Generated Data
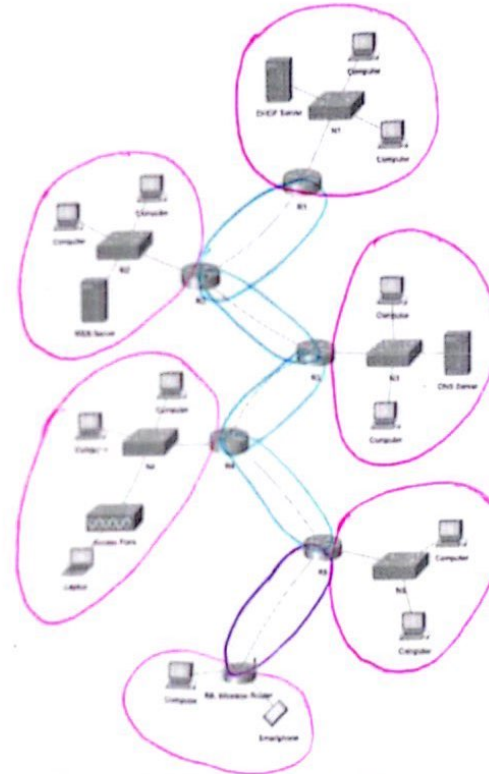
Network IP: 24.159.164.0

Mask: 255.255.255.0 (/24)

Sub networks:

- N1: 48 IP's
- N2: 48 IP's
- N3: 20 IP's
- N4: 16 IP's
- N5: 4 IP's

Network Topology

PROIECT CISCO

Reteaua iP: 24.159.164.0

Mask: 255.255.255.0 (/24) $\longrightarrow$ num mask = 24 $\longrightarrow$ $2^{(32-24)} = 256$ adrese iP disponibile

Sub retele: H1: 48 iP's
H2: 48 iP's
H3: 20 iP's
H4: 16 iP's
H5: 4 iP's

Adresele iP sunt alocate in puteri di 2

$\rightarrow$ H1: $2^6 = 64 \longrightarrow$ mask: 26
$\rightarrow$ H2: $2^6 = 64 \longrightarrow$ mask: 26
$\rightarrow$ H3: $2^5 = 32 \longrightarrow$ mask: 27
$\rightarrow$ H4: $2^4 = 16 \longrightarrow$ mask: 27
$\rightarrow$ H5: $2^3 = 8 \longrightarrow$ mask: 29

$64 + 64 + 32 + 16 + 8 = 184 < 256$

(Nu am folosit 2^2, deoarece avem nevoie de minim 6 adrese totale, adică 4 pentru dispozitive totale și 2 pentru adrese speciale)

Subretele:

H1: 24.159.164.0/26	.1	.2	
H2: 24.159.164.64/26	.65	.66	S2 web
H3: 24.159.164.128/27	.129	.130	S3 dns
H4: 24.159.164.160/27	.161		
H5: 24.159.164.192/29	.193		

RIP:
activarea protocolului
router rip
version 2
network [retea]

Alte retele de care avem nevoie:

			R1	R2	
H12: 2iP+2 < 4 $\longrightarrow$ 24.159.164.200/30			.201	.202	; broadcast = 24.159.164.203
H23: 2iP+2 < 4 $\longrightarrow$ 24.159.164.204/30			R2 .205	R3 .206	; broadcast = 24.159.164.207
H34: 2iP+2 < 4 $\longrightarrow$ 24.159.164.208/30			R3 .209	R4 .210	; broadcast = 24.159.164.211
H45: 2iP+2 < 4 $\longrightarrow$ 24.159.164.212/30			R4 .213	R5 .214	; broadcast = 24.159.164.215
H5W: 2iP+2 < 4 $\longrightarrow$ 24.159.164.216/30			R5 .217	R4 .218	; broadcast = 24.159.164.219

mask de subretea pentru fiecare: 255.255.255.252 /30
(subnet mask)

①

SCHEMA:

Router: → .orm stins router-ul
   → J-orm atasat 4 plăci FastEthernet
   → l-orm hpornit

Comutamo:
• PC-urilor Jo switch-uri   } COPPER STRAIGHT-THROUGH, folosind oricom plăcii de tipo FastEthernet
• serverelor Jo switch-uri
• dim switch ăm router (primo plăcă do tipo FastEthernet ──→ COPPER STRAIGHT-THROUGH)

R1 → config: ip Address: 24.159.164.1
          Subnet Mask: 255.255.255.192

Server 1 → ip configuration: ip Address: 24.159.164.2
                   Subnet Mask: 255.255.255.192
                   Default Gateway: 24.159.164.1
                   DNS server: ✓24.159.164.130

PC-uri: thurm pe static, ulterior pe DHCP.

R2 → config: ip Address: 24.159.164.65
          Subnet Mask: 255.255.255.192

Server 2
WEB ──→ ip configuration: ip Address: 24.159.164.66
                   Subnet Mask: 255.255.255.192
                   Default Gateway: 24.159.164.65
                   DNS server: 24.159.164.130

        └──→ Services | File Name: index.html
                      } Text: New Page

        └──→ Web Browser: URL: http://24.159.164.66 ──────→ New Page

R3 → config: ip Address: 24.159.164.129
          Subnet Mask: 255.255.255.224

Server 3
DNS ──→ ip configuration: ip Address: 24.159.164.130
                   Subnet Mask: 255.255.255.224
                   Default Gateway: 24.159.164.129
                   DNS Server: 24.159.164.130

        └──→ Services ─→ DNS { DNS Service   • On   } Add
                            { Name: x.com
                            { Address: 24.159.164.66

②

↳ config: IP Address: 24.159.164.196
Subnet Mask: 255.255.255.248

R4 → config: IP Address: 24.159.164.161
Subnet Mask: 255.255.255.224

Am configurat router-ul astfel încât să fie un nou server de DHCP.
comanzi în CLI: enable
configure t
ip dhcp pool x
?
network 24.159.164.160?
A.B.C.D. network mask
network 24.159.164.160 255.255.255.224
default-router 24.159.164.161
dns-server 24.159.164.130
Ctrl + Z
write memory

Legăm **Access Point-ul** cu COPPER STRAIGHT-THROUGH Port 0 la R4.
Laptop-ul
  - îl oprim
  - scoatem placa de rețea de cupru
  - și atașăm placa de rețea wireless WPC 300N
  - îl pornim

↳ mi s-a asociat la router-ul wireless, astfel accesez AccessPoint Port 1 și denumesc SSID 'a'.
↳ Configuray laptop-ul astfel încât denumeste ssid 'a'. Din cauză că laptop-ul s-a asociat întâi la router-ul wireless, adresele ip nu sunt corespunzătoare. Astfel, întrăm pe desktop → ip configuration
→ îl trecem pe static, iar apoi pe DHCP.

Wireless Router → config → Internet Settings → static: Default Gateway: 24.159.164.217
IP Address: 24.159.164.218
Subnet Mask: 255.255.255.252
DNS Server: 24.159.164.130

③

Legăm routerele între ele cu Copper Cross-Over.
  └→ FastEthernet eo toate: R1   R2
                             1/0   1/0

                             R2   R3
                             2/0   1/0

                             R3   R4
                             2/0   1/0

                             R4   R5
                             2/0   1/0

                             R5   ↗
                             2/0   Internet

Configurăm în RW ──→ Wireless settings, jor la wireless, ssid: 'r'.
Leg RW cu PC prin Copper Straight-Through, deoarece RW este de fapt un switch în sine.

Smartphone { Config
              ↓
             Wireless   ═══⇒ durem du pe DHCP, pe static, so sac pe DHCP.
              ↓
             network 'r'

RANSMITEREA PACHETELOR.
— rutare statică
— în router ──→ Config ──→ Static Routes | Network
                                          | Mask
                                          | Next Hep

R1 ──→ direct conectate: H1: 24.159.164.0/26
   │   H12: 24.159.164.200/30
   │
   └→ rute statice: H2: 24.159.164.64
                        255.255.255.192
                        24.159.164.202

                    H3: 24.159.164.128
                        255.255.255.224
                        24.159.164.202

                    H4: 24.159.164.160
                        255.255.255.224
                        24.159.164.202

(4)

255.255.255.248
24.159.164.202

H23: 24.159.164.204
255.255.255.252
24.159.164.202

H34: 24.159.164.208
255.255.255.252
24.159.164.202

H45: 24.159.164.212
255.255.255.252
24.159.164.202

H5W: 24.159.164.216
255.255.255.252
24.159.164.202

R2 → direct connected: H2: 24.159.164.64/26
H12: 24.159.164.200/30
H23: 24.159.164.204/30

→ state statics: H1: 24.159.164.0
255.255.255.192
24.159.164.201

H3: 24.159.164.128
255.255.255.224
24.159.164.206

H4: 24.159.164.160
255.255.255.224
24.159.164.206

H5: 24.159.164.192
255.255.255.248
24.159.164.206

H34: 24.159.164.208
255.255.255.252
24.159.164.206

H45: 24.159.164.212
255.255.255.252
24.159.164.206

H5W: 24.159.164.216
255.255.255.252

5

subnet addresses: All: 24.155. 104/28

  M23: 24.155. 104. 204/30
  High: 24.155. 104. 208/30

→ route whether: AU: 24.155. 104. 0
                 255.255.255. 192
                 24.155. 104. 205

  M1: 24.155. 104. 64
      255.255.255. 192
      24.155. 104. 205

  M4: 24.155. 104. 160
      255.255.255. 224
      24.155. 104. 210

  M3: 24.155. 104. 192
      255.255.255. 248
      24.155. 104. 210

  M2: 24.155. 104. 200
      255.255.255. 252
      24.155. 104. 205

  M5: 24.155. 104. 212
      255.255.255. 252
      24.155. 104. 210

  M5w: 24.155. 104. 216
       255.255.255. 252
       24.155. 104. 210

→ direct connected: AU: 24.155. 104. 100 /23
                    M3w: 24.155. 104. 208 /30
                    M4w: 24.155. 104. 192 /30

→ route whether: AU: 24.155. 104. 0
                 255.255.255. 192
                 24.155. 104. 209

  M1: 24.155. 104. 64
      255.255.255. 192
      24.155. 104. 209

  M4: 24.155. 104. 112
      255.255.255. 224
      24.155. 104. 209

N5: 24.159.164.192
    255.255.255.248
    24.159.164.214

H12: 24.159.164.200
    255.255.255.252
    24.159.164.209

H23: 24.159.164.204
    255.255.255.252
    24.159.164.209

H5W: 24.159.164.216
    255.255.255.252
    24.159.164.214

R5 → direct connected: H5: 24.159.164.192 /29
                       HH5: 24.159.164.212 /30
                       H5W: 24.159.164.216 /30

   → rute static: H1: 24.159.164.0
                     255.255.255.192
                     24.159.164.213

                  H2: 24.159.164.64
                     255.255.255.192
                     24.159.164.213

                  H3: 24.159.164.128
                     255.255.255.224
                     24.159.164.213

                  H4: 24.159.164.160
                     255.255.255.224
                     24.159.164.213

                  H12: 24.159.164.200
                     255.255.255.252
                     24.159.164.213

                  H23: 24.159.164.204
                     255.255.255.252
                     24.159.164.213

                  H34: 24.159.164.208
                     255.255.255.252
                     24.159.164.213

Verificoha pachutador:

PC → Desktop → Commmond Prompt → ping 24.159.164. ...?