ARKITEKTURE KOMPJUTERI
LEKSIONI VII

Troubleshooting te kompjuterit, hyrje ne modelet OSI dhe TCP/IP

Lektor

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Troubleshooting

- Term nderkombetar, kuptimi i te cilit eshte ashtu sic perkthehet – pra zgjidhja e problemeve (shooting the trouble)

- Problematika kryesore, eshte pamundesia e nje kompjuteri per te dale ne internet .

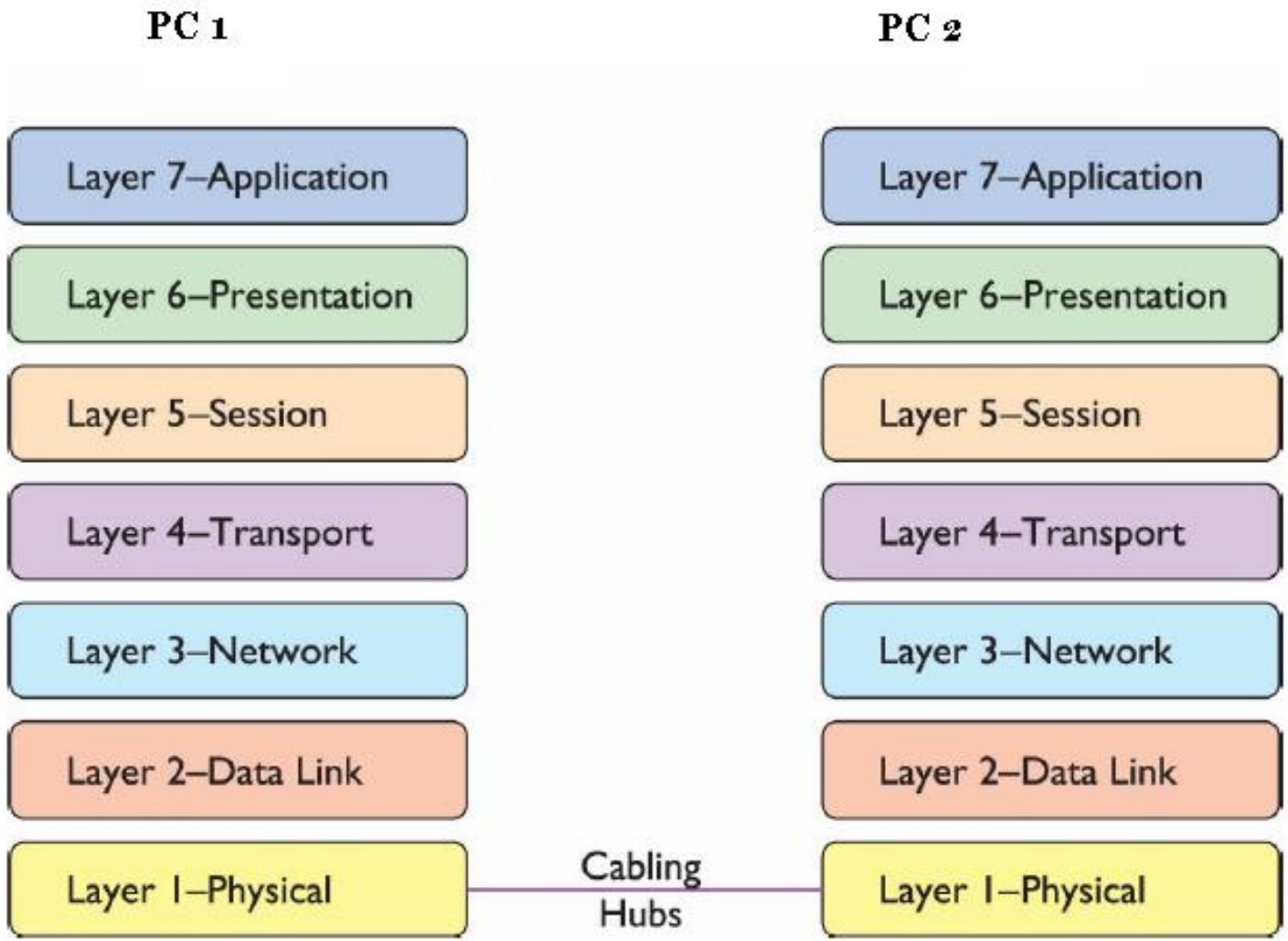
- Normalisht duhen ndjekur disa hapa per te dale ne konkluzionin, se ku qendron problematika

OSI LAYERS

- Per ta kuptuar me mire problematiken, duhen njohur modelet OSI dhe TCP/IP, pasi secili component perfshihet ne nje nga keto layers

- **Layer 7** Application
- **Layer 6** Presentation
- **Layer 5** Session
- **Layer 4** Transport
- **Layer 3** Network
- **Layer 2** Data Link
- **Layer 1** Physical

OSI LAYER 1


PC 1
PC 2
Layer 7–Application
Layer 6–Presentation
Layer 5–Session
Layer 4–Transport
Layer 3–Network
Layer 2–Data Link
Layer 1–Physical
Cabling
Hubs
Layer 7–Application
Layer 6–Presentation
Layer 5–Session
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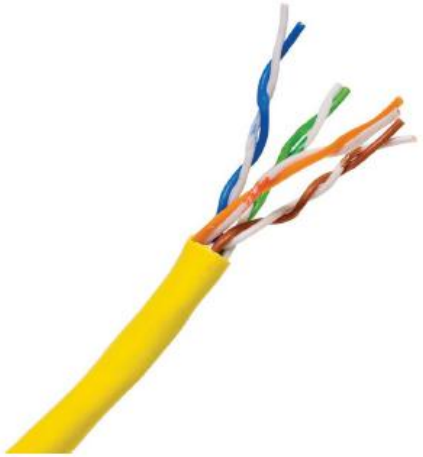
Layer 1–Physical

LAYER 1 - Physical

Kabllimet dhe HUBs

- Kabllimet perfshijne :



Ethernet, Fiber, Wireless

- HUBs

Eshte pajisja me e thjeshte qe sherben si shperndares i rrjetit.

Eshte i pamenaxhueshem

NIC – Network Interface Card

- Layers jane koncepte. Si te tilla, ka ide te ndryshme, se ne cilin Layer vendoset nje pajisje.

- Diskutime te tilla – nese NIC duhet te perfshihet ne Layer1 apo 2 – vazhdojne sot e kesaj dite.

- Per te kuptuar kete elemenet NIC, te shofim nga se perbehet ai.

NIC – Network Interface Card

- Ne nje network, kur dergohet nje informacion drejt nje kompjuteri, eshte I nevojshem nje “**Unique Identifier**”.

- Mac Address – Media Access Control Address 48 bits

Si merret, dhe kush e jep kete MAC addresse.

- Kompania X komunikon me IEEE (**Institute of Electrical and Electronic Engineers**), dhe kjo e fundit i akordon nje grup MAC adresash.

NIC – Network Interface Card

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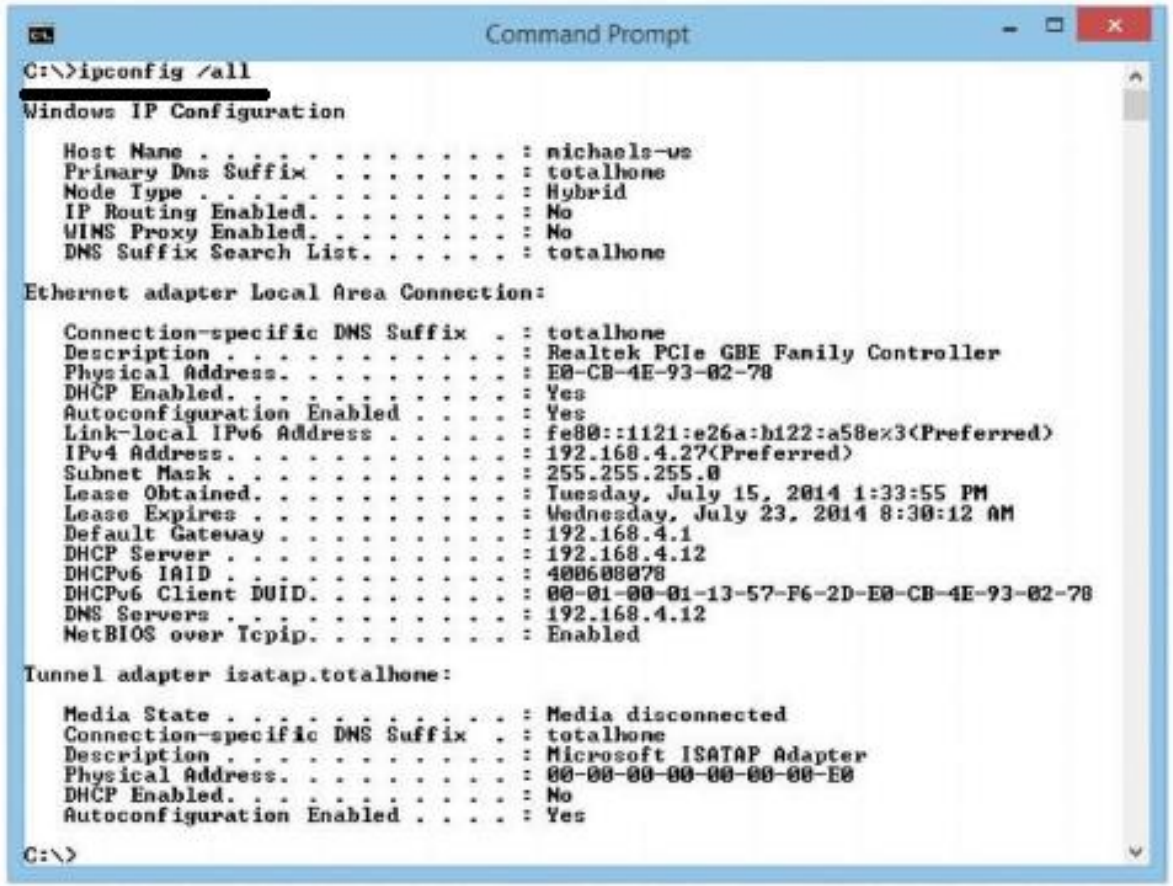
- Kompania X i vendos cdo NIC-u nje

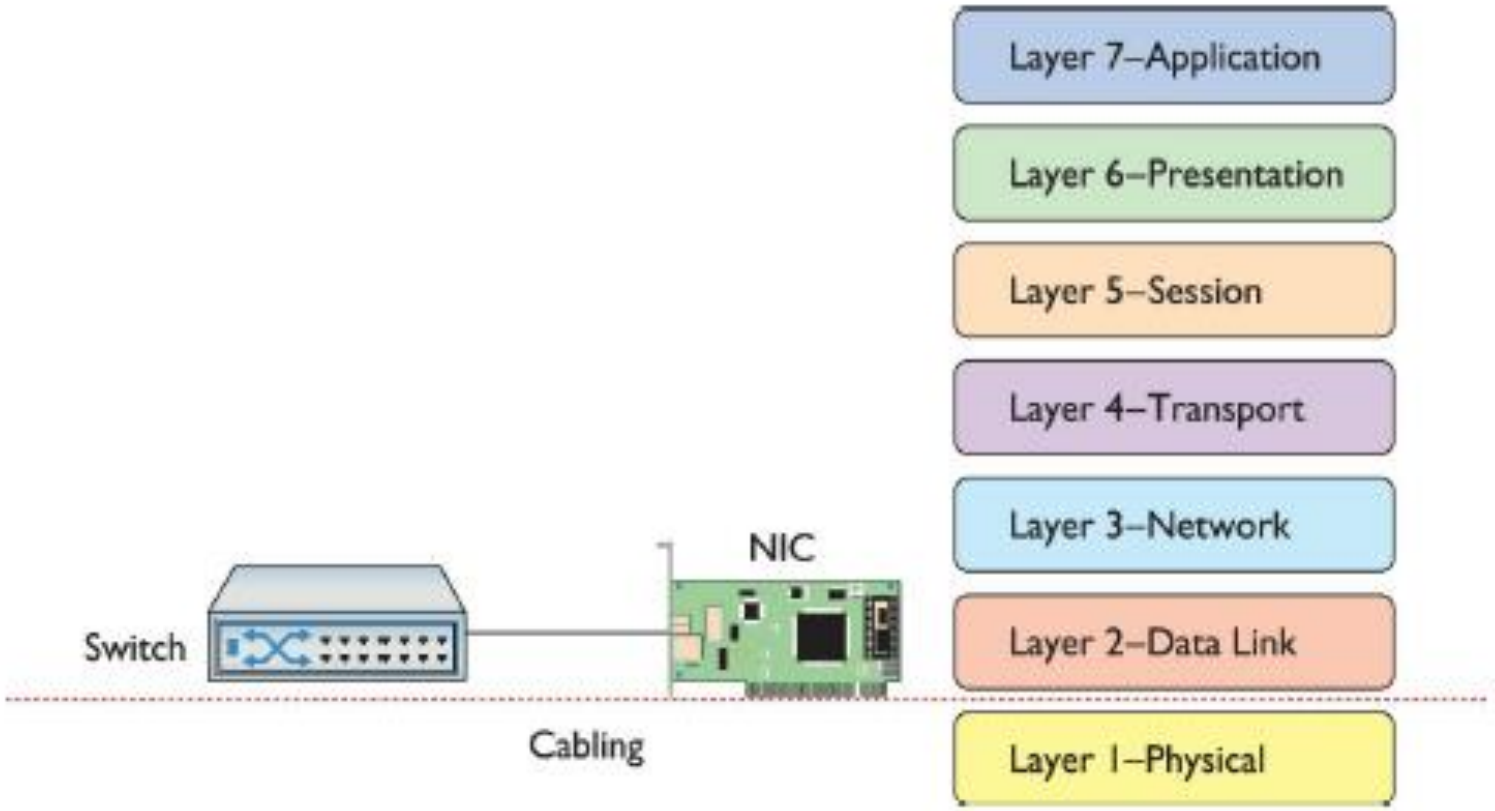
  Mac addrese te tille, ne ROM Chip te NIC.



Layer 2 – Data Link

- Ku dallon Hub nga Switch

(jo) Filtrim i MAC address



Dy aspekte te NIC

Informacioni rrjedhe para-mbrapa, duke marre dhe derguar informacion ndermjet dy NICs.

Dy aspektet, apo punet e NIC jane :

1. LLC – **Logical Link Control**, eshte puna e pare qe ben NIC

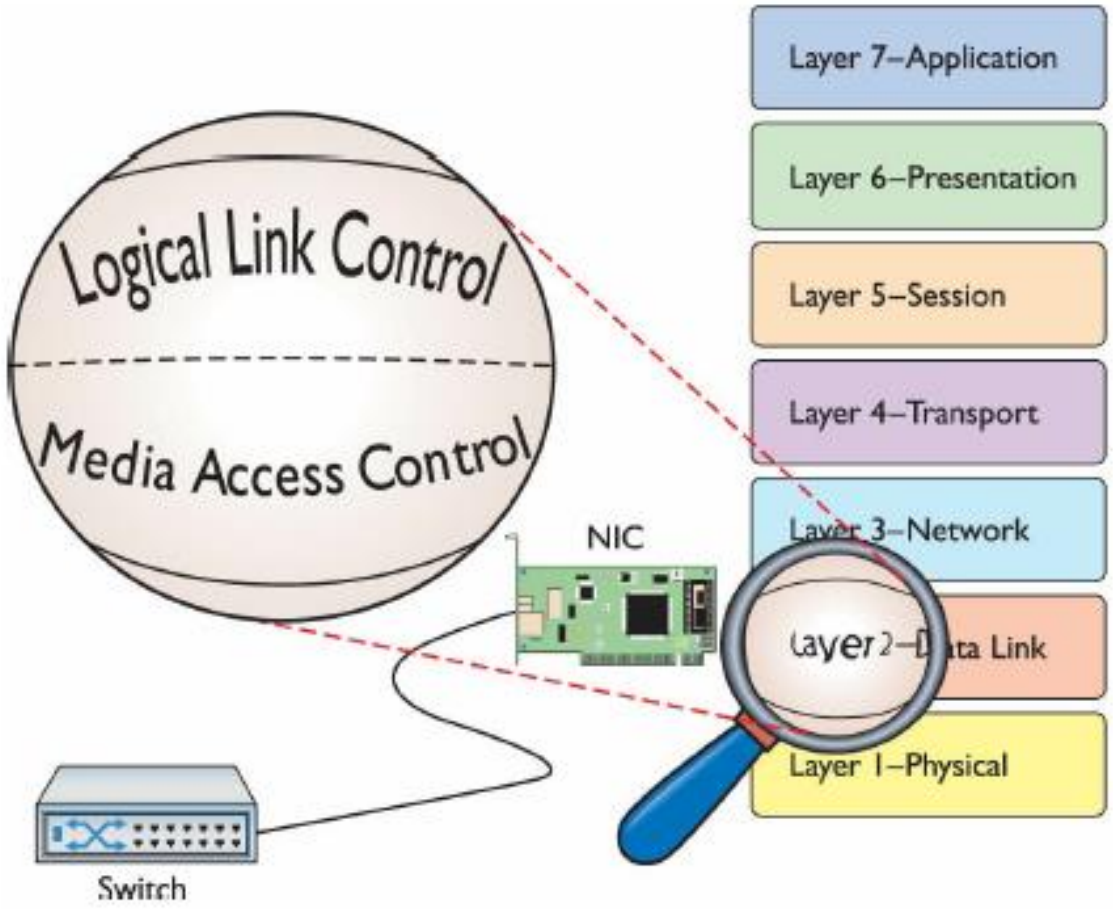
Komunikon me OS, nepermjet Drivers te PC, dhe **transmeton** Data nepermjet Protocols (c'jane protocols ?)

2. MAC – **Media Access Control**, eshte puna e dyte, qe konsiston ne **krijimin e Frames**, dhe **adresimin** e tyre. Cdo Frame permban dy MAC addresa (mac te kujt ?)

NIC

- Layer 2 – Data link

SWITCH jo HUB

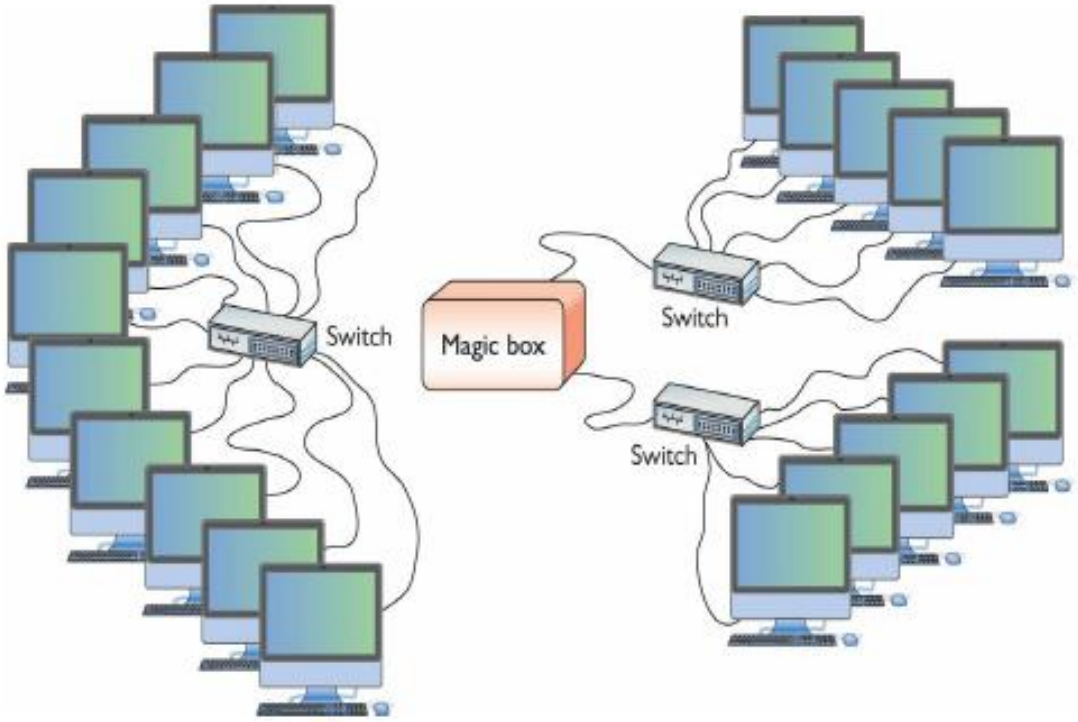


Layer 3 – Network Layer

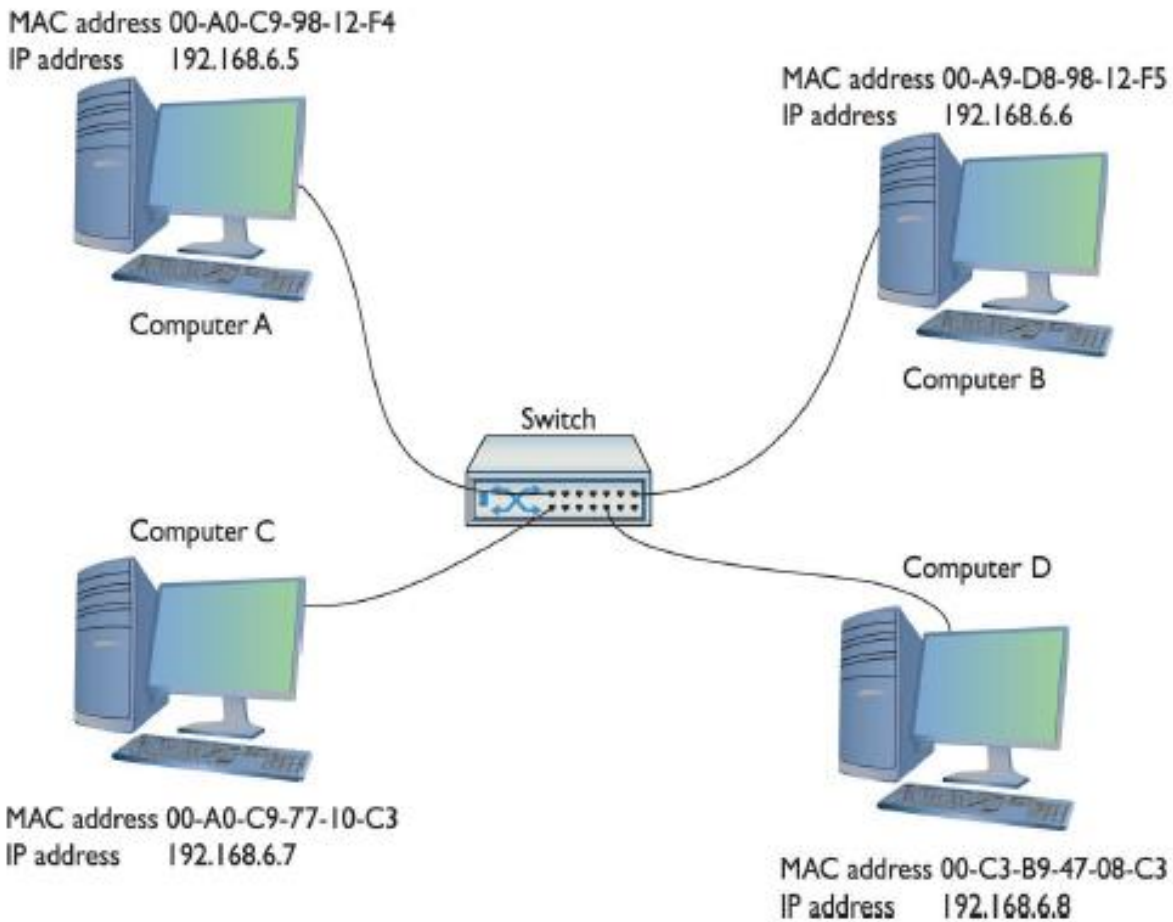
- Cfare ndodh, nese kemi te bejme me komunikimin ndermjet dy godinave,

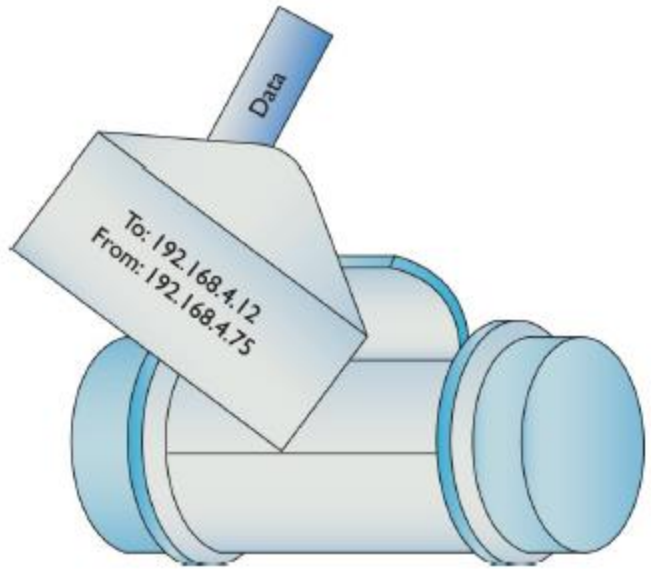
- E pamundur qe komunikimi te jete
  mbi baze MAC adresash

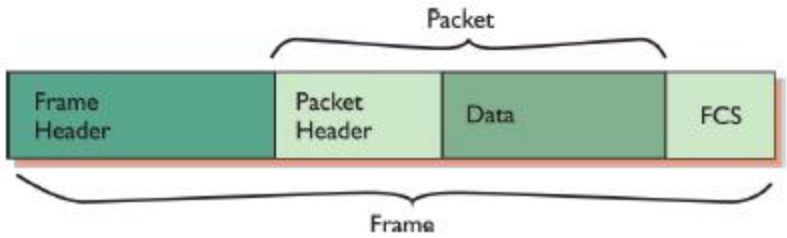
Komunikimi arrihet mbi baze te
ca protokolleve se bashku, qe perfshihen
ne ate qe ne quajme TCP/IP Suite
por qe punen me te madhe e kryejne TCP
dhe IP



Layer 3 – Paketa IP





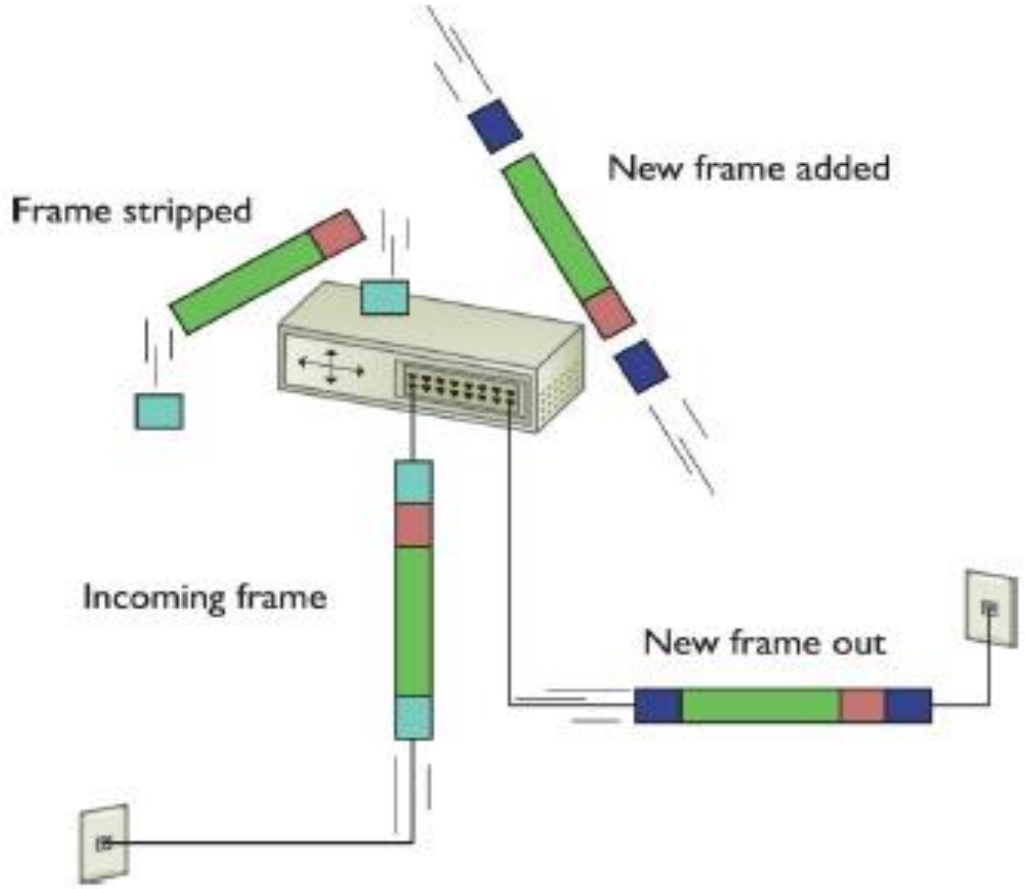


Layer 3 – Network Layer

- Cdo pakete (email etj), qe del nga PC dhe niset per ne destinacion, do kaloje neper Routers te ndryshem.

- Cdo router i heq nje frame header paketes duke i vendosur nje frame tjeter

- Ne momentin qe paketa mberrin ne destinacion, router I vendos ne frame, **mac adresen** e duhur te PC



Layer 4 – Transport Layer

Dy detyrat e Transport Layer

1. Segmentation

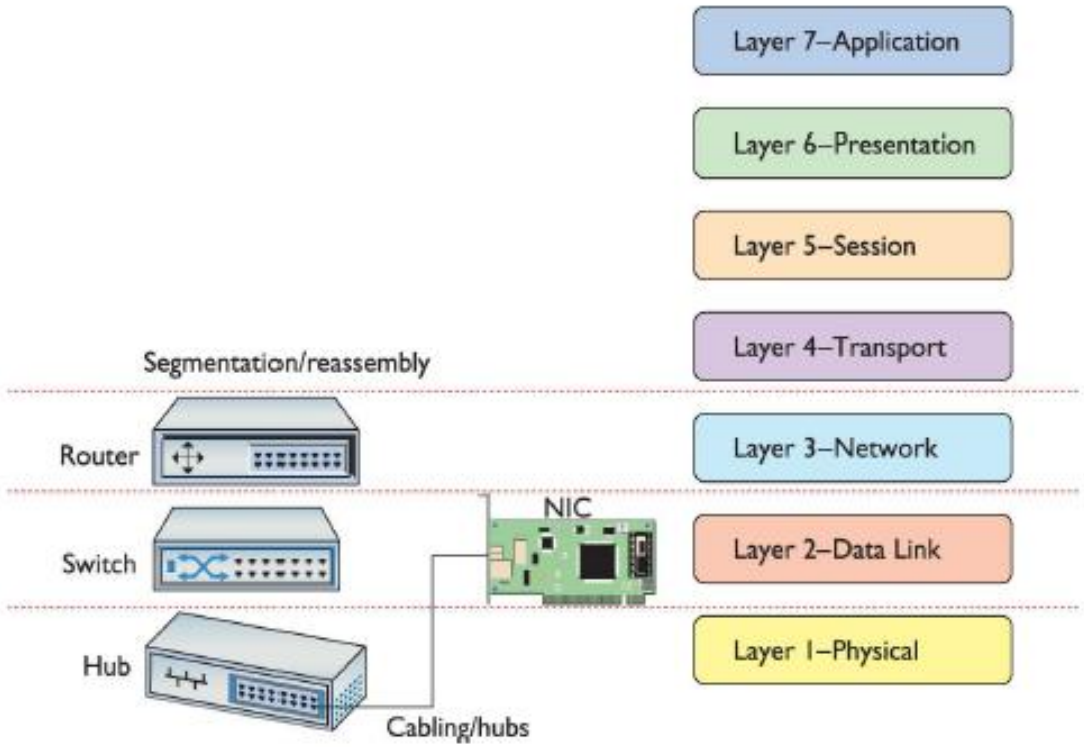
Kur nje PC do te dergoje nje Email drejt nje PC tjeter, athere detyra e PC (ne bashkepunim me OS), eshte qe te “copetoje” kete email, ne pjese perberese te vogla, ne menyre qe ta beje gati per NIC te vet si fillim (pastaj per dergim).

Pikerisht ky process quhet SEGMENTIM - DERGUESI

2. Reassembly

E kunderta e Segmentation. Eshte detyra qe ka PRITESI, qe ato paketa te c’organizuara qe i kane ardhur, ti riorganizoje

Transport Layer 4



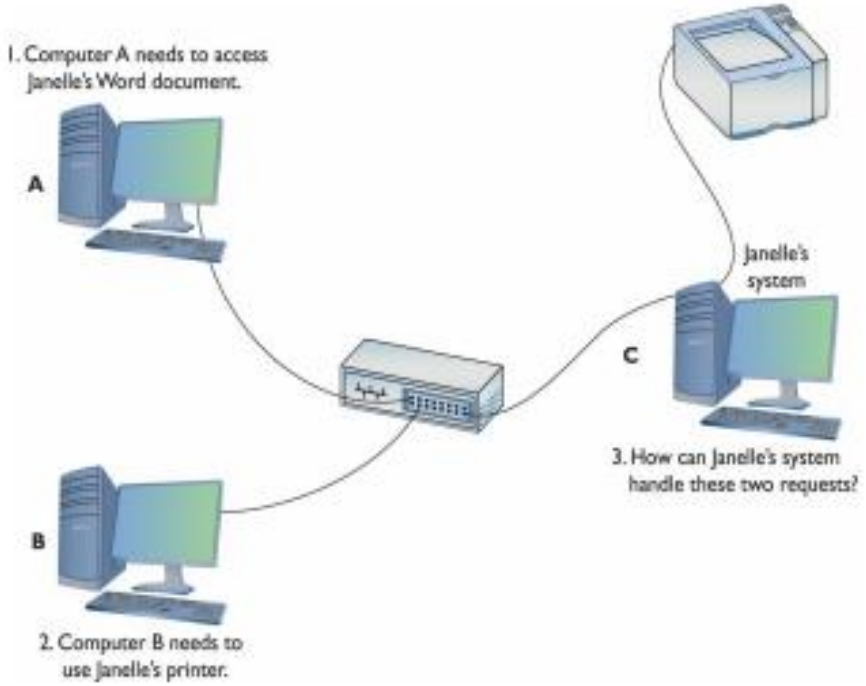
Sessioin Layer 5

- Ka lidhje me komunikimin ndermjet dy OS, ne menyre qe te arrihet transferimi i te dhenave ndermjet tyre.

- Pra PC1 duhet te sigurohet qe PC2 te marre informacionin qe i pari i dergon te dytit

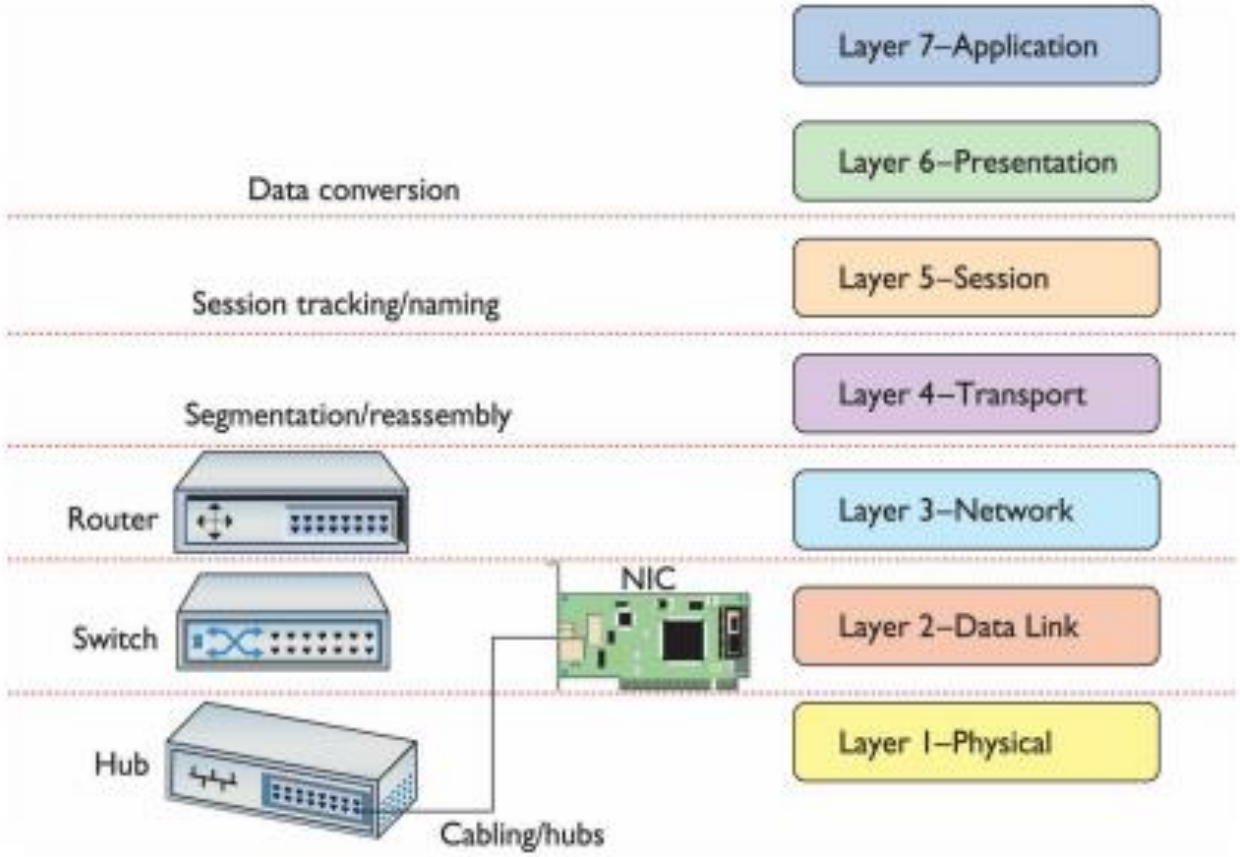
- Jepni shembull te nje

  Session layer



Presentation Layer 6

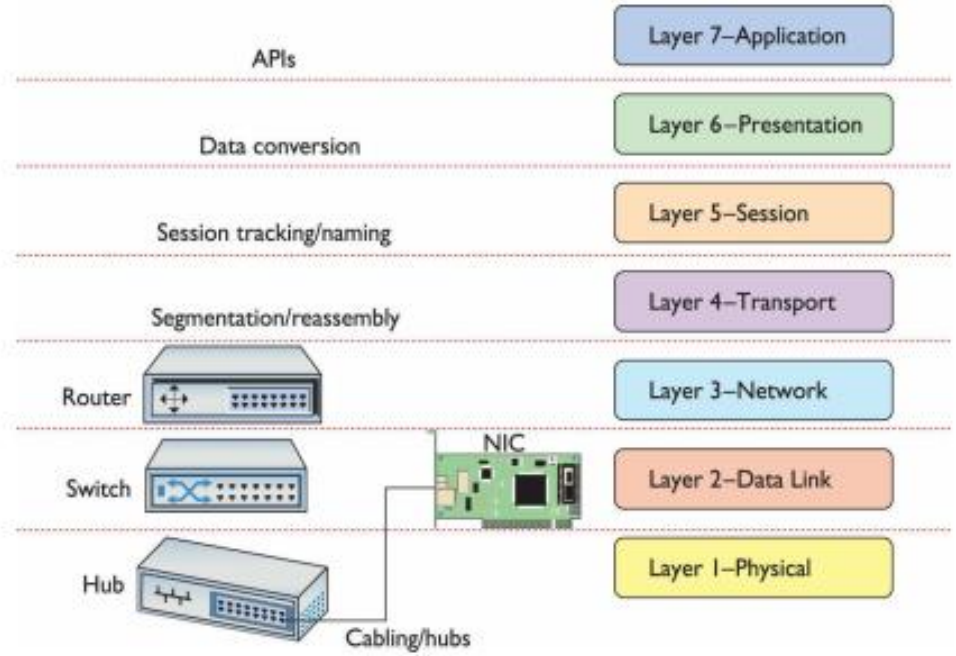
- SSL, TSL, Data encryption,
- E-commerce



Application Layer 7

- Ka lidhje me funksionalitetet e nje programi qe po perdorim.

- Psh nese duam t'í vendosim nje passw, nje word document, athere perdoret Application Layer



Konfigurimi i nje ROUTER

- IP address – IP addresa e nje routeri, e cila duhet te jete unike ne bote, ne rastin standart. Router duhet te kete IP Publike.
- Subnet Mask – percakton range apo vlan, ku do beje pjese IP e ketij router.
- Gateway – eshte nje router tjeter pasardhes, I cili sherben si porte dalese per kete routerin tone.
- DNS – perkthen url (emrin e faqes) ne IP