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mbfx ...   on 16 Jul 2019

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README.md

IPv4/v6

Задание:

1. Разработать и задокументировать адресное пространство;
2. Настроить IP адреса на каждом активном порту;
3. Использовать IPv4 и IPv6;

4. Задокументировать все изменения.

Решение:

1. Задокументируем используемое адресное пространство с использованием IPv4 и IPv6;
2. Задокументируем выделенные для маршрутизаторов IP-адреса;
3. Настроим IP-адреса с учетом приведённой выше схемы и задокументируем изменения:
   - Пример настройки на маршрутизаторе R1;
   - Конфигурационные файлы;
   - Итоговая графическая схема.

1. Задокументируем используемое адресное пространство с использованием IPv4 и IPv6.

Общая таблица сетей.

Network IPv4	Summary net	Network IPv6	Summary net	
90.90.128.0/24	90.90.128.0/22	20FF:CCFF:FFFF:1::/64	20FF:CCFF:FFFF::/48	
90.90.129.0/24	90.90.128.0/22	20FF:CCFF:FFFF:2::/64	20FF:CCFF:FFFF::/48	
90.90.130.0/25	90.90.128.0/22	20FF:CCFF:FFFF:3::/64	20FF:CCFF:FFFF::/48	
90.90.130.128/25	90.90.128.0/22	20FF:CCFF:FFFF:4::/64	20FF:CCFF:FFFF::/48	
90.90.131.0/25	90.90.128.0/22	20FF:CCFF:FFFF:5::/64	20FF:CCFF:FFFF::/48	
90.90.131.128/25	90.90.128.0/22	20FF:CCFF:FFFF:6::/64	20FF:CCFF:FFFF::/48	
172.16.17.0/30	not used	20FF:CCFF:1000:17::/64	not used	
172.16.18.0/29	not used	20FF:CCFF:1000:18::/64	not used	
172.16.19.0/30	not used	20FF:CCFF:1000:19::/64	not used	
172.16.20.0/30	not used	20FF:CCFF:1000:20::/64	not used	

Network IPv4	Summary net	Network IPv6	Summary net	
50.50.96.0/23	50.50.96.0/21	20FF:CCFF:200A:A1::/64	20FF:CCFF:200A::/48	
50.50.98.0/23	50.50.96.0/21	20FF:CCFF:200A:A2::/64	20FF:CCFF:200A::/48	
50.50.100.0/24	50.50.96.0/21	20FF:CCFF:200A:A3::/64	20FF:CCFF:200A::/48	
50.50.101.0/24	50.50.96.0/21	20FF:CCFF:200A:A4::/64	20FF:CCFF:200A::/48	
50.50.102.8/29	50.50.96.0/21	20FF:CCFF:200A:A5::/64	20FF:CCFF:200A::/48	
50.50.104.0/24	50.50.104.0/23	20FF:CCFF:200B:A1::/64	20FF:CCFF:200B::/48	

Network IPv4	Summary net	Network IPv6	Summary net	
50.50.105.0/25	50.50.104.0/23	20FF:CCFF:200B:A2::/64	20FF:CCFF:200B::/48	
50.50.105.128/25	50.50.104.0/23	20FF:CCFF:200B:A3::/64	20FF:CCFF:200B::/48	
35.10.0.0/21	35.10.0.0/18	20FF:CCFF:200C:A1::/64	20FF:CCFF:200C::/48	
35.10.8.0/23	35.10.0.0/18	20FF:CCFF:200C:A2::/64	20FF:CCFF:200C::/48	
35.10.10.0/23	35.10.0.0/18	20FF:CCFF:200C:A3::/64	20FF:CCFF:200C::/48	
35.10.12.0/24	35.10.0.0/18	20FF:CCFF:200C:A4::/64	20FF:CCFF:200C::/48	
35.10.64.0/24	35.10.64.0/18	20FF:CCFF:200C:B1::/64	20FF:CCFF:200C::/48	
35.10.65.0/25	35.10.64.0/18	20FF:CCFF:200C:B2::/64	20FF:CCFF:200C::/48	
35.10.65.128/27	35.10.64.0/18	20FF:CCFF:200C:B3::/64	20FF:CCFF:200C::/48	
35.10.128.0/26	35.10.128.0/18	20FF:CCFF:200C:C1::/64	20FF:CCFF:200C::/48	

Network IPv4	Summary net	Network IPv6	Summary net
35.10.192.0/24	35.10.192.0/18	20FF:CCFF:200C:D1::/64	20FF:CCFF:200C::/48
35.10.193.0/24	35.10.192.0/18	20FF:CCFF:200C:D2::/64	20FF:CCFF:200C::/48
35.10.194.0/25	35.10.192.0/18	20FF:CCFF:200C:D3::/64	20FF:CCFF:200C::/48
35.11.0.0/24	35.11.0.0/22	20FF:CCFF:200D:A1::/64	20FF:CCFF:200D::/48
35.11.1.0/24	35.11.0.0/22	20FF:CCFF:200D:A2::/64	20FF:CCFF:200D::/48
35.11.2.0/25	35.11.0.0/22	20FF:CCFF:200D:A3::/64	20FF:CCFF:200D::/48

Адреса IPv4 будут, где это возможно, в последнем октете иметь цифру, совпадающую с номером маршрутизатора на схеме, например, для маршрутизатора **R22** адрес будет иметь вид **35.10.192.22**.

Адреса IPv6 будут, где это возможно, в последнем октете иметь цифру, совпадающую с номером маршрутизатора на схеме, например, для маршрутизатора **R22** адрес будет иметь вид **20FF:CCFF:200C:D2::22**.

Link-local адреса IPv6 будут в последнем октете иметь цифру, совпадающую с номером маршрутизатора на схеме, например, для маршрутизатора **R22** все link-local адреса будут иметь вид **FE80::22**. Link-local адреса IPv6 располагаются в подсети `FE80::/10`.

Служебная информация.

Network IPv4	Summary net	Network IPv6	Summary net	Description
10.0.0.0/8	10.0.0.0/8	FC00::/8	FC00::/8	Int serv net
			20FF:CCFF::/32	All IPv6 nets

2. Задокументируем выделенные для маршрутизаторов IP-адреса.

Общая таблица сетевых адресов на интерфейсах маршрутизаторов.

Equip	Port	AddrTyp	Address	Network	De
R1	e0/0	IPv4	172.16.19.2/28	172.16.19.0/28	to
R1	e0/0	IPv6	20FF:CCFF:1000:19::2/64	20FF:CCFF:1000:19::/64	to

Equip	Port	AddrTyp	Address	Network	De
R1	e0/0	IPv6	20FF:CCFF:1000:19::2/64	20FF:CCFF:1000:19::/64	to De
R1	e0/0	IPv6 LL	FE80::1	FE80::/10	lin e0
R1	e0/1	IPv4	35.10.8.1/23	35.10.8.0/23	R1
R1	e0/1	IPv6	20FF:CCFF:200C:A2::1/64	20FF:CCFF:200C:A2::/64	R1
R1	e0/1	IPv6 LL	FE80::1	FE80::/10	lin e0
R1	e0/2	IPv4	35.10.0.1/21	35.10.0.0/21	R1
R1	e0/2	IPv6	20FF:CCFF:200C:A1::1/64	20FF:CCFF:200C:A1::/64	R1
R1	e0/2	IPv6 LL	FE80::1	FE80::/10	lin e0
R2	e0/0	IPv4	35.10.128.2/26	35.10.128.0/26	R2
R2	e0/0	IPv6	20FF:CCFF:200C:C1::2/64	20FF:CCFF:200C:C1::/64	R2
R2	e0/0	IPv6 LL	FE80::2	FE80::/10	lin e0
R2	e0/1	IPv4	35.10.8.2/23	35.10.8.0/23	R2
R2	e0/1	IPv6	20FF:CCFF:200C:A2::2/64	20FF:CCFF:200C:A2::/64	R2
R2	e0/1	IPv6 LL	FE80::2	FE80::/10	lin e0
R2	e0/3	IPv4	35.10.10.2/23	35.10.10.0/23	R2
R2	e0/3	IPv6	20FF:CCFF:200C:A3::2/64	20FF:CCFF:200C:A3::/64	R2
R2	e0/3	IPv6 LL	FE80::2	FE80::/10	lin e0
R3	e0/0	IPv4	35.10.12.3/24	35.10.12.0/24	R3
R3	e0/0	IPv6	20FF:CCFF:200C:A4::3/64	20FF:CCFF:200C:A4::/64	R3
R3	e0/0	IPv6 LL	FE80::3	FE80::/10	lin e0
R3	e0/1	IPv4	35.10.64.3/24	35.10.64.0/24	R3
R3	e0/1	IPv6	20FF:CCFF:200C:B1::3/64	20FF:CCFF:200C:B1::/64	R3

Equip	Port	AddrTyp	Address	Network	De...
R3	e0/2	IPv4	35.10.0.3/21	35.10.0.0/21	R3
R3	e0/2	IPv6	20FF:CCFF:200C:A1::3/64	20FF:CCFF:200C:A1::/64	R3
R3	e0/2	IPv6 LL	FE80::3	FE80::/10	lin e0
R3	e0/3	IPv4	35.10.65.3/25	35.10.65.0/25	R3
R3	e0/3	IPv6	20FF:CCFF:200C:B2::3/64	20FF:CCFF:200C:B2::/64	R3
R3	e0/3	IPv6 LL	FE80::3	FE80::/10	lin e0
R4	e0/0	IPv4	35.10.12.4/24	35.10.12.0/24	R4
R4	e0/0	IPv6	20FF:CCFF:200C:A4::4/64	20FF:CCFF:200C:A4::/64	R4
R4	e0/0	IPv6 LL	FE80::4	FE80::/10	lin e0
R4	e0/3	IPv4	35.10.10.4/23	35.10.10.0/23	R4
R4	e0/3	IPv6	20FF:CCFF:200C:A3::4/64	20FF:CCFF:200C:A3::/64	R4
R4	e0/3	IPv6 LL	FE80::4	FE80::/10	lin e0
R5	e0/0	IPv4	172.16.17.2/29	172.16.17.0/29	to
R5	e0/0	IPv6	20FF:CCFF:1000:17::2/64	20FF:CCFF:1000:17::/64	to
R5	e0/0	IPv6 LL	FE80::5	FE80::/10	lin e0
R5	e0/1	IPv4	50.50.105.5/25	50.50.105.0/25	R5
R5	e0/1	IPv6	20FF:CCFF:200B:A2::5/64	20FF:CCFF:200B:A2::/64	R5
R5	e0/1	IPv6 LL	FE80::5	FE80::/10	lin e0
R5	e0/2	IPv4	50.50.104.5/24	50.50.104.0/24	R5
R5	e0/2	IPv6	20FF:CCFF:200B:A1::5/64	20FF:CCFF:200B:A1::/64	R5
R5	e0/2	IPv6 LL	FE80::5	FE80::/10	lin e0

Equip	Port	AddrTyp	Address	Network	De...
R6	e0/0	IPv4	50.50.105.129/25	50.50.105.128/25	R6
R6	e0/0	IPv6	20FF:CCFF:200B:A3::6/64	20FF:CCFF:200B:A3::/64	R6
R6	e0/0	IPv6 LL	FE80::6	FE80::/10	lin e0,
R6	e0/1	IPv4	50.50.105.6/25	50.50.105.0/25	R6
R6	e0/1	IPv6	20FF:CCFF:200B:A2::6/64	20FF:CCFF:200B:A2::/64	R6
R6	e0/1	IPv6 LL	FE80::6	FE80::/10	lin e0,
R7	e0/0	IPv4	50.50.105.130/25	50.50.105.128/25	R7
R7	e0/0	IPv6	20FF:CCFF:200B:A3::7/64	20FF:CCFF:200B:A3::/64	R7
R7	e0/0	IPv6 LL	FE80::7	FE80::/10	lin e0,
R7	e0/2	IPv4	50.50.104.7/24	50.50.104.0/24	R7
R7	e0/2	IPv6	20FF:CCFF:200B:A1::7/64	20FF:CCFF:200B:A1::/64	R7
R7	e0/2	IPv6 LL	FE80::7	FE80::/10	lin e0,
R8	e0/0	IPv4	35.10.65.129/27	35.10.65.128/27	R8
R8	e0/0	IPv6	20FF:CCFF:200C:B3::8/64	20FF:CCFF:200C:B3::/64	R8
R8	e0/0	IPv6 LL	FE80::8	FE80::/10	lin e0,
R8	e0/1	IPv4	35.10.64.8/24	35.10.64.0/24	R8
R8	e0/1	IPv6	20FF:CCFF:200C:B1::8/64	20FF:CCFF:200C:B1::/64	R8
R8	e0/1	IPv6 LL	FE80::8	FE80::/10	lin e0,
R9	e0/0	IPv4	172.16.18.2/29	172.16.18.0/29	to
R9	e0/0	IPv6	20FF:CCFF:1000:18::2/64	20FF:CCFF:1000:18::/64	to
R9	e0/0	IPv6 LL	FE80::9	FE80::/10	lin e0,
R9	e0/1	IPv4	50.50.96.9/23	50.50.96.0/23	R9
R9	e0/1	IPv6	20FF:CCFF:200A:A1::9/64	20FF:CCFF:200A:A1::/64	R9

Equip	Port	AddrTyp	Address	Network	De...
R9	e0/1	IPv6	20FF:CCFF:200A:A1::9/64	20FF:CCFF:200A:A1::/64	R9
R9	e0/1	IPv6 LL	FE80::9	FE80::/10	lin... e0...
R9	e0/2	IPv4	50.50.100.9/24	50.50.100.0/24	R9
R9	e0/2	IPv6	20FF:CCFF:200A:A3::9/64	20FF:CCFF:200A:A3::/64	R9
R9	e0/2	IPv6 LL	FE80::9	FE80::/10	lin... e0...
R9	e0/3	IPv4	50.50.102.9/29	50.50.102.8/29	R9
R9	e0/3	IPv6	20FF:CCFF:200A:A5::9/64	20FF:CCFF:200A:A5::/64	R9
R9	e0/3	IPv6 LL	FE80::9	FE80::/10	lin... e0...
R10	e0/1	IPv4	50.50.101.10/24	50.50.101.0/24	R1...
R10	e0/1	IPv6	20FF:CCFF:200A:A4::10/64	20FF:CCFF:200A:A4::/64	R1...
R10	e0/1	IPv6 LL	FE80::10	FE80::/10	lin... e0...
R10	e0/2	IPv4	50.50.100.10/24	50.50.100.0/24	R1...
R10	e0/2	IPv6	20FF:CCFF:200A:A3::10/64	20FF:CCFF:200A:A3::/64	R1...
R10	e0/2	IPv6 LL	FE80::10	FE80::/10	lin... e0...
R11	e0/0	IPv4	50.50.98.11/23	50.50.98.0/23	R1...
R11	e0/0	IPv6	20FF:CCFF:200A:A2::11/64	20FF:CCFF:200A:A2::/64	R1...
R11	e0/0	IPv6 LL	FE80::11	FE80::/10	lin... e0...
R11	e0/1	IPv4	50.50.101.11/24	50.50.101.0/24	R1...
R11	e0/1	IPv6	20FF:CCFF:200A:A4::11/64	20FF:CCFF:200A:A4::/64	R1...
R11	e0/1	IPv6 LL	FE80::11	FE80::/10	lin... e0...
R11	e0/3	IPv4	50.50.102.11/29	50.50.102.8/29	R1...
R11	e0/3	IPv6	20FF:CCFF:200A:A5::11/64	20FF:CCFF:200A:A5::/64	R1...

Equip	Port	AddrTyp	Address	Network	De...
R11	e0/3	IPv6 LL	FE80::11	FE80::/10	e0...
R12	e0/0	IPv4	50.50.98.12/23	50.50.98.0/23	R1
R12	e0/0	IPv6	20FF:CCFF:200A:A2::12/64	20FF:CCFF:200A:A2::/64	R1
R12	e0/0	IPv6 LL	FE80::12	FE80::/10	lin e0
R12	e0/1	IPv4	50.50.96.12/23	50.50.96.0/23	R1
R12	e0/1	IPv6	20FF:CCFF:200A:A1::12/64	20FF:CCFF:200A:A1::/64	R1
R12	e0/1	IPv6 LL	FE80::12	FE80::/10	lin e0
R13	e0/0	IPv4	172.16.20.2/29	172.16.20.0/29	to
R13	e0/0	IPv6	20FF:CCFF:1000:20::2/64	20FF:CCFF:1000:20::/64	to
R13	e0/0	IPv6 LL	FE80::13	FE80::/10	lin e0
R13	e0/1	IPv4	35.11.1.13/24	35.11.1.0/24	R1
R13	e0/1	IPv6	20FF:CCFF:200D:A2::13/64	20FF:CCFF:200D:A2::/64	R1
R13	e0/1	IPv6 LL	FE80::13	FE80::/10	lin e0
R13	e0/2	IPv4	35.11.0.13/24	35.11.0.0/24	R1
R13	e0/2	IPv6	20FF:CCFF:200D:A1::13/64	20FF:CCFF:200D:A1::/64	R1
R13	e0/2	IPv6 LL	FE80::13	FE80::/10	lin e0
R14	e0/0	IPv4	35.10.65.130/27	35.10.65.128/27	R1
R14	e0/0	IPv6	20FF:CCFF:200C:B3::14/64	20FF:CCFF:200C:B3::/64	R1
R14	e0/0	IPv6 LL	FE80::14	FE80::/10	lin e0
R14	e0/3	IPv4	35.10.65.14/25	35.10.65.0/25	R1
R14	e0/3	IPv6	20FF:CCFF:200C:B2::14/64	20FF:CCFF:200C:B2::/64	R1
R14	e0/3	IPv6 LL	FE80::14	FE80::/10	lin e0

Equip	Port	AddrTyp	Address	Network	Re
R15	e0/0	IPv4	35.11.2.15/25	35.11.2.0/25	R1
R15	e0/0	IPv6	20FF:CCFF:200D:A3::15/64	20FF:CCFF:200D:A3::/64	R1
R15	e0/0	IPv6 LL	FE80::15	FE80::/10	lin e0/
R15	e0/2	IPv4	35.11.0.15/24	35.11.0.0/24	R1
R15	e0/2	IPv6	20FF:CCFF:200D:A1::15/64	20FF:CCFF:200D:A1::/64	R1
R15	e0/2	IPv6 LL	FE80::15	FE80::/10	lin e0/
R16	e0/0	IPv4	35.11.2.16/25	35.11.2.0/25	R1
R16	e0/0	IPv6	20FF:CCFF:200D:A3::16/64	20FF:CCFF:200D:A3::/64	R1
R16	e0/0	IPv6 LL	FE80::16	FE80::/10	lin e0/
R16	e0/1	IPv4	35.11.1.16/24	35.11.1.0/24	R1
R16	e0/1	IPv6	20FF:CCFF:200D:A2::16/64	20FF:CCFF:200D:A2::/64	R1
R16	e0/1	IPv6 LL	FE80::16	FE80::/10	lin e0/
R17	e0/0	IPv4	172.16.17.1/29	172.16.17.0/29	to (R5
R17	e0/0	IPv6	20FF:CCFF:1000:17::1/64	20FF:CCFF:1000:17::/64	to (R5
R17	e0/0	IPv6 LL	FE80::17	FE80::/10	lin e0/
R17	e0/1	IPv4	90.90.129.17/24	90.90.129.0/24	R1
R17	e0/1	IPv6	20FF:CCFF:FFFF:2::17/64	20FF:CCFF:FFFF:2::/64	R1
R17	e0/1	IPv6 LL	FE80::17	FE80::/10	lin e0/
R17	e0/2	IPv4	90.90.128.17/24	90.90.128.0/24	R1
R17	e0/2	IPv6	20FF:CCFF:FFFF:1::17/64	20FF:CCFF:FFFF:1::/64	R1
R17	e0/2	IPv6 LL	FE80::17	FE80::/10	lin e0/

Equip	Port	AddrTyp	Address	Network	Re
R17	e0/3	IPv4	90.90.131.17/25	90.90.131.0/25	R1
R17	e0/3	IPv6	20FF:CCFF:FFFF:5::17/64	20FF:CCFF:FFFF:5::/64	R1
R17	e0/3	IPv6 LL	FE80::17	FE80::/10	lin... e0
R18	e0/0	IPv4	172.16.18.1/29	172.16.18.0/29	to ... (R9
R18	e0/0	IPv6	20FF:CCFF:1000:18::1/64	20FF:CCFF:1000:18::/64	to ... (R9
R18	e0/0	IPv6 LL	FE80::18	FE80::/10	lin... e0
R18	e0/1	IPv4	90.90.129.18/24	90.90.129.0/24	R1
R18	e0/1	IPv6	20FF:CCFF:FFFF:2::18/64	20FF:CCFF:FFFF:2::/64	R1
R18	e0/1	IPv6 LL	FE80::18	FE80::/10	lin... e0
R18	e0/2	IPv4	90.90.130.18/25	90.90.130.0/25	R1
R18	e0/2	IPv6	20FF:CCFF:FFFF:3::18/64	20FF:CCFF:FFFF:3::/64	R1
R18	e0/2	IPv6 LL	FE80::18	FE80::/10	lin... e0
R18	e0/3	IPv4	90.90.131.129/25	90.90.131.128/25	R1
R18	e0/3	IPv6	20FF:CCFF:FFFF:6::18/64	20FF:CCFF:FFFF:6::/64	R1
R18	e0/3	IPv6 LL	FE80::18	FE80::/10	lin... e0
R19	e0/0	IPv4	172.16.19.1/28	172.16.19.0/28	to ... (R1
R19	e0/0	IPv6	20FF:CCFF:1000:19::1/64	20FF:CCFF:1000:19::/64	to ... (R1
R19	e0/0	IPv6 LL	FE80::19	FE80::/10	lin... e0
R19	e0/1	IPv4	90.90.130.129/25	90.90.130.128/25	R1
R19	e0/1	IPv6	20FF:CCFF:FFFF:4::19/64	20FF:CCFF:FFFF:4::/64	R1

Equip	Port	AddrTyp	Address	Network	De
R19	e0/2	IPv4	90.90.128.19/24	90.90.128.0/24	R1
R19	e0/2	IPv6	20FF:CCFF:FFFF:1::19/64	20FF:CCFF:FFFF:1::/64	R1
R19	e0/2	IPv6 LL	FE80::19	FE80::/10	lin e0
R19	e0/3	IPv4	90.90.131.130/25	90.90.131.128/25	R1
R19	e0/3	IPv6	20FF:CCFF:FFFF:6::19/64	20FF:CCFF:FFFF:6::/64	R1
R19	e0/3	IPv6 LL	FE80::19	FE80::/10	lin e0
R20	e0/0	IPv4	172.16.20.1/29	172.16.20.0/29	to (R:
R20	e0/0	IPv6	20FF:CCFF:1000:20::1/64	20FF:CCFF:1000:20::/64	to (R:
R20	e0/0	IPv6 LL	FE80::20	FE80::/10	lin e0
R20	e0/1	IPv4	90.90.130.130/25	90.90.130.128/25	R2
R20	e0/1	IPv6	20FF:CCFF:FFFF:4::20/64	20FF:CCFF:FFFF:4::/64	R2
R20	e0/1	IPv6 LL	FE80::20	FE80::/10	lin e0
R20	e0/2	IPv4	90.90.130.20/25	90.90.130.0/25	R2
R20	e0/2	IPv6	20FF:CCFF:FFFF:3::20/64	20FF:CCFF:FFFF:3::/64	R2
R20	e0/2	IPv6 LL	FE80::20	FE80::/10	lin e0
R20	e0/3	IPv4	90.90.131.20/25	90.90.131.0/25	R2
R20	e0/3	IPv6	20FF:CCFF:FFFF:5::20/64	20FF:CCFF:FFFF:5::/64	R2
R20	e0/3	IPv6 LL	FE80::20	FE80::/10	lin e0
R22	e0/0	IPv4	35.10.194.22/25	35.10.194.0/25	R2
R22	e0/0	IPv6	20FF:CCFF:200C:D3::22/64	20FF:CCFF:200C:D3::/64	R2
					lin

Equip	Port	AddrTyp	Address	Network	De...
R22	e0/0	IPv6 LL	FE80::22	FE80::/10	e0/
R22	e0/1	IPv4	35.10.192.22/24	35.10.192.0/24	R2
R22	e0/1	IPv6	20FF:CCFF:200C:D2::22/64	20FF:CCFF:200C:D2::/64	R2
R22	e0/1	IPv6 LL	FE80::22	FE80::/10	lin e0/
R23	e0/0	IPv4	35.10.194.23/25	35.10.194.0/25	R2
R23	e0/0	IPv6	20FF:CCFF:200C:D3::23/64	20FF:CCFF:200C:D3::/64	R2
R23	e0/0	IPv6 LL	FE80::23	FE80::/10	lin e0/
R23	e0/2	IPv4	35.10.193.23/24	35.10.193.0/24	R2
R23	e0/2	IPv6	20FF:CCFF:200C:D1::23/64	20FF:CCFF:200C:D1::/64	R2
R23	e0/2	IPv6 LL	FE80::23	FE80::/10	lin e0/
R24	e0/0	IPv4	35.10.128.24/26	35.10.128.0/26	R2
R24	e0/0	IPv6	20FF:CCFF:200C:C1::24/64	20FF:CCFF:200C:C1::/64	R2
R24	e0/0	IPv6 LL	FE80::24	FE80::/10	lin e0/
R24	e0/1	IPv4	35.10.192.24/24	35.10.192.0/24	R2
R24	e0/1	IPv6	20FF:CCFF:200C:D1::24/64	20FF:CCFF:200C:D1::/64	R2
R24	e0/1	IPv6 LL	FE80::24	FE80::/10	lin e0/
R24	e0/2	IPv4	35.10.193.24/24	35.10.193.0/24	R2
R24	e0/2	IPv6	20FF:CCFF:200C:D2::24/64	20FF:CCFF:200C:D2::/64	R2
R24	e0/2	IPv6 LL	FE80::24	FE80::/10	lin e0/

3. Настроим IP-адреса с учетом приведённой выше схемы и задокументируем изменения.

Изменения на маршрутизаторах сводятся к:

1. Включению ipv6 unicast-routing (ipv4 unicast-routing по-умолчанию включен);

2. Включению ipv6 на интерфейсах (ipv4 по-умолчанию включен);

3. Назначению адресов ipv4 и ipv6 на интерфейсах;

4. Включению самих интерфейсов (физические интерфейсы по-умолчанию выключены).

Пример настройки на маршрутизаторе R1:

```
conf t
 ipv6 unicast-routing
!
 interface Ethernet0/0
  description "to Internet (R19)"
  ip address 172.16.19.2 255.255.255.240
  ipv6 address FE80::1 link-local
  ipv6 address 20FF:CCFF:1000:19::2/64
  ipv6 enable
  no shutdown
  exit
!
 interface Ethernet0/1
  description "R1 to R2"
  ip address 35.10.8.1 255.255.254.0
  ipv6 address FE80::1 link-local
  ipv6 address 20FF:CCFF:200C:A2::1/64
  ipv6 enable
  no shutdown
  exit
!
 interface Ethernet0/2
  description "R1 to R3"
  ip address 35.10.0.1 255.255.248.0
  ipv6 address FE80::1 link-local
  ipv6 address 20FF:CCFF:200C:A1::1/64
  ipv6 enable
  no shutdown
  exit
!
 interface Ethernet0/3
  description "not used"
  no ip address
  shutdown
  exit
 exit
```

Все файлы изменений приведены здесь.

Итоговая графическая схема: