LOMBA KETERAMPILAN SISWA

SEKOLAH MENENGAH KEJURUAN
TINGKAT PROVINSI DKI JAKARTA XXX 2022

IT NETWORK SYSTEMS ADMINISTRATION

LKS2022_ITNSA_MODUL_B

MODUL B
NETWORK CHALLENGE 1

Network Module - 1

Introduction

You are a junior network engineer at Sisko. Sisko is a well-known multi-national system integrator known for handling many big and complex networks with excellent results. Your senior codenamed Mr. 391 is taking a vacation to Wano Island and trusts you to handle a big issue on a client's network. Unfortunately, the documentation about the network is very limited, but this should be no issue for a genius network engineer like you. Good luck!

Tasks

1. Here's the message forwarded from the client: "PLEASE FIX THIS ISSUE ASAP, I WANT TO ACCESS YANDEX.RU FROM MY COMPUTER (PC-01)! I AM JUST AN USER, DON'T ASK TOO MUCH I JUST WANT TO ACCESS YANDEX.RU AGAIN!". Clue: the command `default-information originate always` is not available on **MOW**. Find a way to achieve the same result.

2. The L2 network on the MOW site is very unstable because of root bridge flapping. Apply configuration on the root bridge to **prevent itself to be overthrown as root bridge** by another switch. Also, make sure **VLAN 999 is not tagged when traversing between trunk ports** to prevent a VLAN hopping attack.

3. Implement mesh access over the internet between MOW, YKS, and KVX sites using **IP protocol type 47**. Mr. 391 has implemented it but it is still incomplete. Specifically for the connection between YKS and KVX, encrypt the connection using **ISAKMP and IPSec**. Here are the implementation details:
    a. Sequence number for anything necessary: 1
    b. Object name for anything necessary: TUNNEL
    c. Encryption: AES 256
    d. Hash: MD5
    e. DH Group: 5
    f. AH + ESP combined

4. Implement a stateful firewall on **FW-01** so clients on **Research** and **Administration** can access DNS, HTTP, FTP, and ICMP to the internet. Use the name **Research-Administration** for any necessary object. Clue: Modular Policy Framework.

5. Sync all routers clock to NTP server on **ROS**. The NTP service needs to be accessible with IP **30.0.40.2** from the internet. You need to allow ICMP and NTP access from the internet to **ROS**. Use the name **ROS** for any necessary object.