NETWORK FUNDAMENTALS

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ACL

- It's a configuration done at router
- It is used to control traffic of all computers in our lan
- It permits / denies traffic based on the rules which we create.
- TYPES OF ACL
- A. STANDARD ACL
- B. EXTENDED ACL

STANDARD ACL

- Its old and used in smaller networks
- It is permits / denies traffic based on "SOURCE IP ADDRESS"
- Configured close to "DESTINATION"
- Number Range 0 - 99

EXTENDED ACL

- Its new and used in larger networks
- It is permits / denies traffic based on
- "SOURCE IP ADDRESS"
- "DESTINATION IP ADDRESS"
- "PROTOCOL"
- "PORT NUMBER"
- Configured close to "SOURCE"
- Number Range 100 - 199

STEPS TO CONFIGURE ACL

- 1. ACL CREATION
- 2. SELECT AN INTERFACE
- 3. IMPLEMENTATION OF ACL
- 4. VERIFICATION OF ACL

STANDARD ACL CONFIGURATION

1.ACL CREATION

#ACCESS-LIST <NO>PERMIT/DENY <SOURCE IP><SOURCE WILDCARD MASK>

2.IMPLEMENTATION OF ACL

#INTERFACE<TYPE><NO>

#IP ACCESS-GROUP<NO> IN/OUT

3.VERIFICATION OF ACL

#SHOW IP ACCESS-LIST

4.VERIFICATION-IMPLEMENTATION OF ACL

#SHOW IP INTERFACE <TYPE><NO>

NOTE -

WILD CARD MASK FOR ACL WILL HAVE THE FOLLOWING CRITERIA

NORMAL WILD CARD MASK WILL BE THE INVERSE OF UR SUBNET MASK

BUT HERE WE HAVE TWO SCENARIOS

SCENARIO 1 - WHEN WE CONFIGURE FOR A SINGLE HOST / IP

i.e 192.168.1.2, then Wild card mask will be all zeros 0.0.0.0

SCENARIO 2 - WHEN WE CONFIGURE FOR A ENTIRE NETWORK

i.e 192.168.1.0, then Wild card mask will be 0.0.0.255

WHEN IMPLEMENTING ACL , WE HAVE TWO OPTIONS

IN & OUT

IN blocks the incoming traffic

OUT block the outgoing traffic

THE OUTPUT VARIES LIKE BELOW WHEN WE PING

IN :REQUEST TIMEOUT

OUT :DESTINATION HOST UNREACHABLE

ACL CREATION

#ACCESS-LIST <NO>PERMIT/DENY<PROTOCOL><SOURCE IP><SOURCE WILDCARD MASK><DESTINATION IP><DESTINATION WILDCARD MASK><OPERATOR><PORT NO>

IMPLEMENTATION OF ACL

#INT <TYPE><NO>

#IP ACCESS-GROUP <NO>IN/OUT

Note:

1. More specific statements should be at top
2. More generic statements should be at bottom

BGP - BORDER GATEWAY PROTOCOL

THIS COMES UNDER EGP - EXTERIOR GATEWAY PROTOCOL
IN CCNA WE SAW IGP - INTERIOR GATEWAY PROTOCOL, AND THAT'S THE REASON WHEN WE CONFIGURED 3 ROUTERS, THE AUTONOMOUS NUMBER FOR THE THREE ROUTERS WERE SAME, BECAUSE IGP WILL ONLY CONFIGURE ROUTERS IN SAME AREA.

WHEREAS BGP CAN PROVIDE ROUTING TO ROUTERS WITH DIFFERENT AUTONOMOUS NUMBER.

CONFIGURATION
ROUTER A

#ROUTER BGP (AUT NO- A)
#NETWORK (NID)
#NEIGHBOR (NEXT HOP IP ADDRESS) REMOTE-AS (REMOTE ROUTER AUT NO- B)