

Virtual Private Cloud (VPC)

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- Multiple IP subnets inside each AZ

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CIDR and IP Address range



Private IPv4 addresses

RFC1918 name

24-bit block/8

20-bit block/12

16-bit block/16

IP address range

10.0.0.0 – 10.255.255.255

172.16.0.0 – 172.31.255.255

192.168.0.0 – 192.168.255.255

number of addresses

16777216

1048576

65536

CIDR and IP Address range

- Once the VPC is created you cannot change its CIDR block range(Create New VPC)
- Size of CIDR block Min /28 or Max /16
- Different CIDR's in VPC cannot overlap
- Expand your VPC by adding new CIDR IP address ranges (Secondary- u can delete)

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Slides Outline

8 CIDR and IP Address range

Virtual Private Cloud (VPC)

- Create VPC with CIDR block 10.0.0.0/16
- Subnet 10.0.0.0/24
- Subnet 10.0.1.0/24
- Multiple IP addresses inside each VPC

CIDR and IP Address range

- Create VPC with CIDR block 10.0.0.0/16
- Subnet 10.0.0.0/24
- Subnet 10.0.1.0/24
- Different CIDR's in VPC cannot overlap
- Expand your VPC by adding new CIDR IP address ranges (Secondary - you can delete)

11 CIDR and IP Address range

12 Implied Router

Click to add notes

Slide 10 of 20 | Flow | English (India) | 80% | ENG

The screenshot shows a Microsoft PowerPoint presentation titled "AWS L1 till RT intro & L2 - Microsoft PowerPoint". The slide is titled "CIDR and IP Address range". The bulleted list on the slide includes:

- Once the VPC is created you cannot change its CIDR block range (Create New VPC)
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The left sidebar shows other slides in the deck, including "Virtual Private Cloud (VPC)" and "Implied Router". The bottom taskbar shows various system icons and the language setting as English (India).

CIDR and IP Address range

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Private IPv4 addresses

RFC1918 name

24-bit block/8

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RFC1918 name	IP address range	number of addresses
24-bit block/8	10.0.0.0 – 10.255.255.255	16777216
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↳ CIDR and IP Address range

- AWS reserves 1st Four IP and Last one IP in each Subnet
- Say 10.0.0.0/24

10.0.0.0 Network ID

10.0.0.1 VPC router

10.0.0.2 DNS Related

10.0.0.3 Future Use

10.0.0.255 Broadcast

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Implied Router

- No request has to be made, automatic facility
- Implied router automatically does communication between subnets and outside internet world



VPC Components



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Slides Outline

9 Virtual Private Cloud (VPC)

- Use VPC and Subnetting w/ CIDR (Min 256)
- Subnet communication happens w/ CIDR
- Multiple IP addresses inside each CIDR

10 CIDR and IP Address range

- Classless Inter-Domain Routing (CIDR) is used for IP addressing
- Example: 192.168.1.0/24 has 256 IP addresses available
- Subnet mask: 255.255.255.0
- Default gateway: 192.168.1.1
- Router: 192.168.1.1
- Network: 192.168.1.0
- Broadcast: 192.168.1.255

11 CIDR and IP Address range

- CIDR notation: /24 means 255.255.255.0 and 255.255.255.1 available
- For example:
 - Network: 192.168.1.0
 - Subnet mask: 255.255.255.0
 - Default gateway: 192.168.1.1
 - Broadcast: 192.168.1.255

12 Implied Router

- No request has to be made, automatic facility
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13 Route Tables

- These are tables that have entries which says what is the destination and target for that packet

Click to add notes

Slide 12 of 20 | "Flow" | English (India) | 80% | ENG

Implied Router

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Route Tables

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Implied Router



has to be made, automatic facility

Router automatically does communication
between subnets and outside internet world

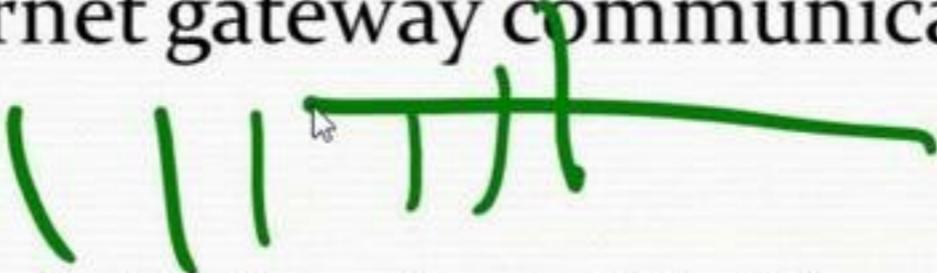
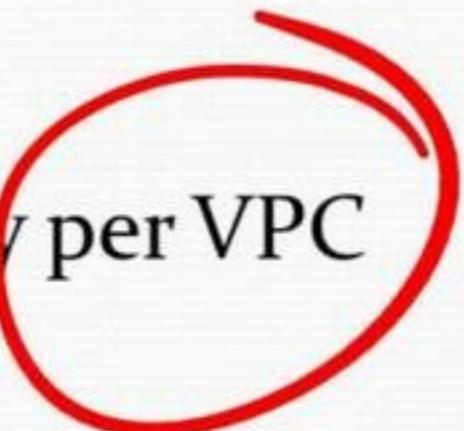
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Tendy



Internet gateways

- VPC without Internet gateway communicate with the internet – NO 
- Horizontally Scaled, Redundant, Highly available VPC component
- Only ONE Internet Gateway per VPC 
- It support both IPv4 & IPv6



Security Groups

- Security groups are basically virtual firewalls that protect your Virtual Servers or EC2 Instances

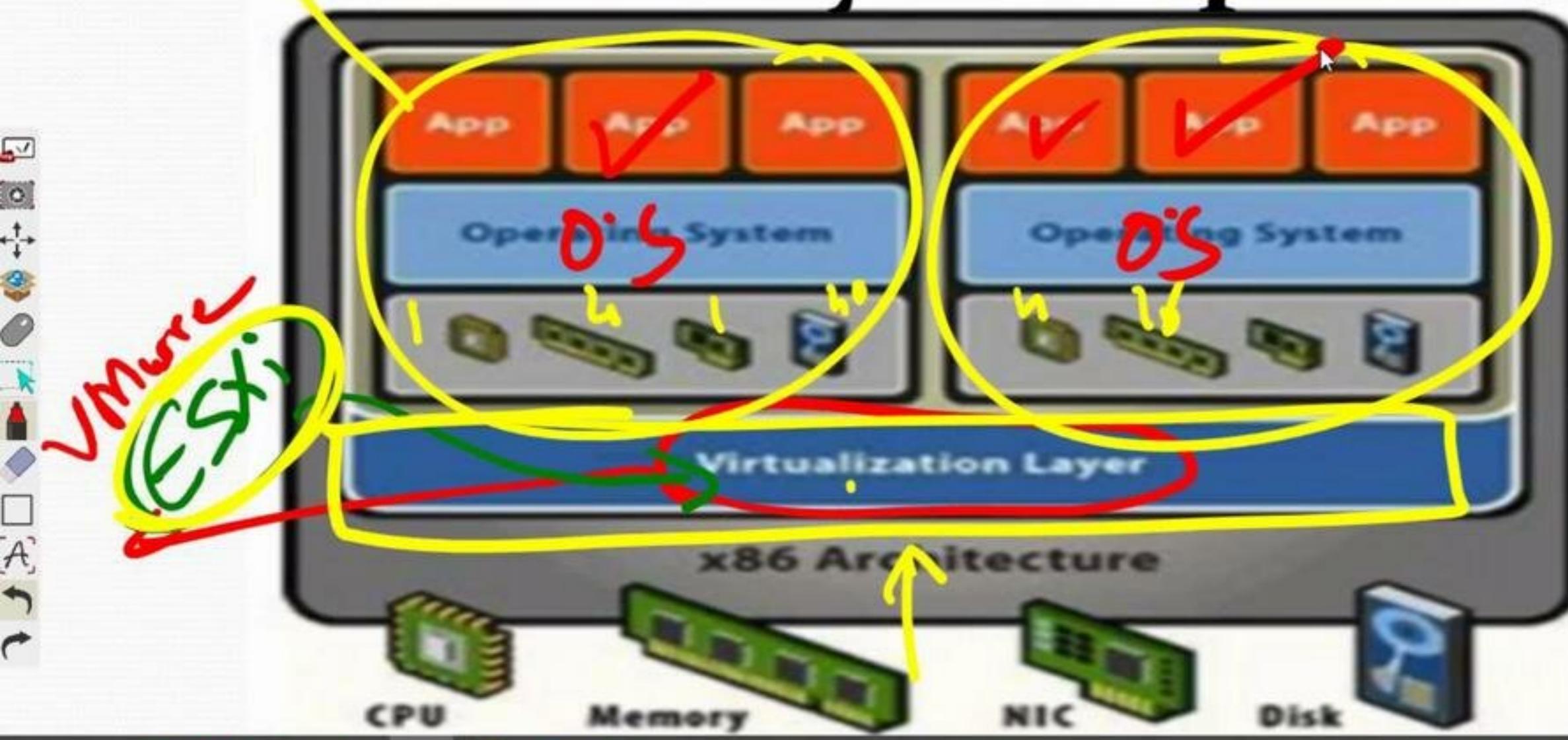


Security Groups

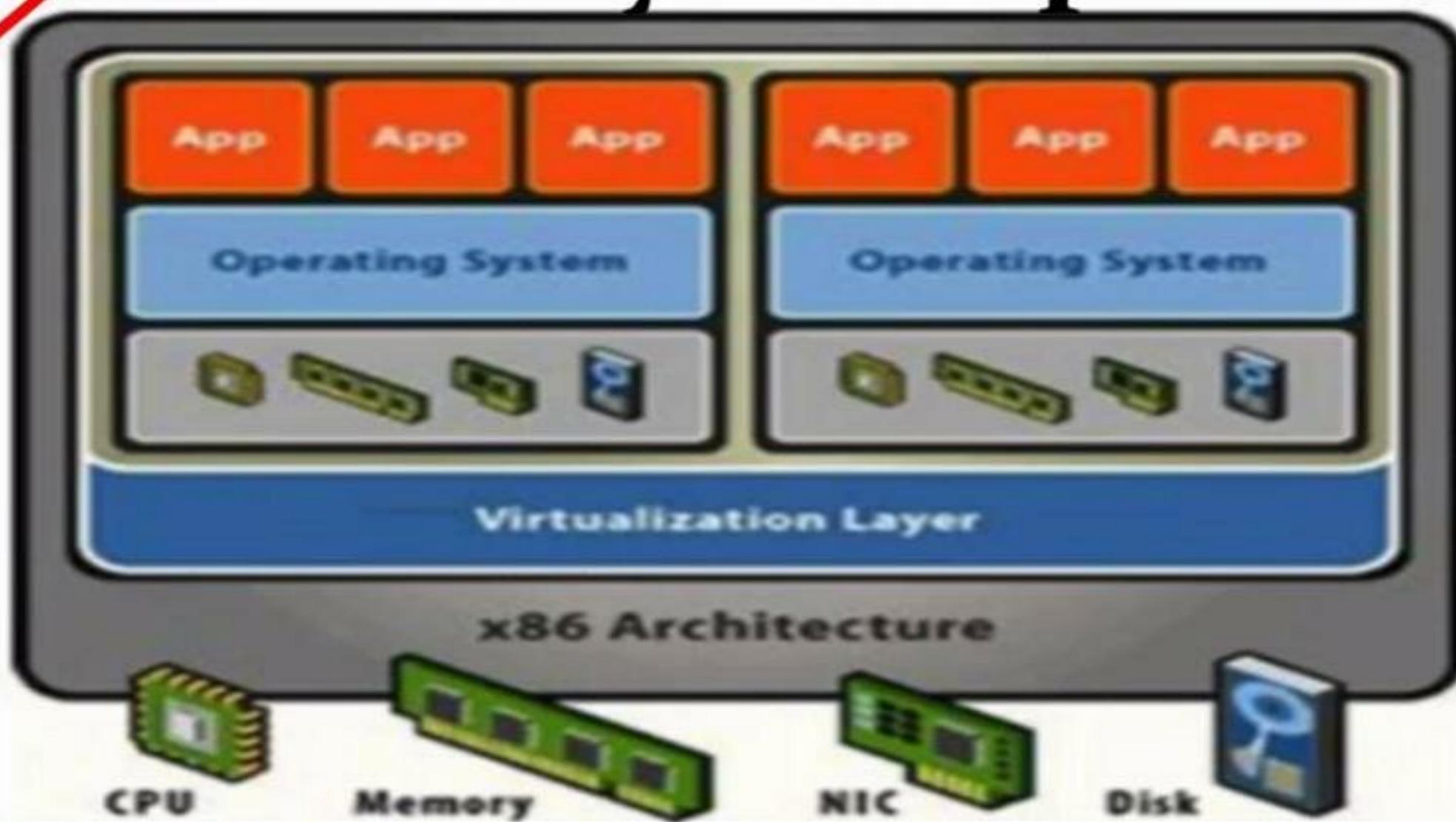
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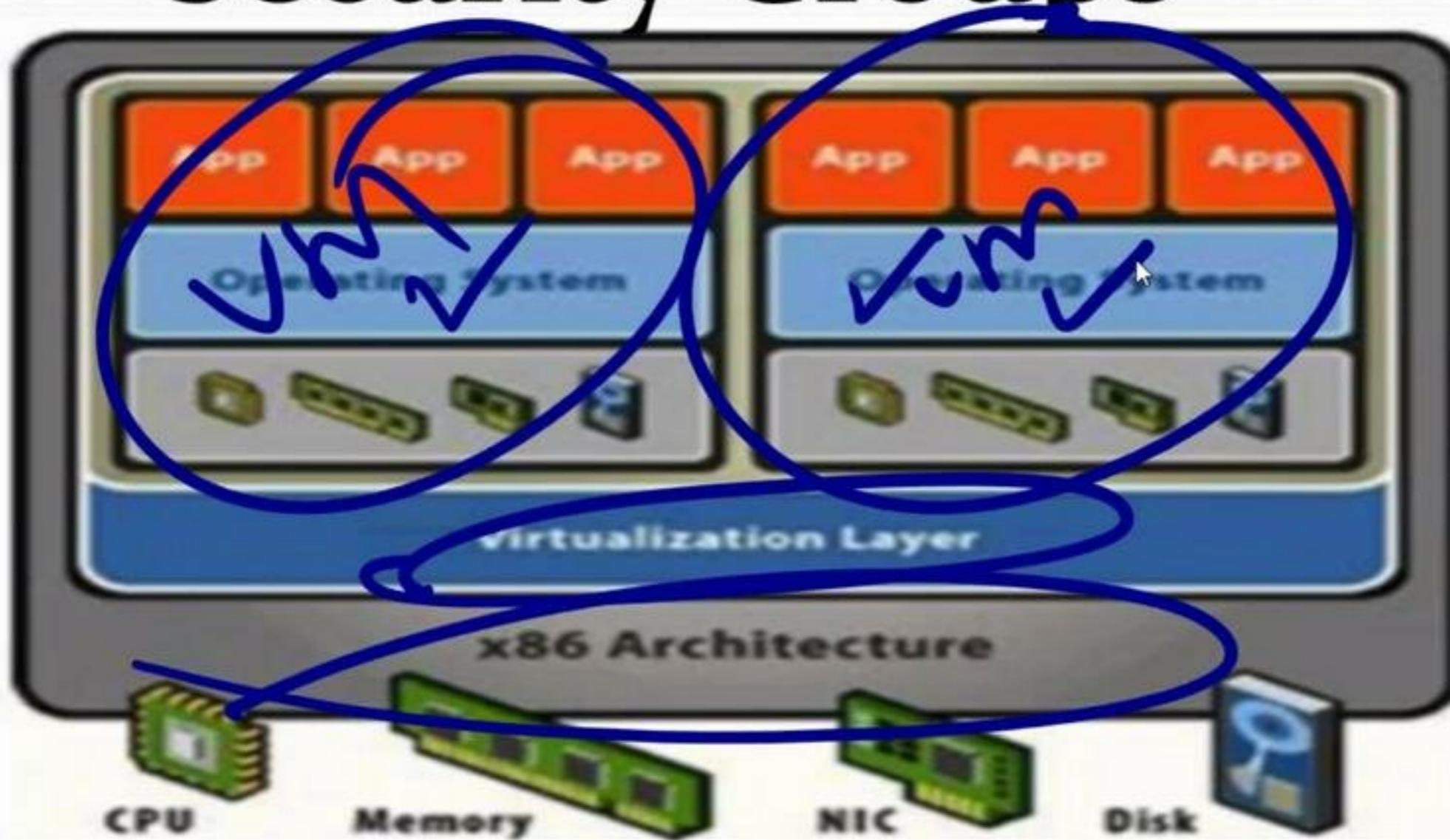
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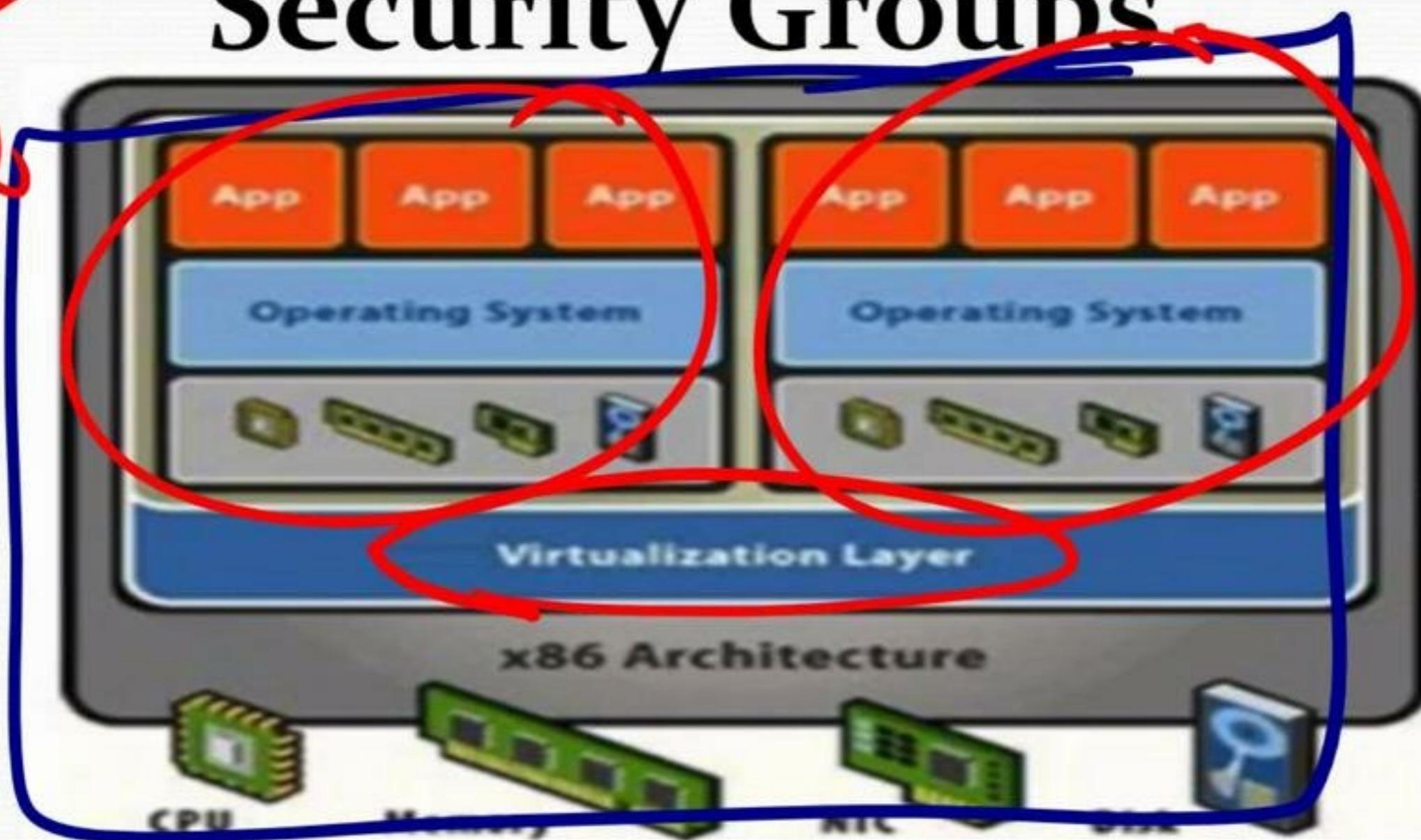
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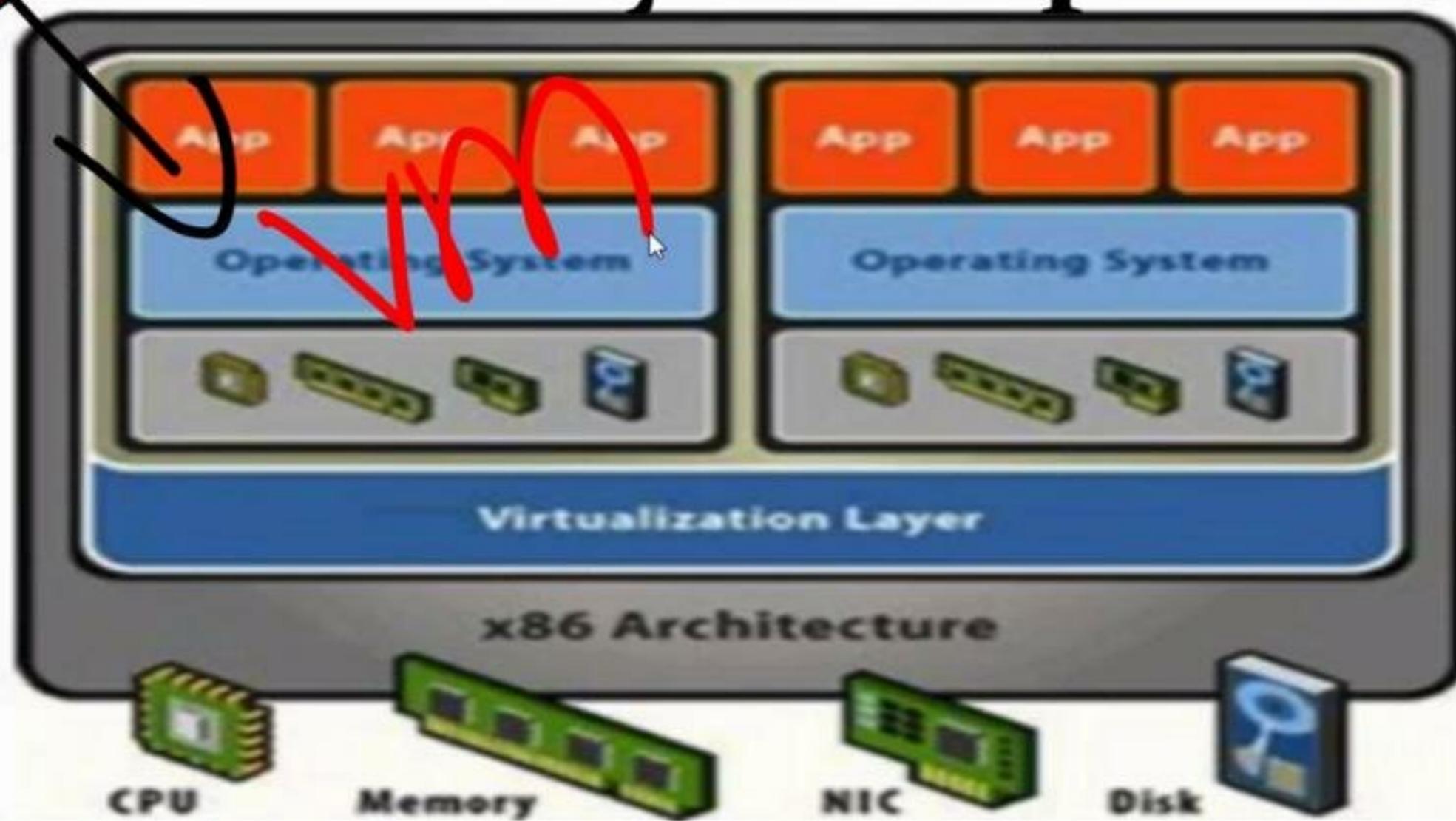
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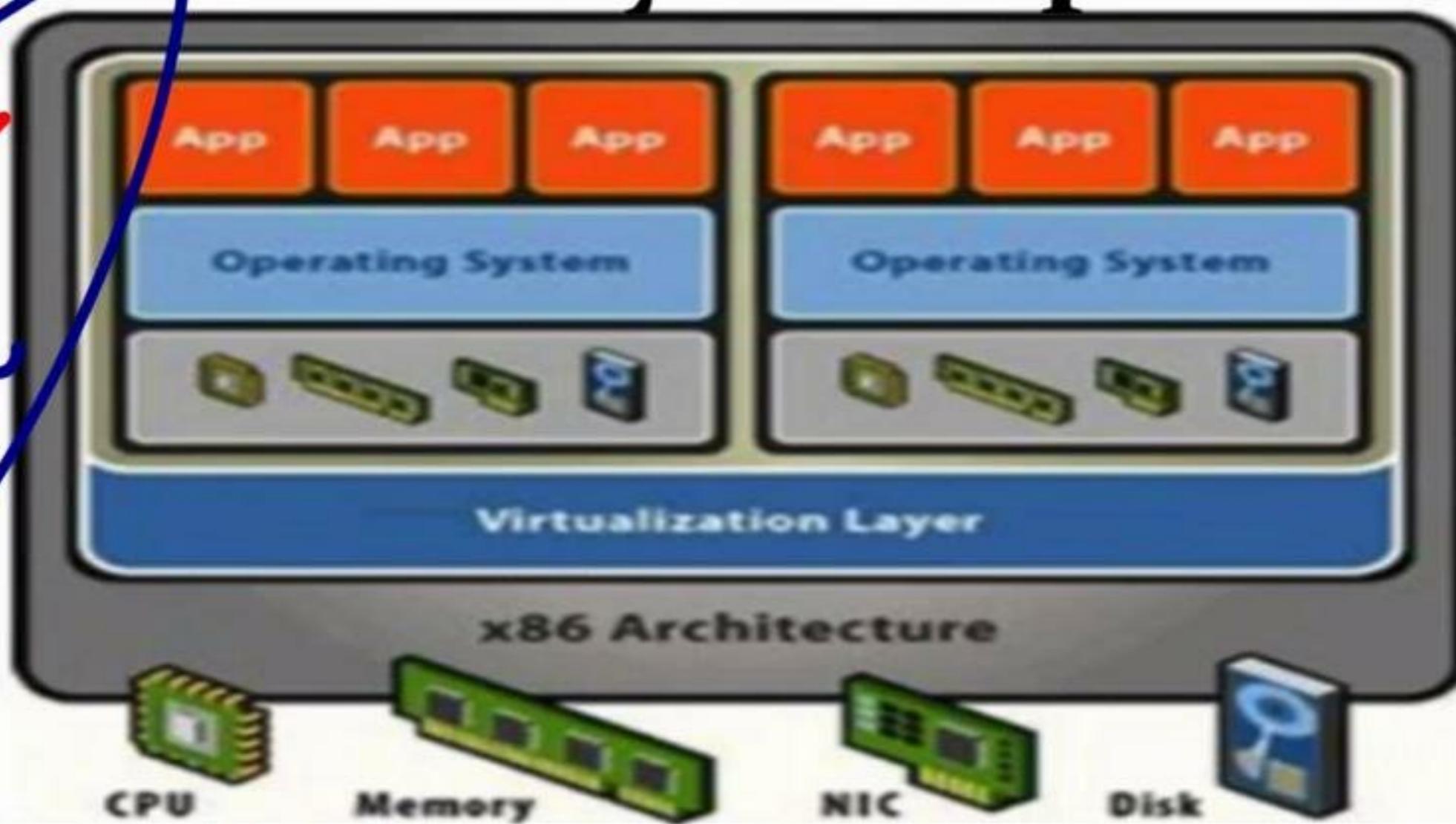
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Aws ↴



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Security Groups



Network Access Control List (N. ACL's)

- First Line of defense
- Security group functions at Virtual Nic level where as the Network ACL they work at the subnet level



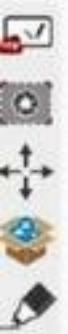
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Virtual private Gateway

- The virtual private gateway will take you to your own premises or headquarters or branches through VPN or Direct Connect



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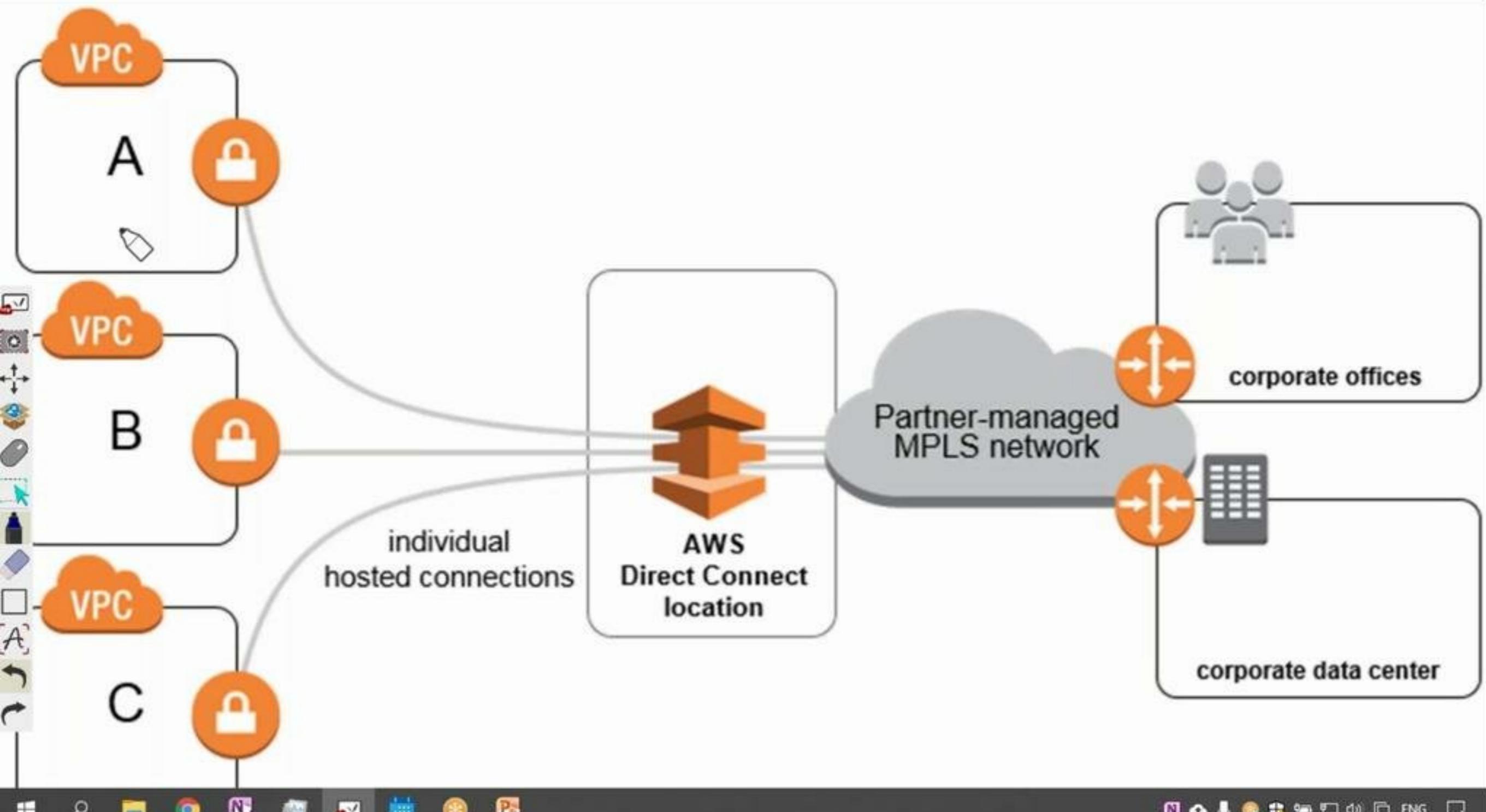


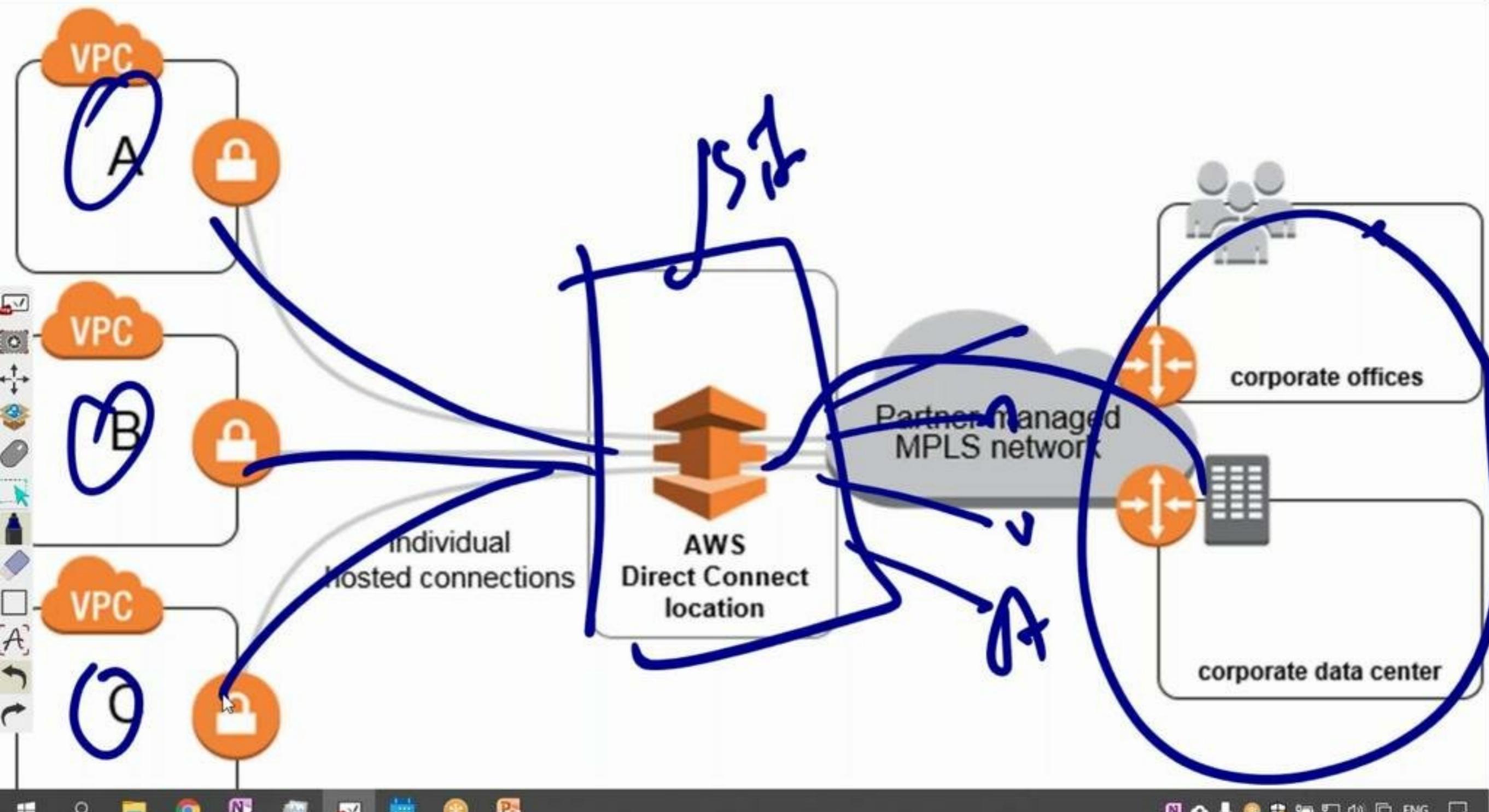
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Virtual private Gateway

- The virtual private gateway will take you to your own premises or headquarters or branches through **VPN** or Direct Connect



Direct Connect

- In many cases can reduce your network costs,
increase bandwidth throughput, and provide a
more consistent network experience than Internet-
based connections (VPN)
- AWS Direct Connect provides 1 Gbps and 10 Gbps
connections, you can easily provision multiple
connections if you need more capacity

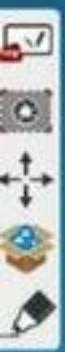


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Types of VPC



~~Default VPC~~

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