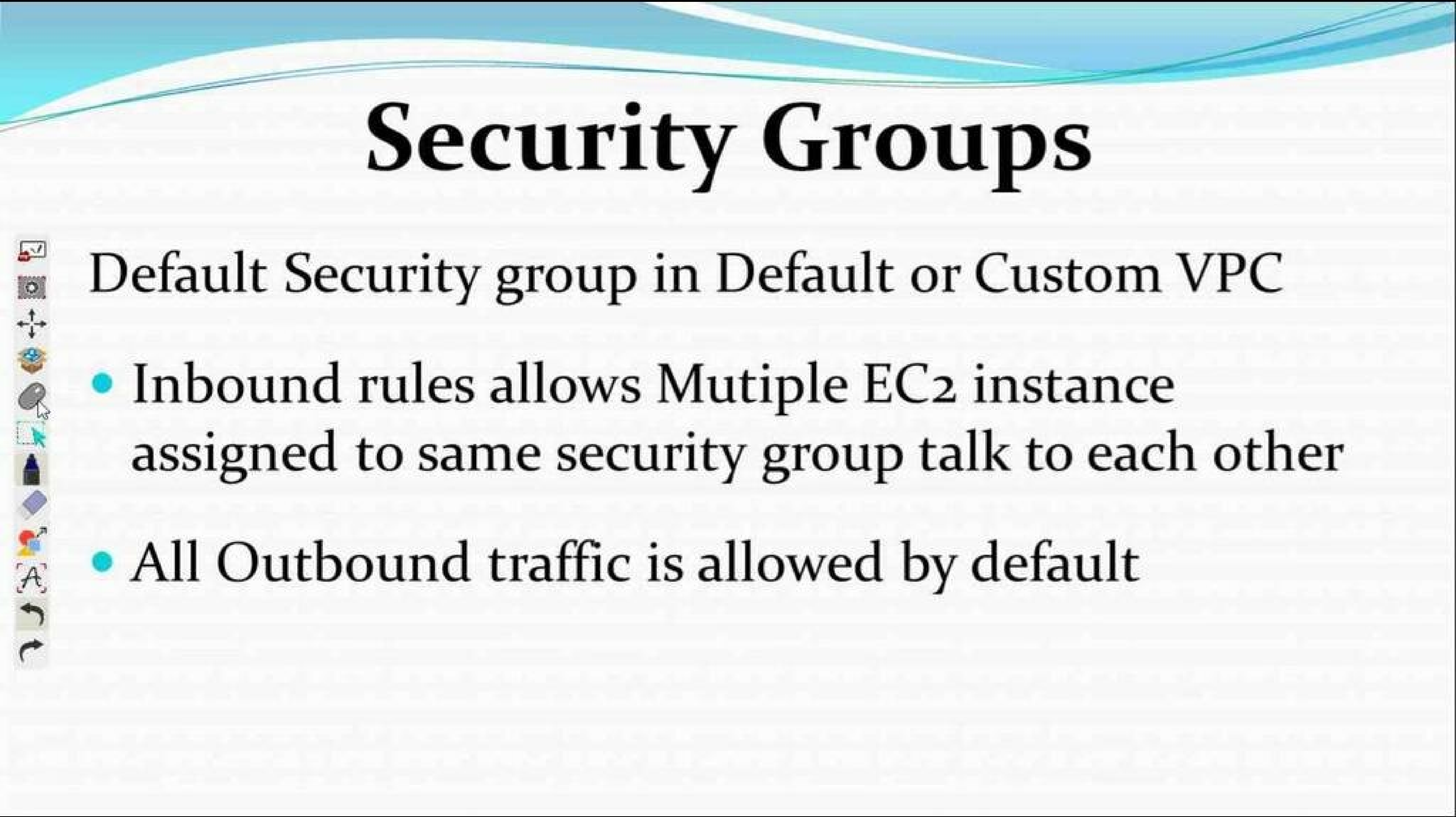

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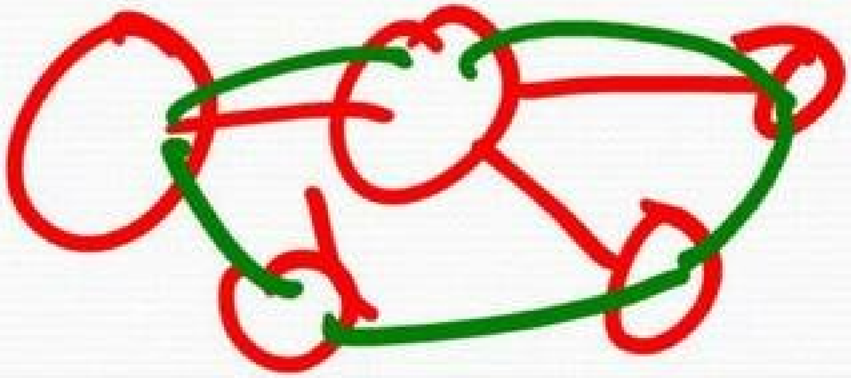

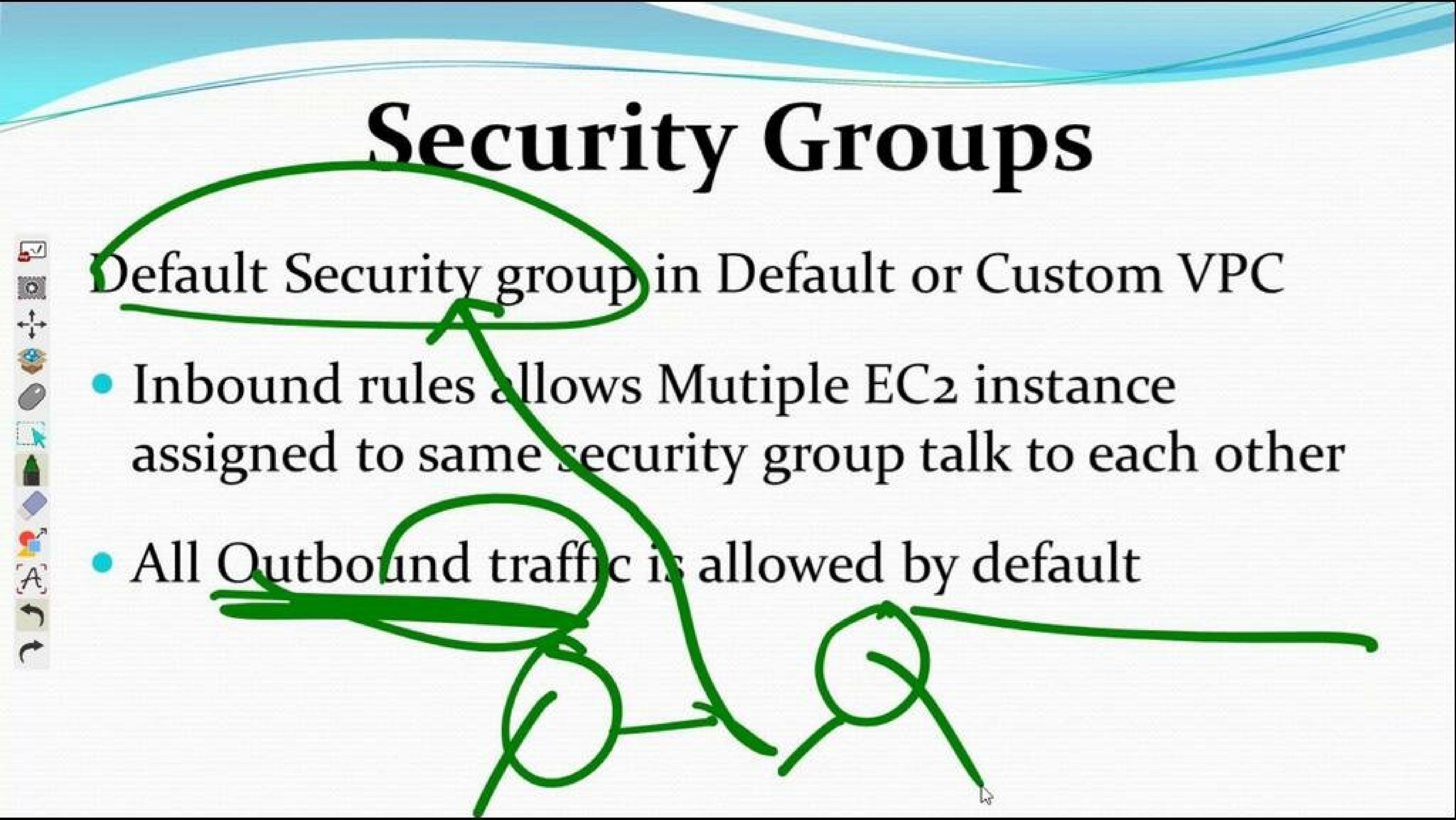

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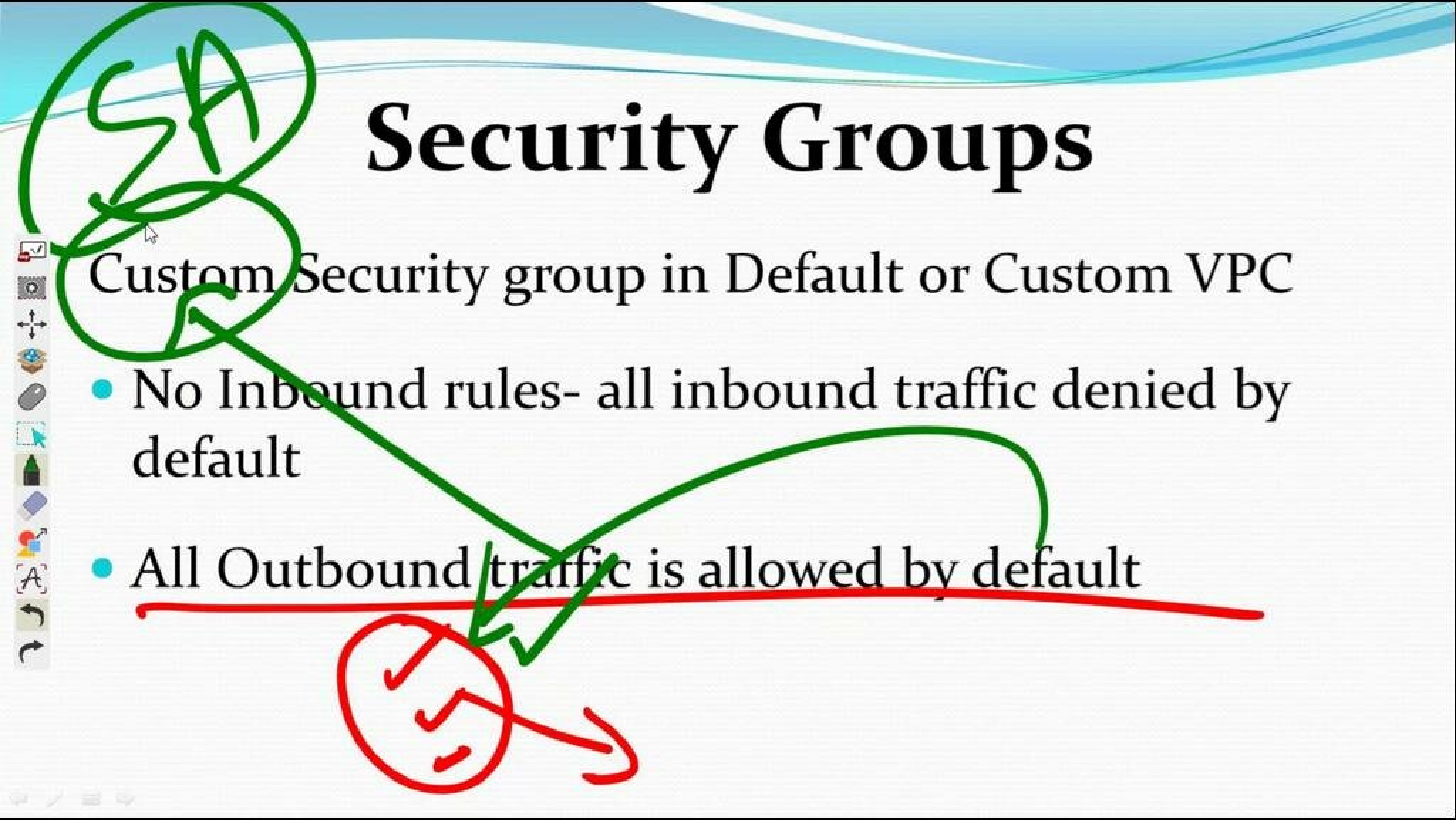

SA

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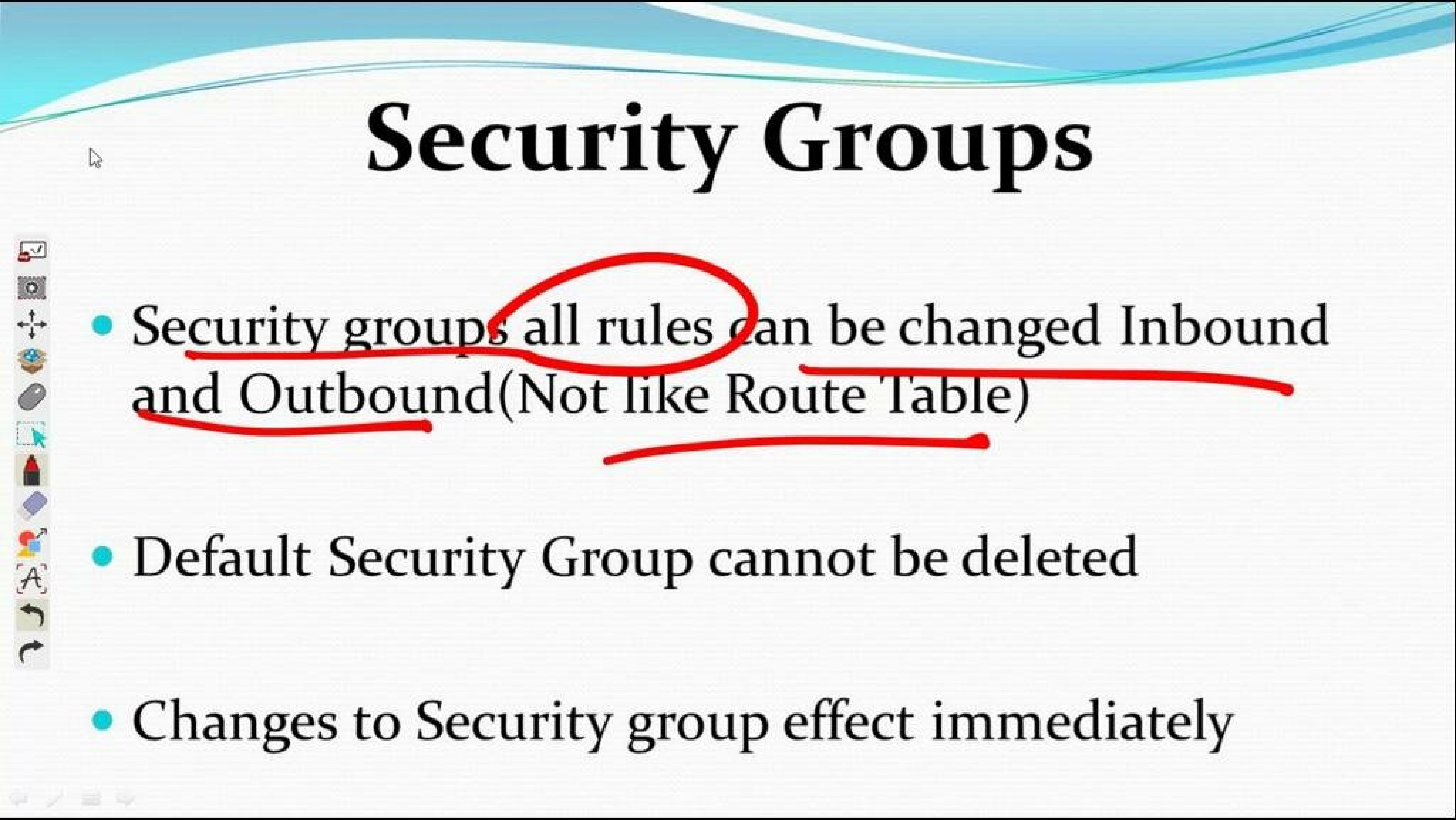

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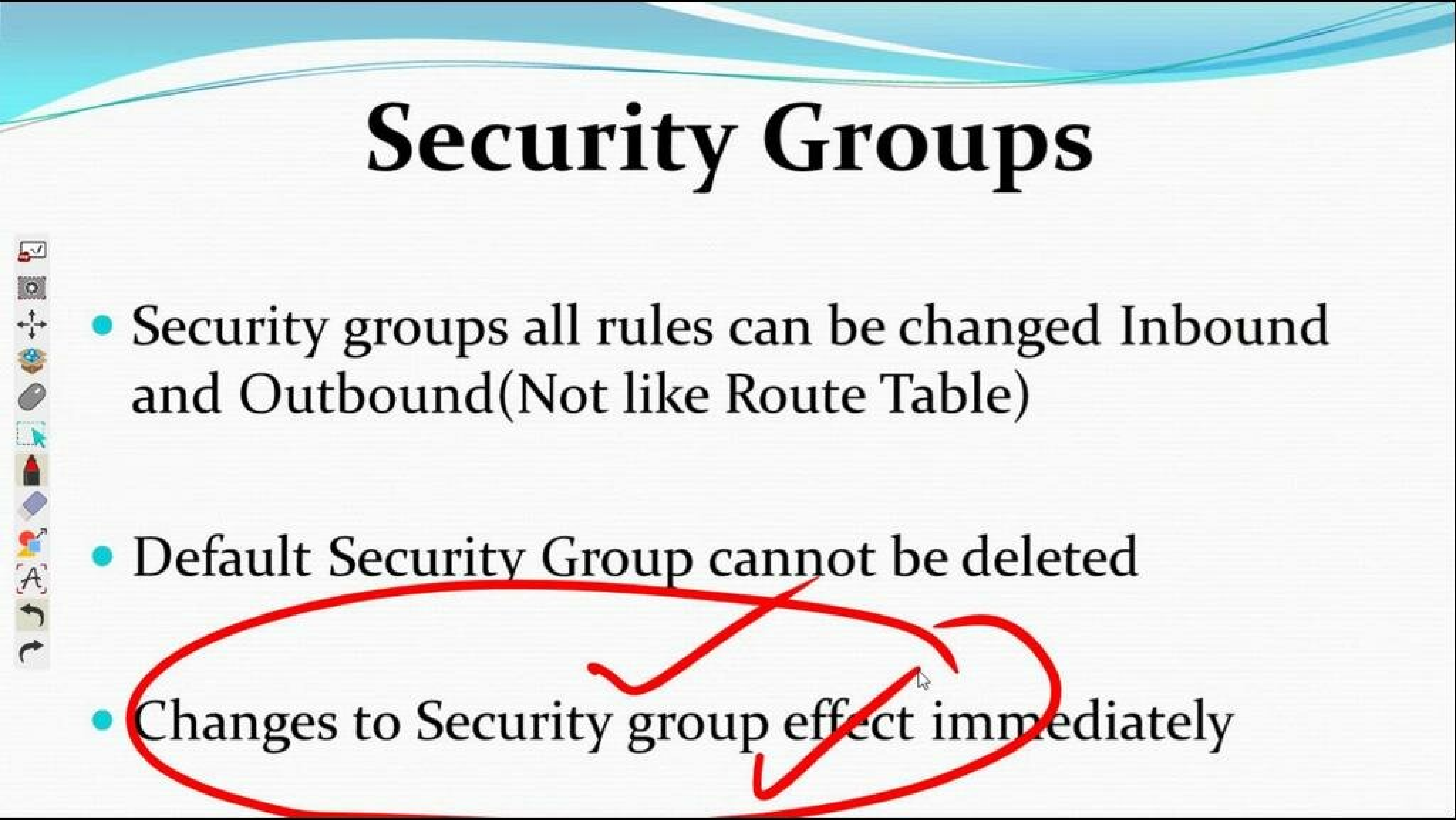

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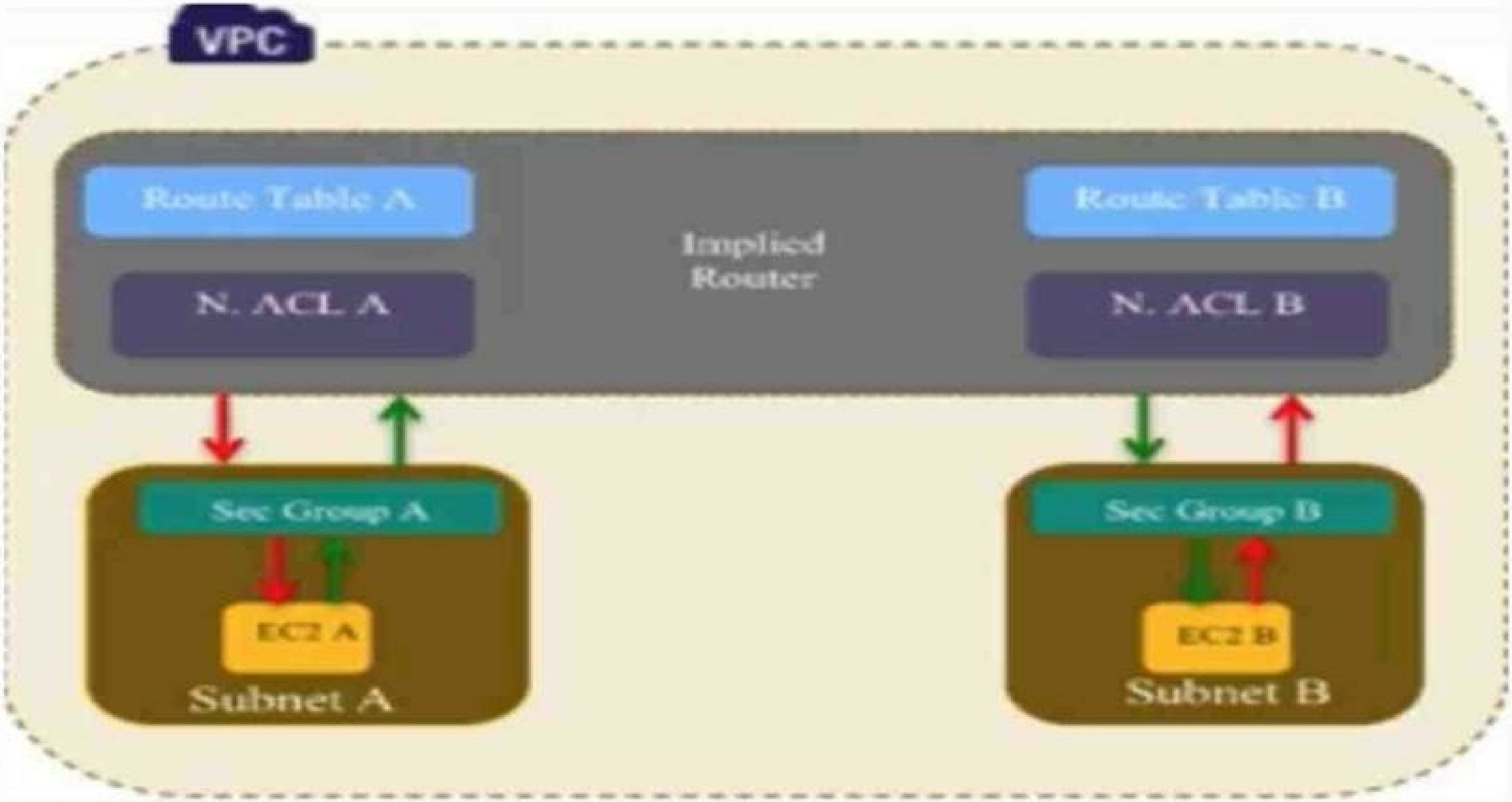
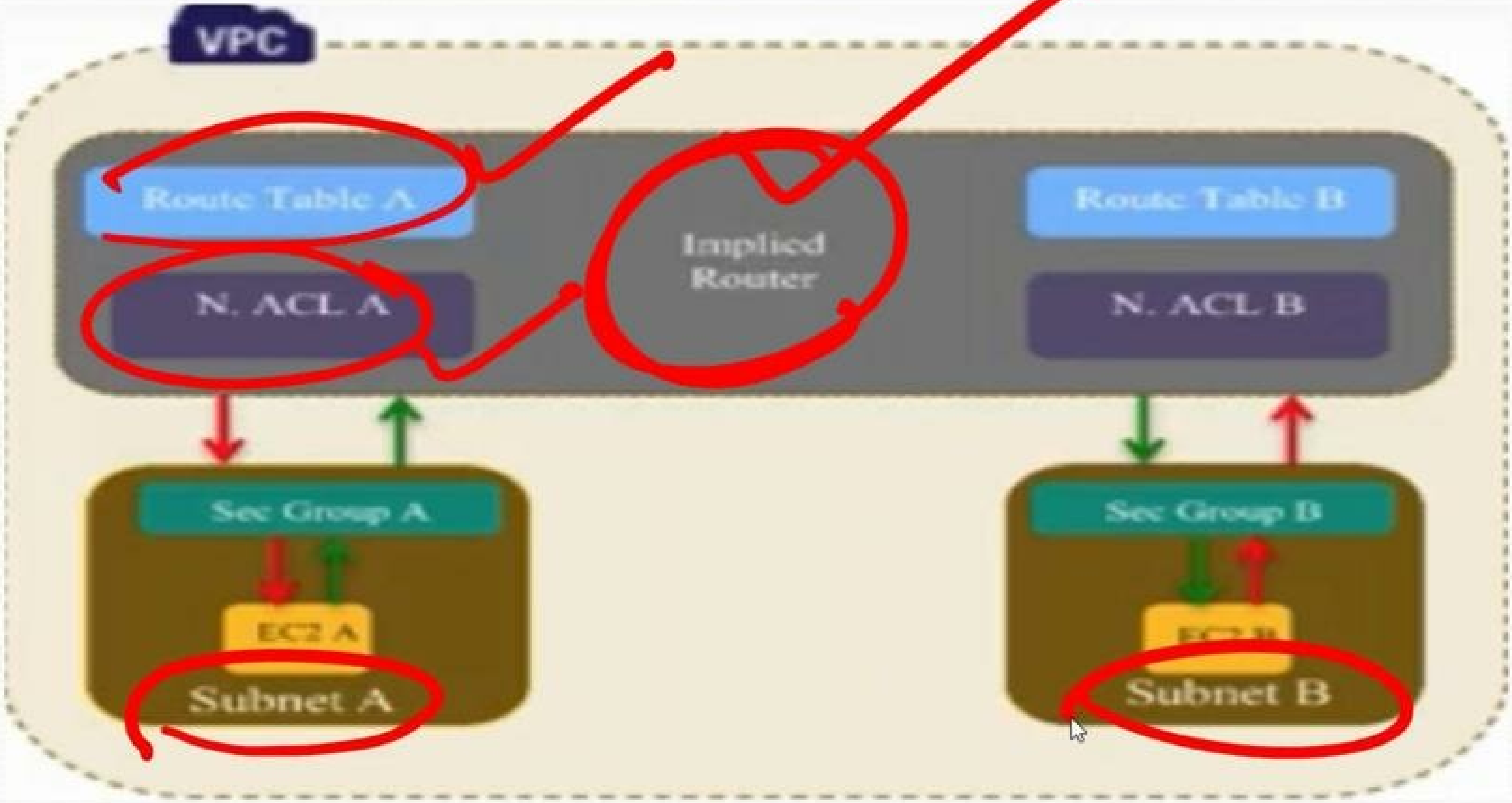
Network Access Control List

N-ACL’s


VPC
Route Table A
Implied Router
Route Table B
N. ACL A
N. ACL B
Sec Group A
Sec Group B
EC2 A
EC2 B
Subnet A
Subnet B

N-ACL's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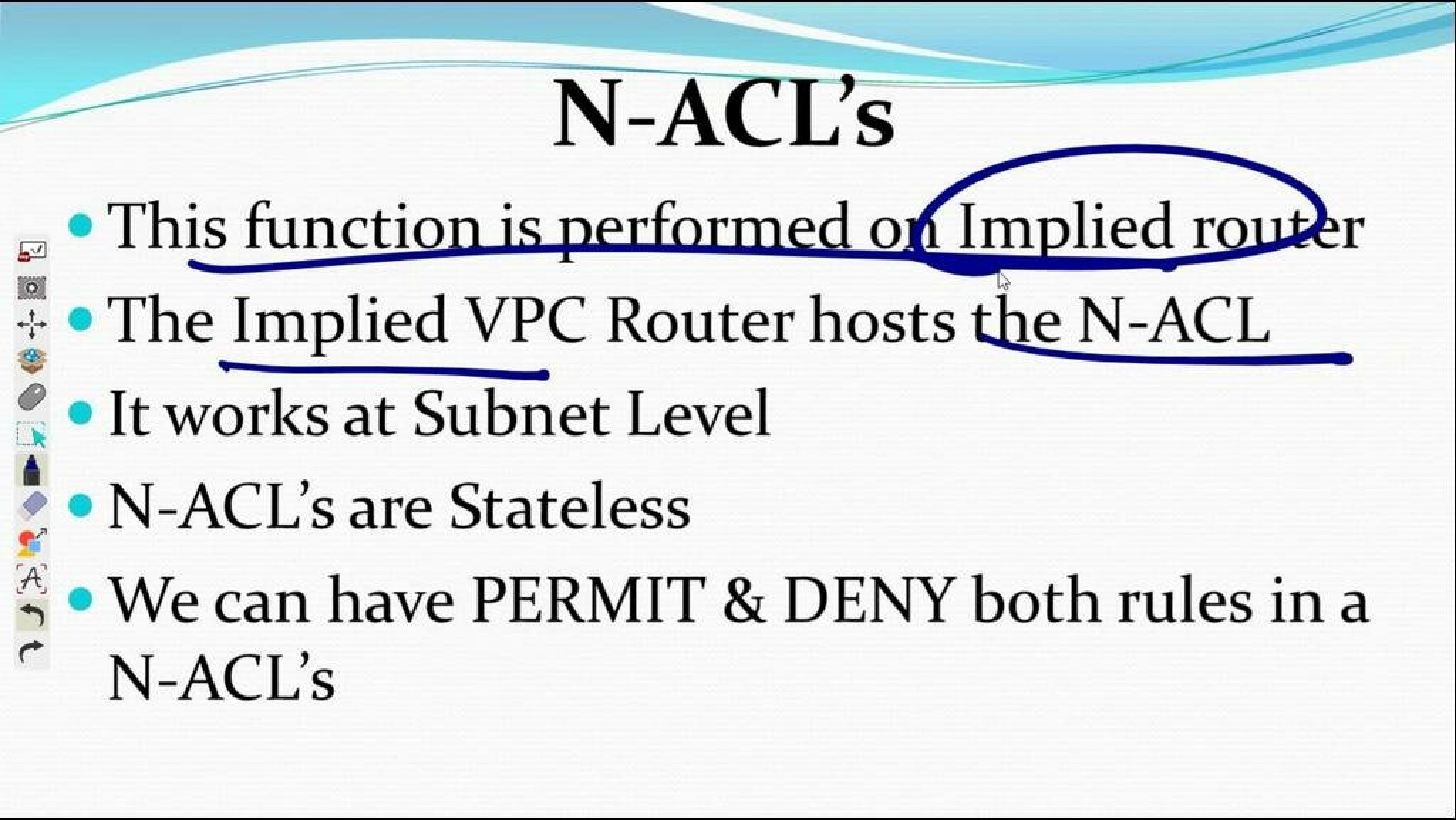
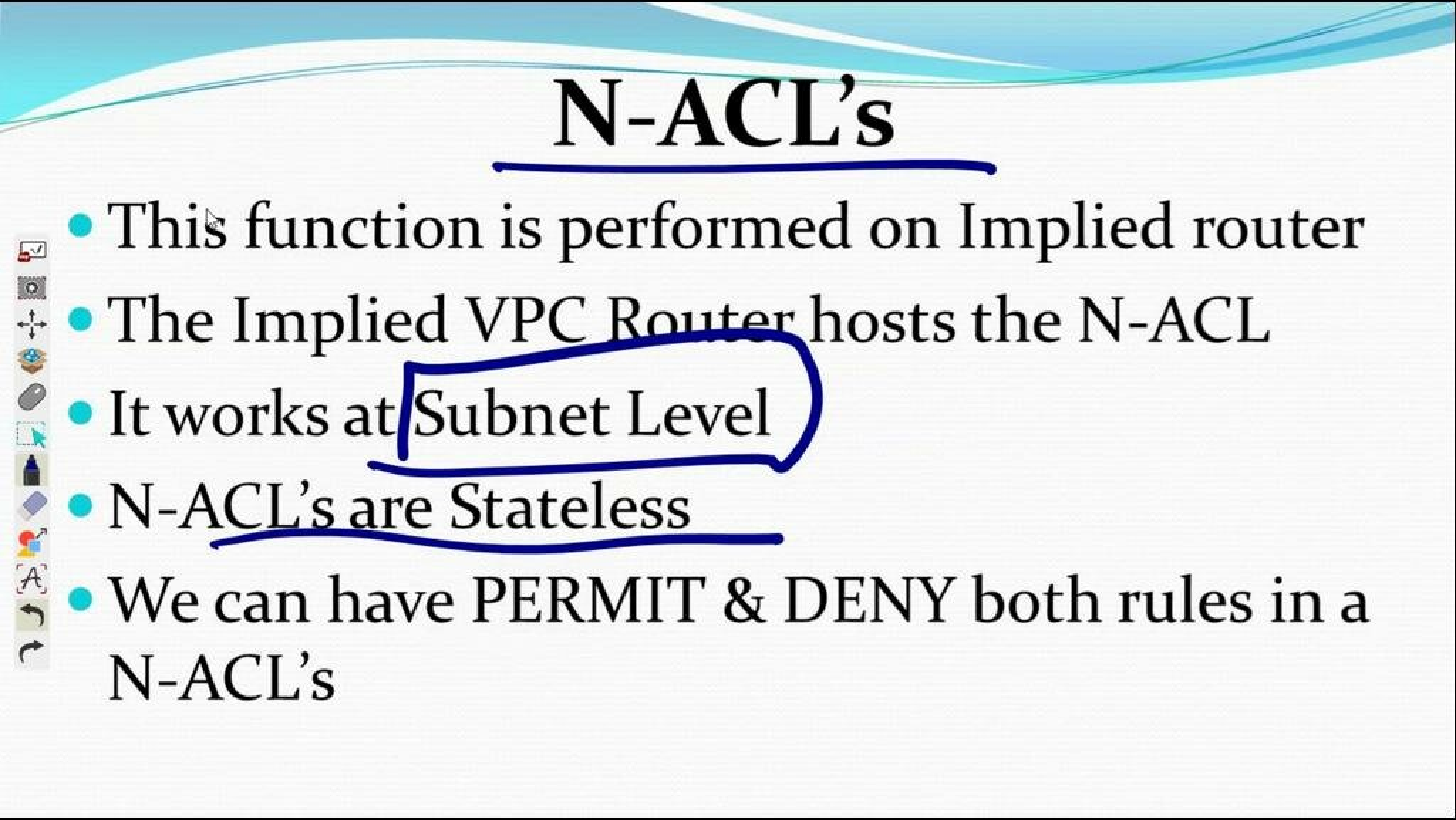


N-ACL’s

- This function is performed on Implied router
- The Implied VPC Router hosts the N-ACL
- It works at Subnet Level
- N-ACL’s are Stateless
- We can have PERMIT & DENY both rules in a N-ACL’s



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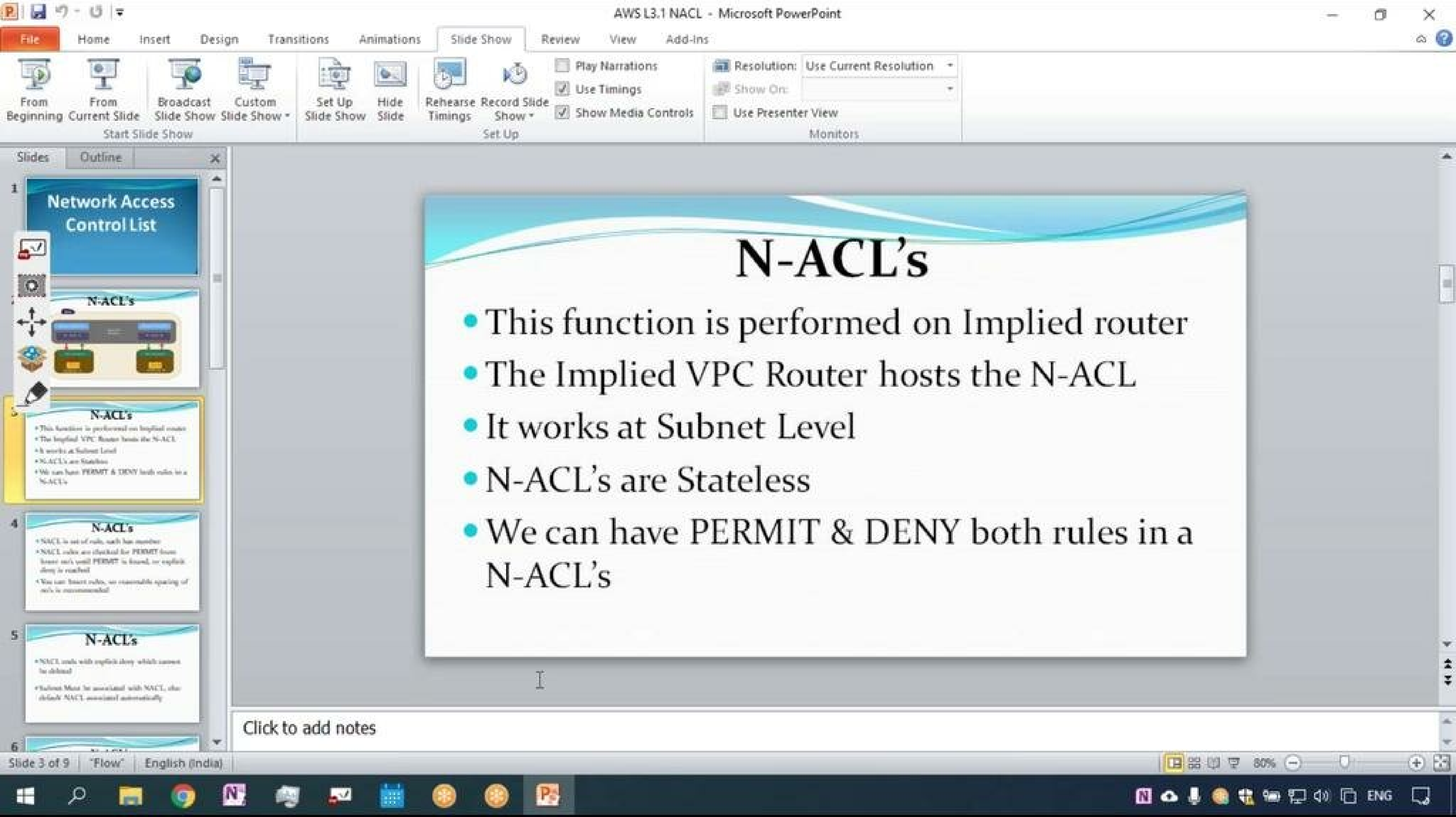

□ Play Narrations
☑ Use Timings
☑ Show Media Controls

Resolution: Use Current Resolution
Show On:
□ Use Presenter View

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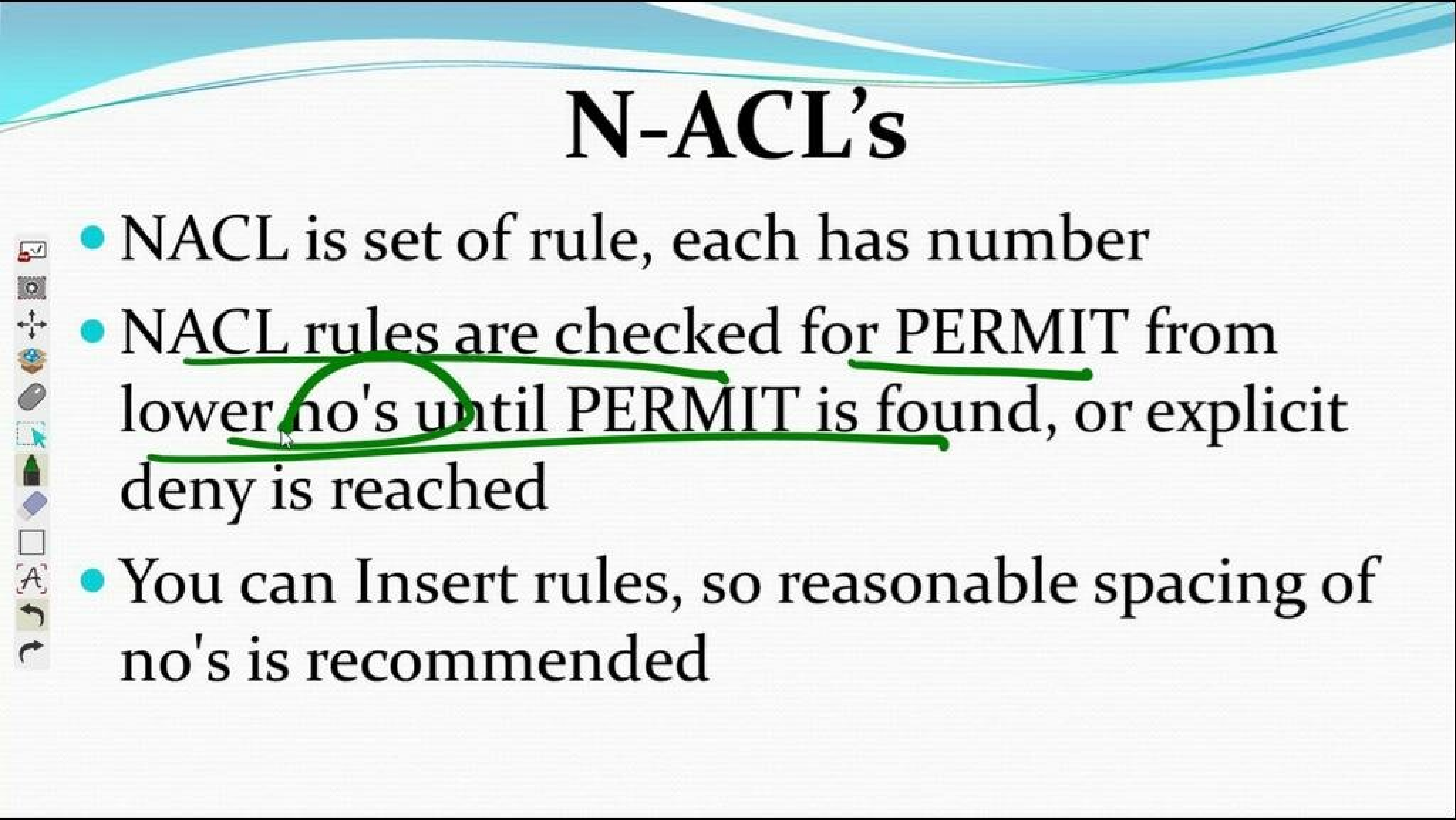

N-ACL's

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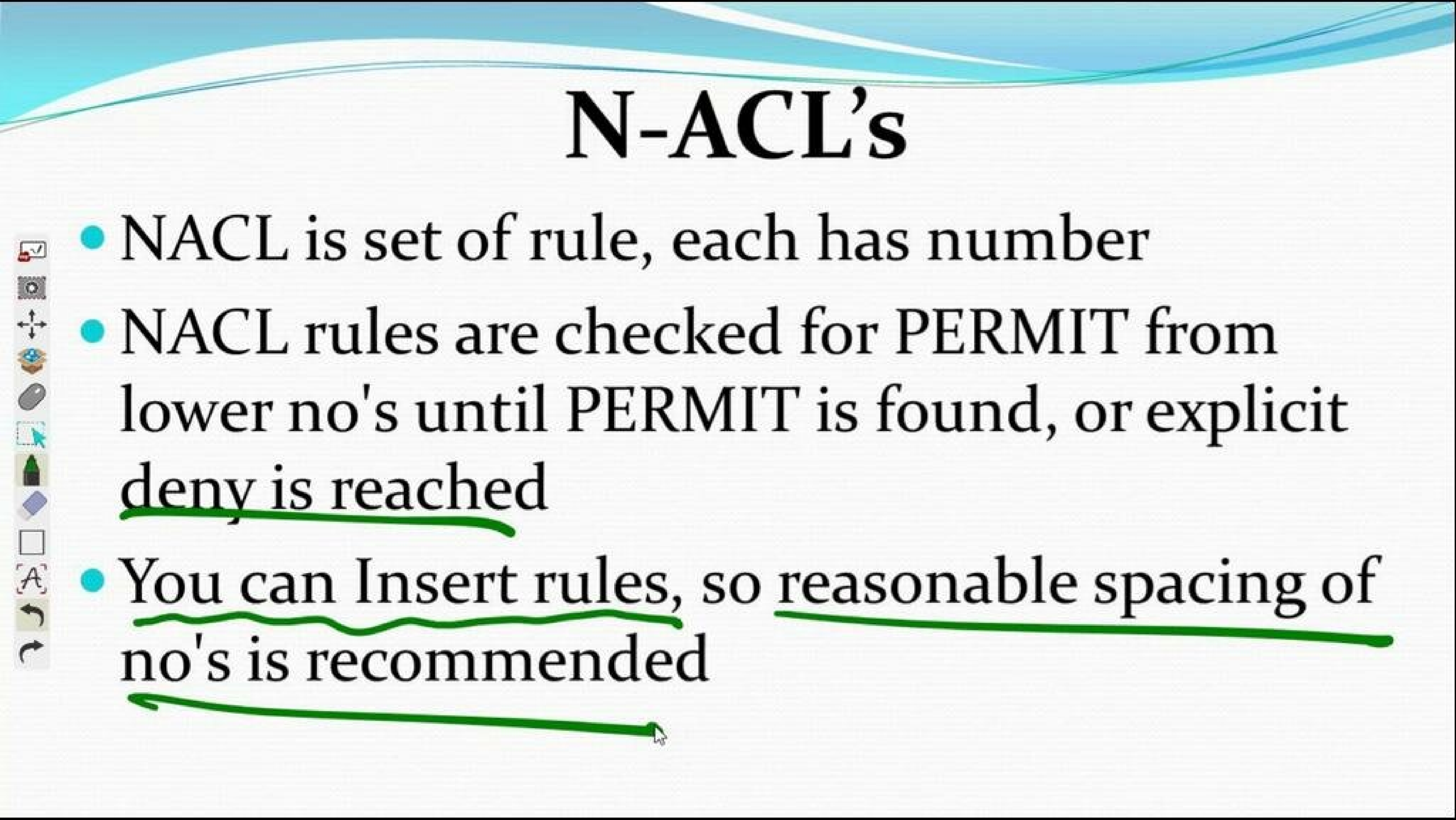
- NACL rules are checked for PERMIT from lower no's until PERMIT is found, or explicit deny is reached
- You can Insert rules, so reasonable spacing of no's is recommended



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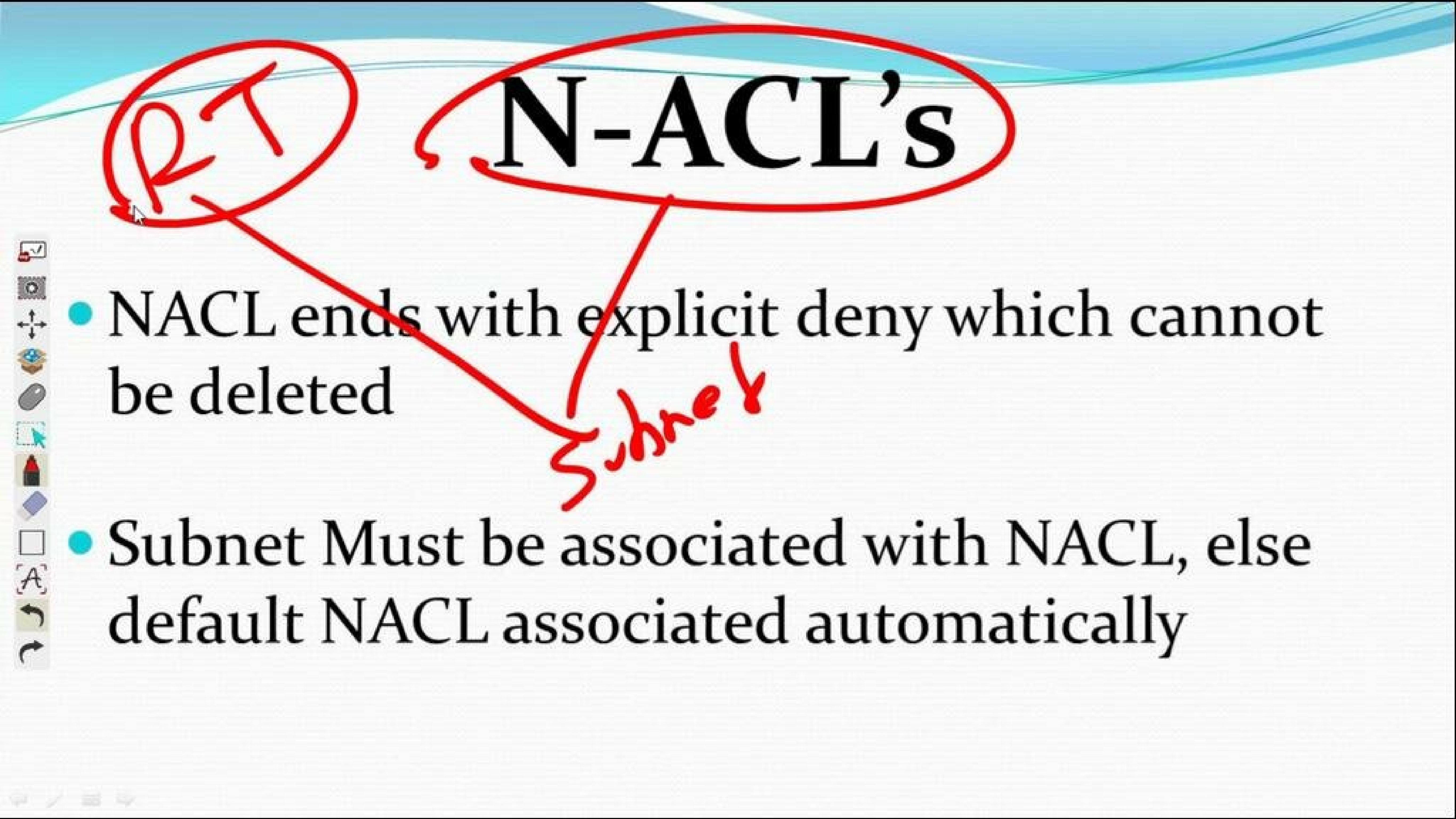

N-ACL's

- NACL ends with explicit deny which cannot be deleted
- Subnet Must be associated with NACL, else default NACL associated automatically

N-ACL’s

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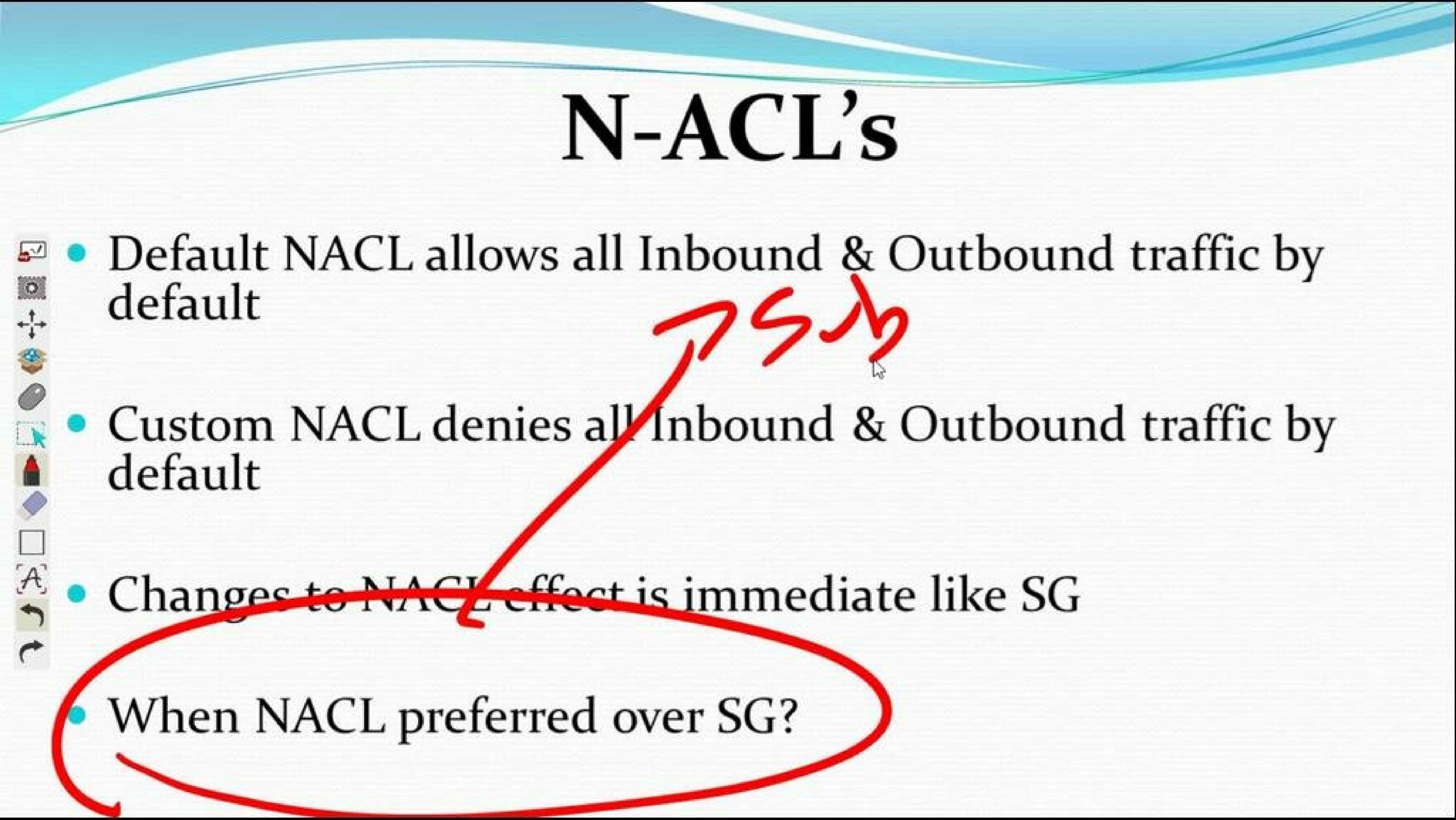

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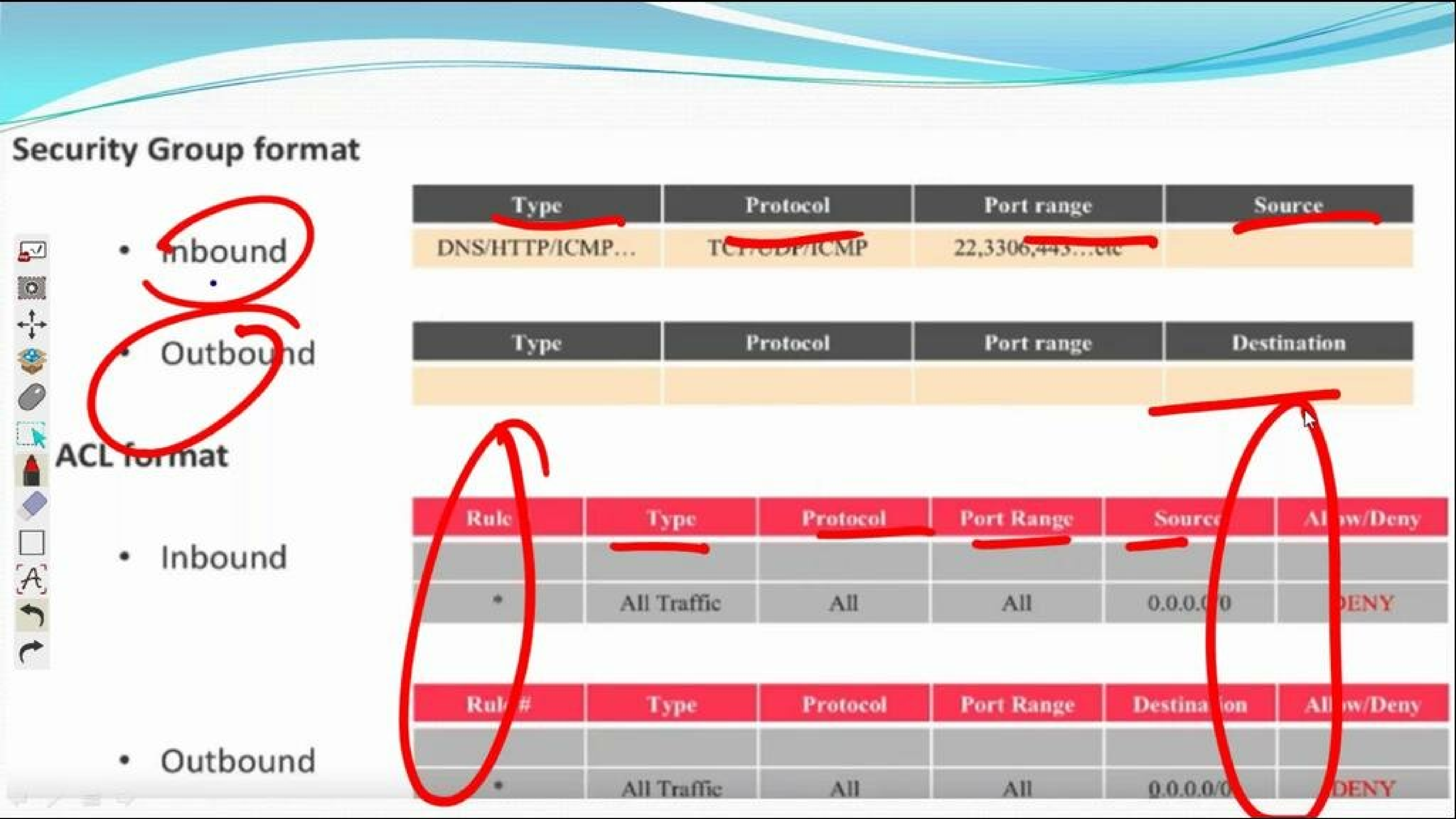
N-ACL’s

- Inbound in NACL means coming from outside subnet. Outbound means going out of Subnet

- Inbound for SG means coming from outside the instance. Outbound means going out of Instance ENI



Security Group format

- Inbound

Type	Protocol	Port range	Source
DNS/HTTP/ICMP…	TCP/UDP/ICMP	22,3306,443…etc	

- Outbound

Type	Protocol	Port range	Destination

ACL format

- Inbound

Rule	Type	Protocol	Port Range	Source	Allow/Deny
*	All Traffic	All	All	0.0.0.0/0	DENY

- Outbound

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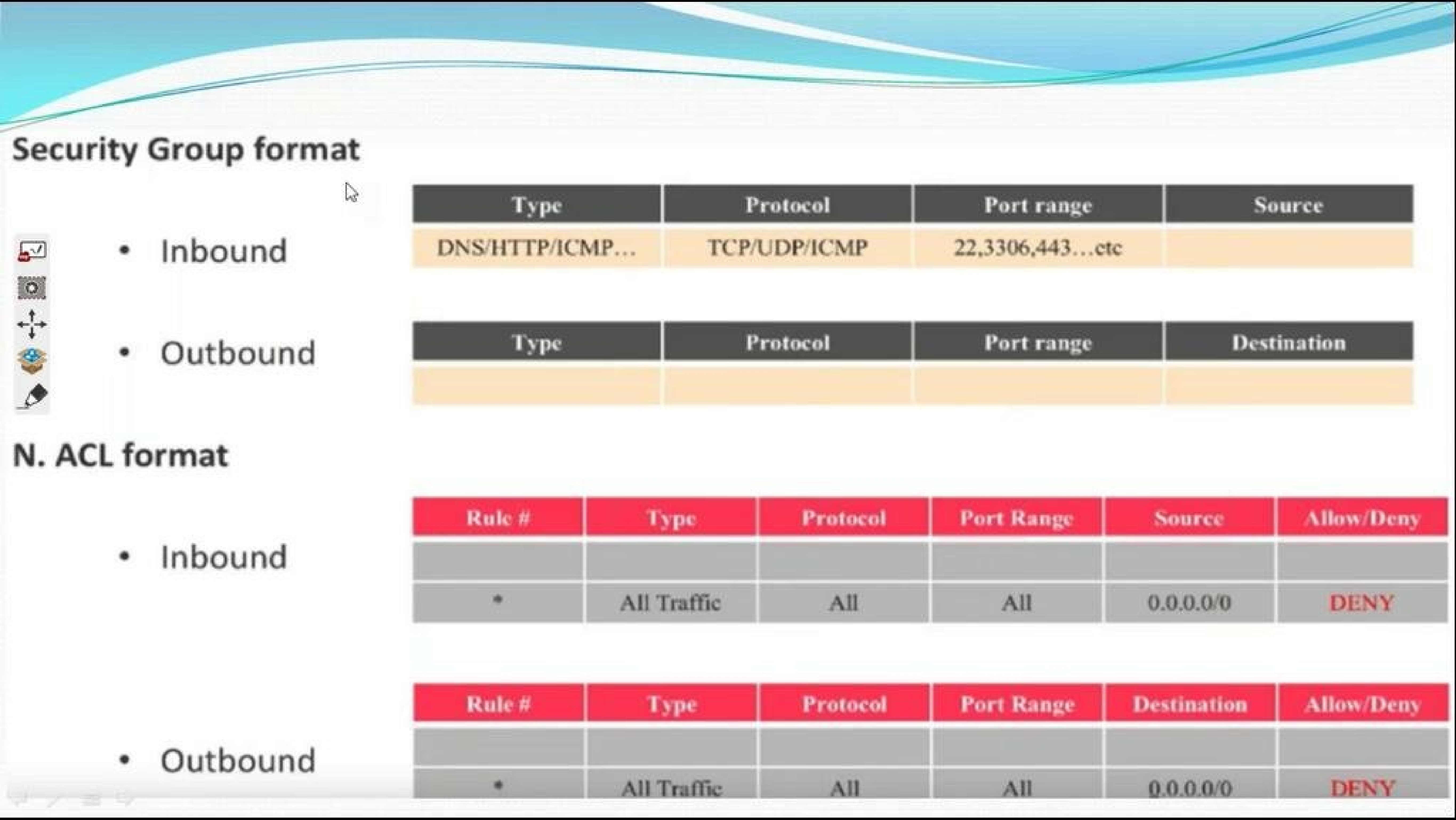

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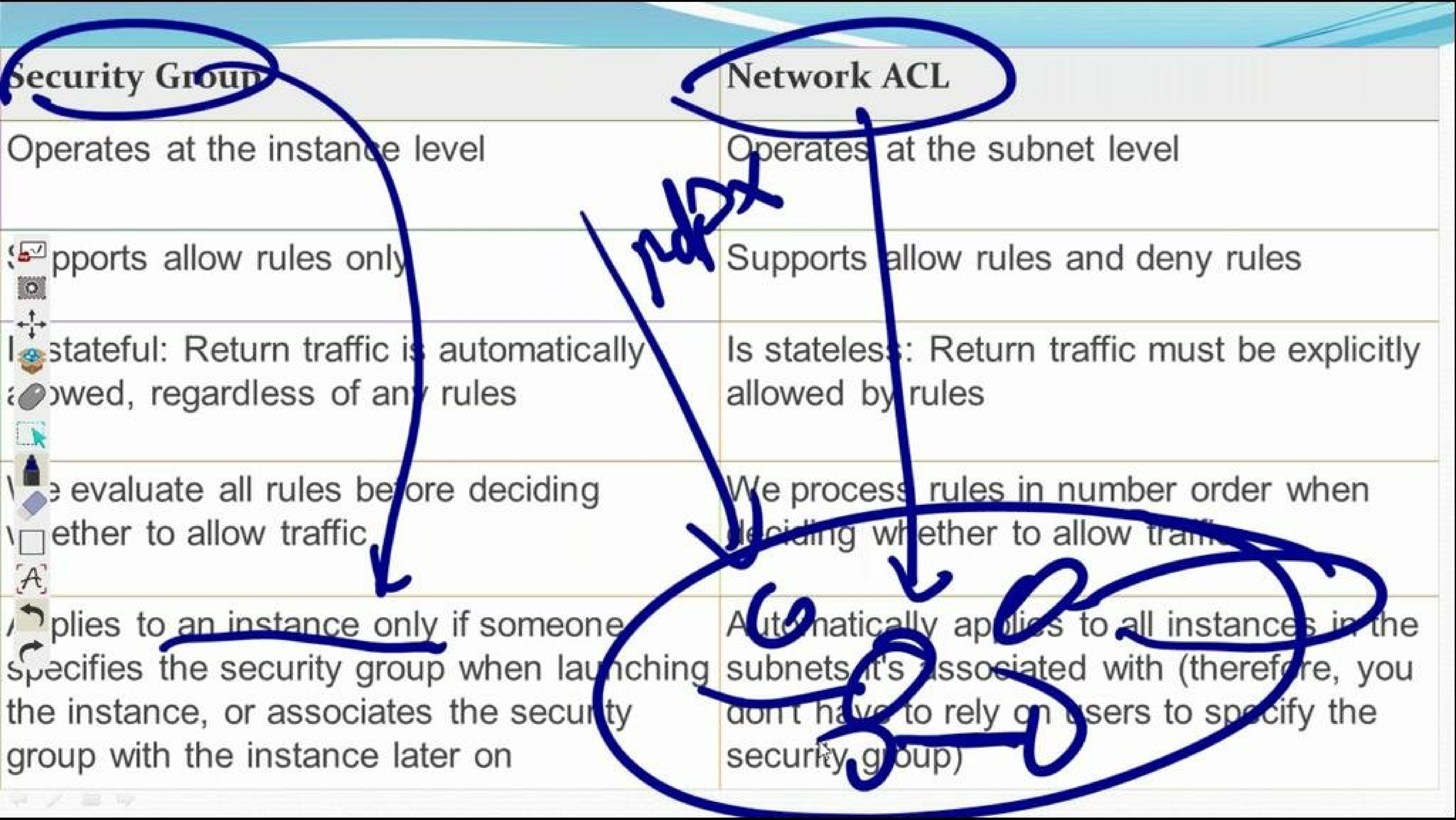

Security Group	Network ACL
Operates at the instance level	Operates at the subnet level
Supports allow rules only	Supports allow rules and deny rules
Is stateful: Return traffic is automatically allowed, regardless of any rules	Is stateless: Return traffic must be explicitly allowed by rules
We evaluate all rules before deciding whether to allow traffic	We process rules in number order when deciding whether to allow traffic
Applies to an instance only if someone specifies the security group when launching the instance, or associates the security group with the instance later on	Automatically applies to all instances in the subnets it's associated with (therefore, you don't have to rely on users to specify the security group)