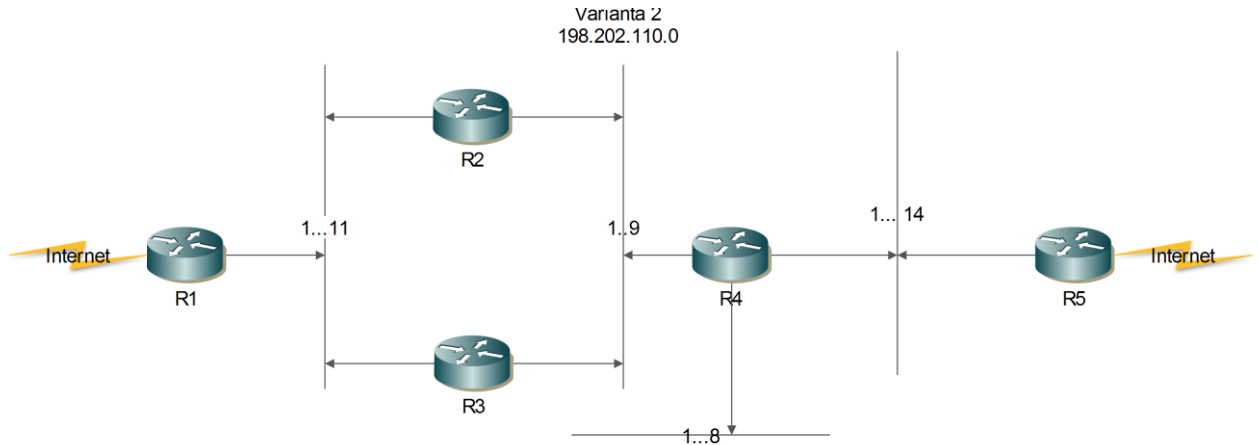


Rezolvare de Probeleme

Fie este definita tipologia unei rețele de calculatoare



Sa se:

1. Calculeze MASCA pentru fiecare subretea;
2. Sa se repartizeze spatiul de adrese IP pentru fiecare subretea mentionandu-se destinatia acesteia;
3. Sa se elaboreze Tabela de rutare pentru fiecare Router in parte;
4. Sa se demonstreze functionalitatea configuratiilor egectuate.

Formula de calcul:

$$N = \lceil \log_2(\max\{m_1, m_2, m_3, \dots, m_n\} + 2) \rceil,$$

Unde: $m_1, m_2 \dots$ - numarul de Host-uri in fiecare subretea;

Max – valoarea maximala din sirul de numere;

\log_2 – logarifm in baza 2;

$\lceil \dots \rceil$ - rotungere pina la numarul intreg mai mare.

In baza topologiei se formuleaza egalitatea:

$$N = \lceil \log_2(\max\{11, 9, 8, 14\} + 2) \rceil = \lceil \log_2(16) \rceil = 4.$$

$N=4$ – indica numarul de zerouri in masca subretelei si 2^{*4} – indica numarul maximal de adrese in subretea.

Masca tuturor subretelelor este:

11111111.11111111.11111111.11110000 – in cod binar

255.255.255.240 in cod zecimal.

Modul de calcul:

255.255.255.255-

000.000.000.15

255.255.255.240.

Pentru calcul se ea Adresa care este definita in intervalul de 16 adrese.

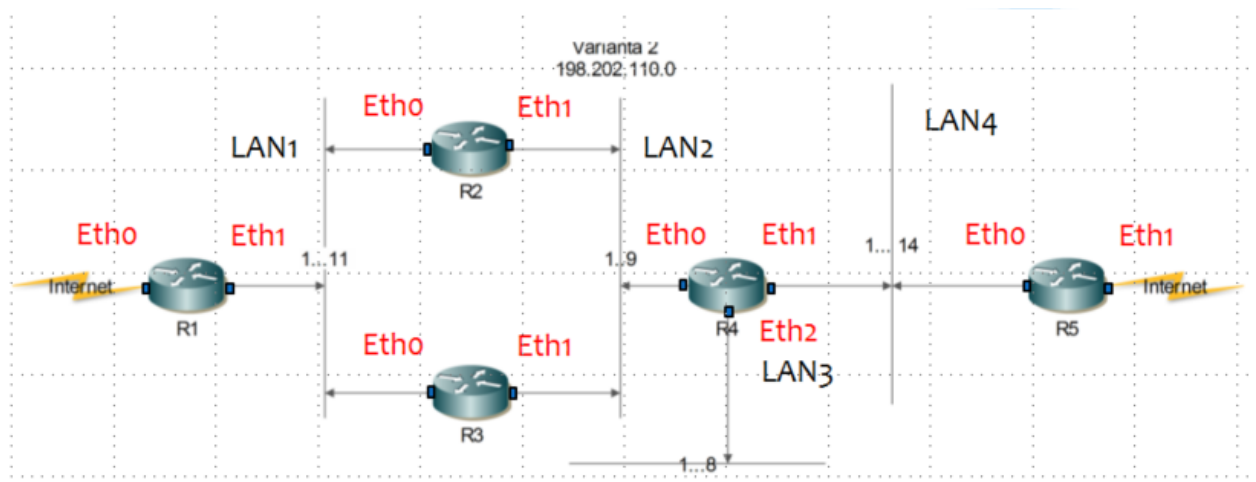
0.1.2.3.4.5.6.7.8.9.10.11.12.13.14.15 = 16 adrese.

Masca = 255.255.255.240 = 198.202.110.0/28 ->

32 - 4 = 28 – masca.

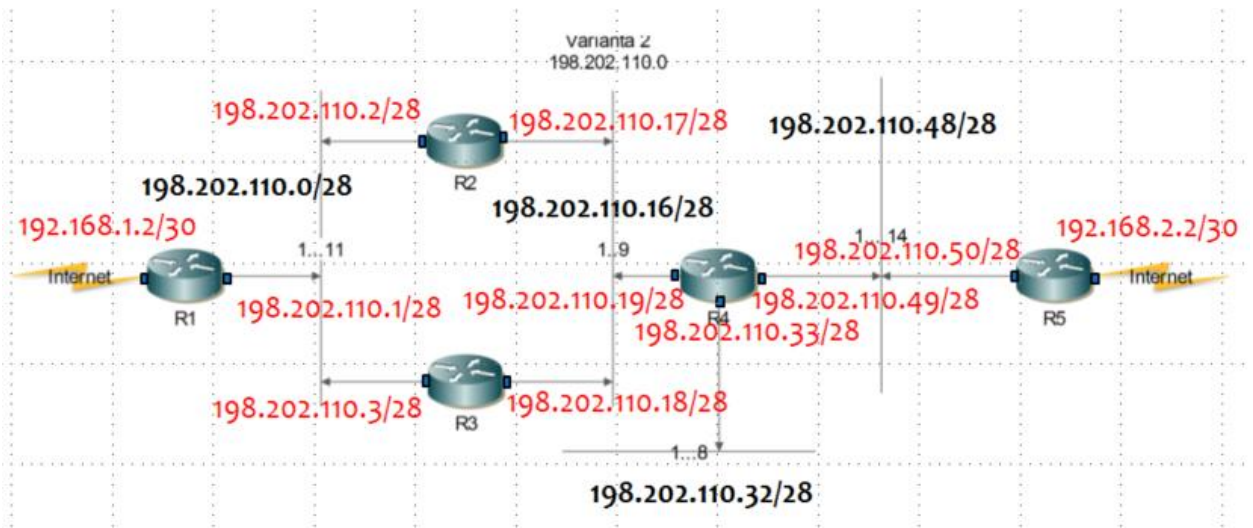
SN	IP SN	SN Masc	Destinatie
LAN1	198.202.110.0 198.202.110.1 198.202.110.15	255.255.255.240	SN IP Address Broadcast IP Address
LAN2	198.202.110.16 198.202.110.17 198.202.110.31	255.255.255.240	SN IP Address Broadcast IP Address
LAN3	198.202.110.32 198.202.110.33 198.202.110.47	255.255.255.240	SN IP Address Broadcast IP Address
LAN4	198.202.110.48 198.202.110.49 198.202.110.63	255.255.255.240	SN IP Address Broadcast IP Address

Marcarea porturilor pentru Routere (se realizează în PAINT)

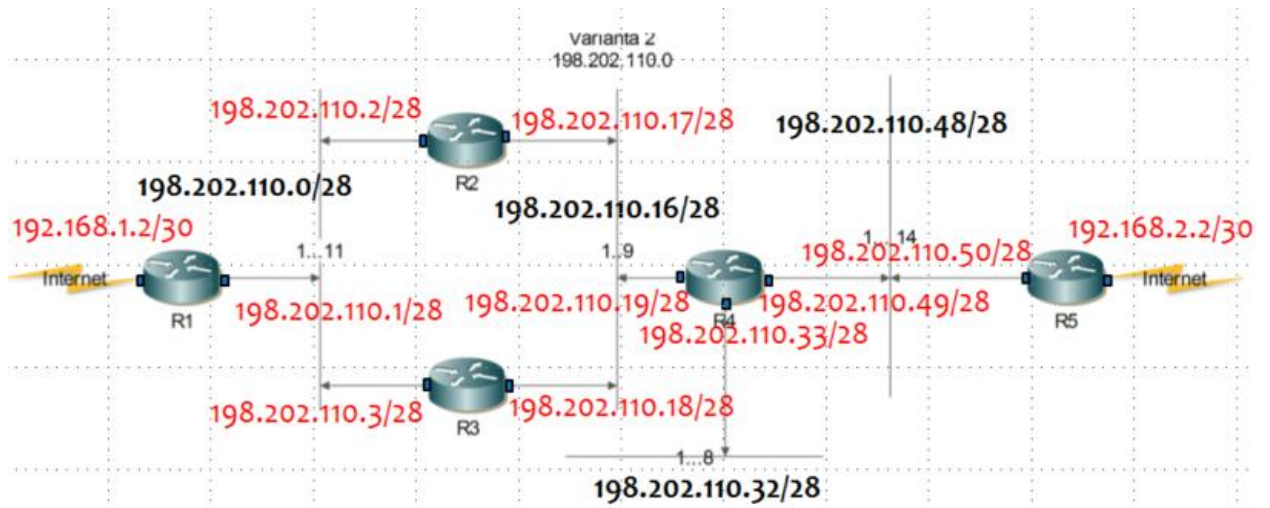


Router	IP SN	SN Masca	Ethernet port
R1	198.202.110.0	255.255.255.240	Eth1
	198.202.110.16	255.255.255.240	Eth1
	198.202.110.32	255.255.255.240	Eth1
	198.202.110.48	255.255.255.240	Eth1
	..*.*	0.0.0.0	Eth0
R2	198.202.110.0	255.255.255.240	Eth0
	198.202.110.16	255.255.255.240	Eth1
	198.202.110.32	255.255.255.240	Eth1
	198.202.110.48	255.255.255.240	Eth1
	..*.*	0.0.0.0	Eth0
R3	198.202.110.0	255.255.255.240	Eth0
	198.202.110.16	255.255.255.240	Eth1
	198.202.110.32	255.255.255.240	Eth1
	198.202.110.48	255.255.255.240	Eth1
	..*.*	0.0.0.0	Eth0
R4	198.202.110.0	255.255.255.240	Eth0
	198.202.110.16	255.255.255.240	Eth0
	198.202.110.32	255.255.255.240	Eth2
	198.202.110.48	255.255.255.240	Eth1
	..*.*	0.0.0.0	Eth1
R5	198.202.110.0	255.255.255.240	Eth0
	198.202.110.16	255.255.255.240	Eth0
	198.202.110.32	255.255.255.240	Eth0
	198.202.110.48	255.255.255.240	Eth0
	..*.*	0.0.0.0	Eth1

Marcarea adreselor IP pentru fiecare port si SN (se realizează în PAINT)



Exemplu de parcugere a traseului din IP:198.202.110.7 -> IP:198.202.110.37 (se realizează în PAINT)



Calculam adresa IP a SN pentru IP:198.202.110.7 si IP:198.202.110.37:

198.202.110.7	AND	198.202.110.37	AND
255.255.255.240		255.255.255.240	
198.202.110.0		198.202.110.32	

Traseul de transfer a pachetelor:

198.202.110.7/28 -> 198.202.110.2/28 -> 198.202.110.17/28 -> **198.202.110.16/28**
-> 198.202.110.19/28 -> 198.202.110.33/28 -> **198.202.110.37/28**