Midtvejsevaluering – Netværk.

Midtvejsevalueringen består af både teori og praktisk arbejde, og skal bruges til evaluering af, om den enkelte elev på nuværende tidspunkt har tilegnet sig den nødvendige minimumsviden.

Selve opgaverne:

Den teoretiske del løses på vedlagte opgave.

Den praktiske del løses på vedlagte opgave.

Der er 2,5 time til rådighed.

Aflevering:

Begge sæt skal afleveres til læreren. HUSK at skrive navn, klasse og dato på begge sæt.

Herudover skal konfigurationen gemmes for ruteren og switchen: Vælg Export Running Config i Config fanebladet, eller lav en show running-config og kopier teksten over i f.eks. Notesblok (Notepad), og gem. Kald filerne KonfigR1_ og dit navn, KonfigR2_ og dit navn og KonfigSW_ og dit navn.

Eksempel: KonfigR1_Anders_J.txt, KonfigR2_Anders_J.txt og KonfigSW_Anders_J.txt

Konfigurationsfilerne uploades til itslearning.com sammen med Packet Tracer filen, der ligeledes har fået dit navn.

Eksempel: Midtvejs_Anders_J.pkt

HUSK at placere noter i Packet Tracer med information om netværks- og interface IP adresser.

Feedback:

Alle elever får selvfølgelig feedback på evalueringen.

Rigtig god fornøjelse ☺

Navn:_____ Klasse:_____ Dato:_____

Midtvejsevaluering – Netværk. Teoretisk del.

Opgave 1)

a) Du skal skrive OSI modellen ind i skemaets to første kolonner ift. lagets nummer og navn.

b) Skriv i kolonnen PDU, hvilken "form" PDU'en tager på vej ned gennem lagene.
Du kan vælge mellem: Frame – Data – Bit – Packet og Segment.

c) I sidste kolonne skal du vise, hvilke lag fra OSI modellen der er lagt sammen ift. TCP/IP modellen.
Skriv også i skemaet, hvad lagene hedder i TCP/IP modellen.

d) I hvilket lag hører en Router hjemme? _____

e) I hvilket lag bliver der sat IP adresse på? _____

f) Et af lagene i OSI modellen har under-lag - sublayer(s). Hvilket lag er det og hvad hedder det/de? Skriv svaret herunder:

_____

Lag nr.	Lagets navn	PDU	TCP/IP model

Opgave 2)
Hvad er forskellen på logiske og fysiske adresser? Skriv svaret herunder.

_____

_____

Opgave 3)
Hvad bruges ARP til? Skriv svaret herunder.

_____

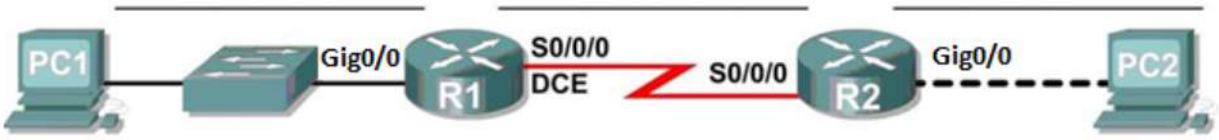
_____

Opgave 4)
Skriv mindst 3 forskellige typer netværkskabler:_____

Navn:_____ Klasse:_____ Dato:_____

Lab 6.7.5: Subnet and Router Configuration – new version

Topology Diagram



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Gig0/0			N/A
	S0/0/0			N/A
R2	Gig0/0			N/A
	S0/0/0			N/A
SW	VLAN1			N/A
PC1	NIC			
PC2	NIC			

Learning Objectives

Upon completion of this lab, you will be able to:

- Subnet an address space per given requirements.
- Assign appropriate addresses to interfaces and document.
- Configure and activate Serial and GigabitEthernet interfaces.
- Configure Switch with VLAN1 and basis configurations.
- Test and verify configurations.
- Reflect upon and document the network implementation.

Scenario

In this lab activity, you will design and apply an IP addressing scheme for the topology shown in the Topology Diagram. You will be given one address block that you must subnet to provide a logical addressing scheme for the network. The routers will then be ready for interface address configuration according to your IP addressing scheme. When the configuration is complete, verify that the network is working properly.

Use Router 1941 and Switch 2950T.

Task 1: Subnet the Address Space.

Step 1: Examine the network requirements.

You have been given the 192.168.1.0/24 address space to use in your network design. The network consists of the following segments:

- The LAN connected to router R1 will require enough IP addresses to support 15 hosts.
- The LAN connected to router R2 will require enough IP addresses to support 30 hosts.
- The link between router R1 and router R2 will require IP addresses at each end of the link.

The plan should have equal size subnets and use the smallest subnet sizes that will accommodate the appropriate number of hosts.

Step 2: Consider the following questions when creating your network design.

How many subnets are needed for this network? _____

What is the subnet mask for this network in dotted decimal format? _____

What is the subnet mask for the network in slash format? _____

How many usable hosts are there per subnet? _____

Step 3: Assign subnetwork addresses to the Topology Diagram.

1. Assign second subnet to the network attached to R1.
2. Assign third subnet to the link between R1 and R2.
3. Assign fourth subnet to the network attached to R2.

Task 2: Determine Interface Addresses.

Step 1: Assign appropriate addresses to the device interfaces.

1. Assign the first valid host address in second subnet to the LAN interface on R1.
2. Assign the second valid host address in second subnet to VLAN1 on SW.
3. Assign the last valid host address in second subnet to PC1.
4. Assign the first valid host address in third subnet to the WAN interface on R1.
5. Assign the last valid host address in third subnet to the WAN interface on R2.
6. Assign the first valid host address in fourth subnet to the LAN interface of R2.
7. Assign the last valid host address in fourth subnet to PC2.

Step 2: Document the addresses to be used in the table provided under the Topology Diagram.

Task 3: Configure the Serial and GigabitEthernet Addresses.

Step 1: Configure the router interfaces and basic configurations.

Configure the interfaces on the R1 and R2 routers with the IP addresses from your network design, and configure all the basic configurations regarding security. Please note, to complete the activity in Packet Tracer you will be using the Config Tab. When you have finished, be sure to save the running configuration to the NVRAM of the router.

Basic configurations for the routers regarding security:

- Hostname, use **R1** and **R2**
- enable password, use **cisco**
- console password, use **classcon**
- vty password, use **classvty**
- encryption of clear tekst password
- banner

Step 2: Configure the PC interfaces.

Configure the Ethernet interfaces of PC1 and PC2 with the IP addresses and default gateways from your network design.

Step 3: Configure the Switch with VLAN1 and basic configurations.

Configure the Switch with VLAN1 using the IP address from your network design and configure all the basic configurations regarding security:

- Hostname, use **SW**
- enable password, use **cisco**
- console password, use **classcon**
- vty password, use **classvty**
- encryption of clear tekst password
- banner

Task 4: Verify the Configurations.

Answer the following questions to verify that the network is operating as expected.

From the host attached to R1, is it possible to ping the default gateway? _____

From the host attached to R2, is it possible to ping the default gateway? _____

From the router R1, is it possible to ping the Serial 0/0/0 interface of R2? _____

From the router R2, is it possible to ping the Serial 0/0/0 interface of R1? _____

Task 5: Reflection

Are there any devices on the network that cannot ping each other?

_____

_____

What is missing from the network that is preventing communication between these devices?

_____

_____