



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

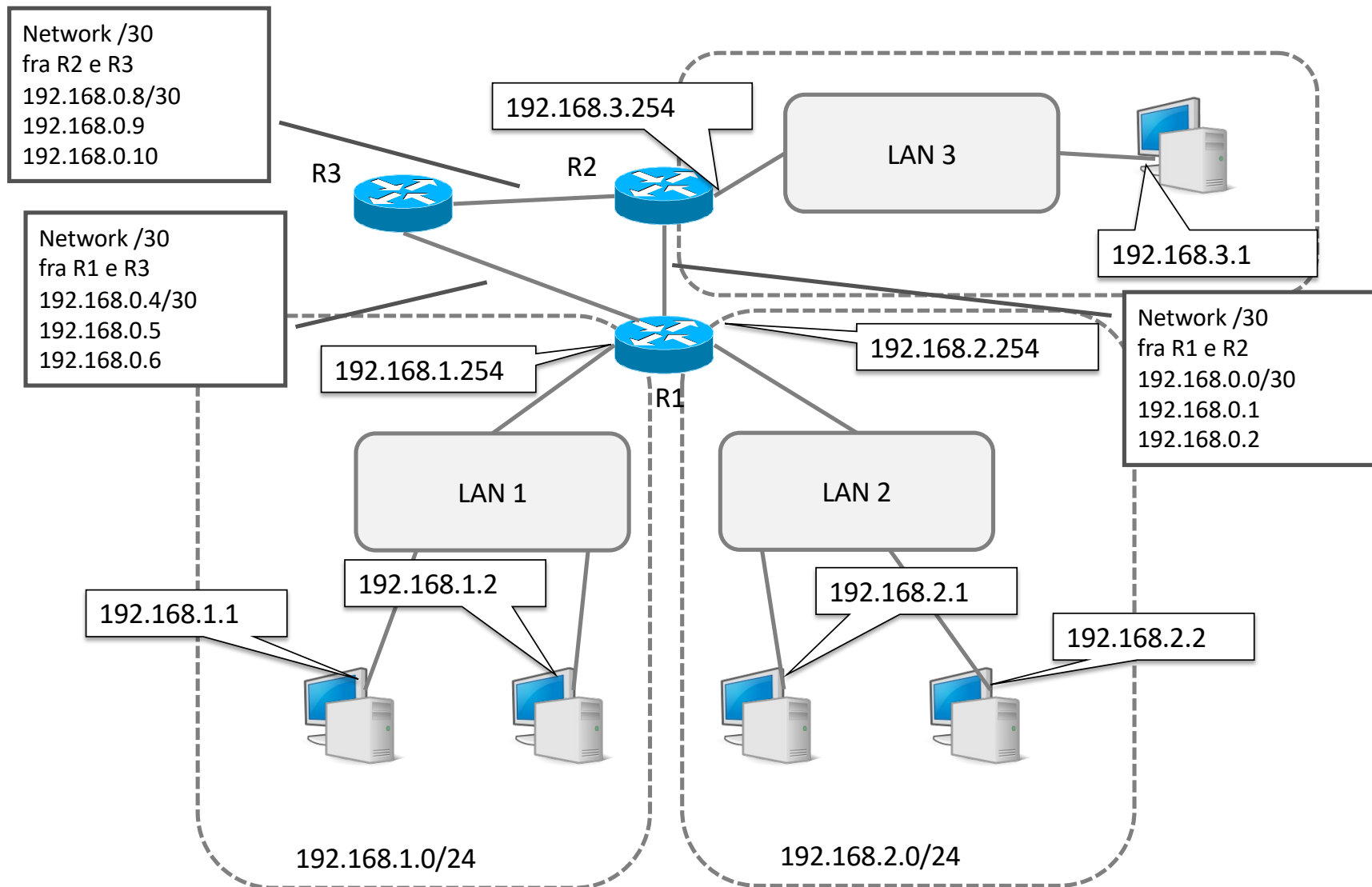
Esempio configurazione OSPF

Franco Callegati

2023

Scenario

- Semplice topologie di rete con 3 router collegati ad anello
- Attivazione di OSPF su tutti i router
- Configurazione di una singola area di routing (Area 0)
- Router ID
 - R1 10.0.0.1
 - R2 10.0.0.2
 - R3 10.0.0.3



Adiacenze

Router_R1#show ip ospf neighbor

Neighbor ID	Pri	State	Dead Time	Address	Interface
10.0.0.3	1	FULL/DR	00:00:31	192.168.0.6	Vlan4
10.0.0.2	1	FULL/DR	00:00:31	192.168.0.2	FastEthernet0

Router_R3#show ip ospf neighbor

Neighbor ID	Pri	State	Dead Time	Address	Interface
10.0.0.2	1	FULL/BDR	00:00:35	192.168.0.9	FastEthernet0
10.0.0.1	1	FULL/BDR	00:00:33	192.168.0.5	Vlan1

```
Router_R1#show ip ospf rib
```

```
OSPF local RIB for Process 10
```

```
Codes: * - Best, > - Installed in global RIB
```

```
* 192.168.0.0/30, Intra, cost 1, area 0, Connected  
  via 192.168.0.1, FastEthernet0  
* 192.168.0.4/30, Intra, cost 1, area 0, Connected  
  via 192.168.0.5, Vlan4  
*> 192.168.0.8/30, Intra, cost 2, area 0  
   via 192.168.0.6, Vlan4  
   via 192.168.0.2, FastEthernet0  
* 192.168.1.0/24, Intra, cost 1, area 0, Connected  
  via 192.168.1.254, Vlan1  
*> 192.168.3.0/24, Intra, cost 2, area 0  
   via 192.168.0.2, FastEthernet0
```

Notare che essendo stata
definita solamente l'area 0
tutte le rotte figurano intra
area

OSPF database

- Contiene l'elenco degli LSA ricevuti
- Gli LSA sono identificati tramite
 - router che li ha inviati
 - Età
- Sono di due tipi
 - Network
 - Descrivono una rete specifica elencando tutti i router connessi a quella rete. Vengono generati da Designated Router (DR) nelle reti multi-access (come Ethernet).
 - Identificano le reti elencando i router a loro connessi
 - Router
 - Descrivono i router e tutte le reti direttamente connessi a ciascun router. Ogni router genera questo tipo di LSA per annunciare i propri collegamenti.
 - Identificano i router ed elencano le reti a loro connessi
- Si noti che le network vengono classificate come Transit o Stub

Router_R1#show ip ospf database

OSPF Router with ID (10.0.0.1) (Process ID 10)

descrivono i collegamenti di ciascun router nell'area OSPF.

Router Link States (Area 0)

Indica il Router ID del router che ha originato l'LSA.

Link ID

10.0.0.1
10.0.0.2
10.0.0.3

Indica il Router ID del router che ha pubblicizzato l'LSA.

ADV Router

10.0.0.1
10.0.0.2
10.0.0.3

Il tempo (in secondi) trascorso dalla creazione dell'LSA.

Age

1033
1834
1161

Seq#

0x8000000A
0x8000000E
0x80000008

Identifica la versione dell'LSA.

Checksum

0x0025AF
0x0006BD
0x00AC8F

per verificare l'integrità dei dati dell'LSA.

Indica il numero di collegamenti dichiarati dal router.

Link count

3
3
2

descrivono le reti connesse ai Designated Router (DR) in un'area OSPF.

Net Link States (Area 0)

Indica il indirizzo IP del router che ha originato l'LSA.

Link ID

192.168.0.2
192.168.0.6
192.168.0.10

ADV Router

10.0.0.2
10.0.0.3
10.0.0.3

Age

1551
1161
1161

Seq#

0x80000002
0x80000002
0x80000002

Checksum

0x003677
0x001295
0x00F7AA



```
Router_R1#show ip ospf database network
```

```
OSPF Router with ID (10.0.0.1) (Process ID 10)
```

```
Net Link States (Area 0)
```

```
Routing Bit Set on this LSA
```

```
LS age: 1857
```

```
Options: (No TOS-capability, DC)
```

```
LS Type: Network Links
```

```
Link State ID: 192.168.0.2 (address of Designated Router)
```

```
Advertising Router: 10.0.0.2
```

```
LS Seq Number: 80000002
```

```
Checksum: 0x3677
```

```
Length: 32
```

```
Network Mask: /30
```

```
Attached Router: 10.0.0.2
```

```
Attached Router: 10.0.0.1
```

```
Routing Bit Set on this LSA
```

```
LS age: 1467
```

```
Options: (No TOS-capability, DC)
```

```
LS Type: Network Links
```

```
Link State ID: 192.168.0.6 (address of Designated Router)
```

```
Advertising Router: 10.0.0.3
```

```
LS Seq Number: 80000002
```

```
Checksum: 0x1295
```

```
Length: 32
```

```
Network Mask: /30
```

```
Attached Router: 10.0.0.3
```

```
Attached Router: 10.0.0.1
```

```
Routing Bit Set on this LSA
```

```
LS age: 1468
```

```
Options: (No TOS-capability, DC)
```

```
LS Type: Network Links
```

```
Link State ID: 192.168.0.10 (address of Designated Router)
```

```
Advertising Router: 10.0.0.3
```

```
LS Seq Number: 80000002
```

```
Checksum: 0xF7AA
```

```
Length: 32
```

```
Network Mask: /30
```

```
Attached Router: 10.0.0.3
```

```
Attached Router: 10.0.0.2
```



```
Router_R1#show ip ospf database router
```

```
OSPF Router with ID (10.0.0.1) (Process ID 10)
```

```
Router Link States (Area 0)
```

```
LS age: 1446  
Options: (No TOS-capability, DC)  
LS Type: Router Links  
Link State ID: 10.0.0.1  
Advertising Router: 10.0.0.1  
LS Seq Number: 8000000A  
Checksum: 0x25AF  
Length: 60  
Number of Links: 3
```

- **Stub:** non funge da percorso di transito per raggiungere altre destinazioni.
 - una network connessa ad un solo router e quindi che non può essere attraversata per raggiungere altre destinazioni
- **Transit:** può essere utilizzata come percorso per raggiungere altre reti.
 - Una network connessa a due o più router che quindi può essere attraversata per raggiungere altre network

```
Link connected to: a Stub Network  
(Link ID) Network/subnet number: 192.168.1.0  
(Link Data) Network Mask: 255.255.255.0  
Number of TOS metrics: 0  
TOS 0 Metrics: 1
```

```
Link connected to: a Transit Network  
(Link ID) Designated Router address: 192.168.0.6  
(Link Data) Router Interface address: 192.168.0.5  
Number of TOS metrics: 0  
TOS 0 Metrics: 1
```

```
Link connected to: a Transit Network  
(Link ID) Designated Router address: 192.168.0.2  
(Link Data) Router Interface address: 192.168.0.1  
Number of TOS metrics: 0  
TOS 0 Metrics: 1
```



LS age: 229
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.2
Advertising Router: 10.0.0.2
LS Seq Number: 8000000F
Checksum: 0x4BE
Length: 60
Number of Links: 3

Link connected to: a Stub Network
(Link ID) Network/subnet number: 192.168.3.0
(Link Data) Network Mask: 255.255.255.0
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.10
(Link Data) Router Interface address: 192.168.0.9
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.2
(Link Data) Router Interface address: 192.168.0.2
Number of TOS metrics: 0
TOS 0 Metrics: 1



LS age: 5

Options: (No TOS-capability, DC)

LS Type: Router Links

Link State ID: 10.0.0.3

Advertising Router: 10.0.0.3

LS Seq Number: 80000008

Checksum: 0xAC8F

Length: 48

Number of Links: 2

Link connected to: a Transit Network

(Link ID) Designated Router address: 192.168.0.10

(Link Data) Router Interface address: 192.168.0.10

Number of TOS metrics: 0

TOS 0 Metrics: 1

Link connected to: a Transit Network

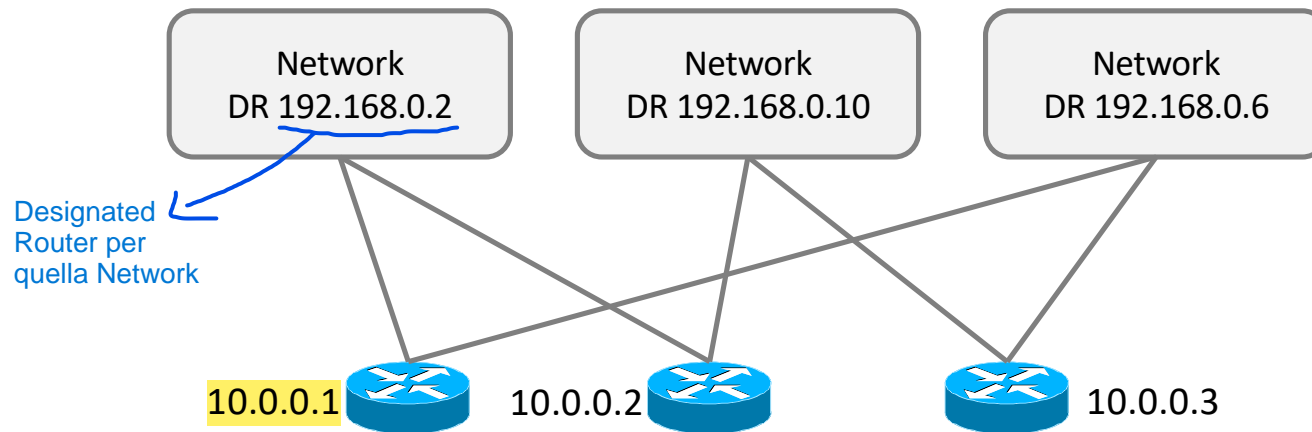
(Link ID) Designated Router address: 192.168.0.6

(Link Data) Router Interface address: 192.168.0.6

Number of TOS metrics: 0

TOS 0 Metrics: 1

Dal punto di vista di R1

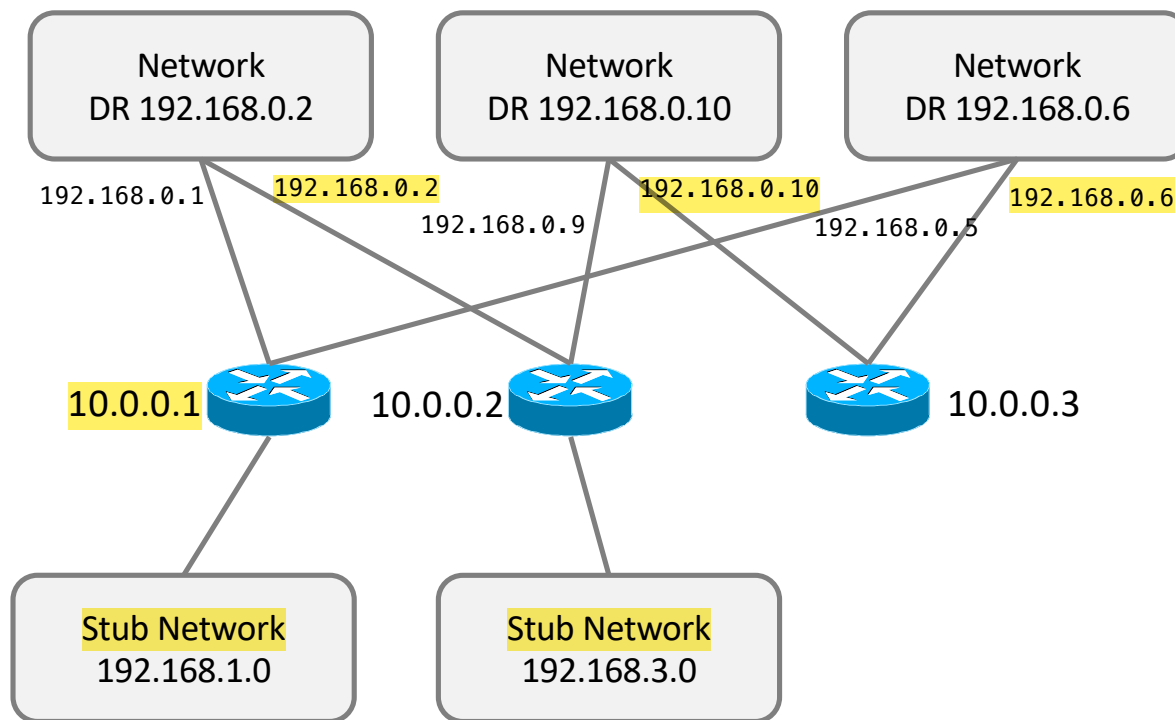


Partendo dai network link state

descrivono le reti connesse ai Designated Router (DR).

Dal punto di vista di R1

descrivono i collegamenti di ciascun router.



Aggiungendo i router link state



```
Router_R3#show ip ospf database
```

OSPF Router with ID (10.0.0.3) (Process ID 10)

Router Link States (Area 0)

Link ID	ADV Router	Age	Seq#	Checksum	Link count
10.0.0.1	10.0.0.1	1145	0x8000000D	0x007CCF	2
10.0.0.2	10.0.0.2	153	0x80000015	0x00D662	2
10.0.0.3	10.0.0.3	1286	0x80000009	0x00AA90	2

Net Link States (Area 0)

Link ID	ADV Router	Age	Seq#	Checksum
192.168.0.2	10.0.0.2	1705	0x80000003	0x003478
192.168.0.6	10.0.0.3	1286	0x80000003	0x001096
192.168.0.10	10.0.0.3	1286	0x80000003	0x00F5AB

Router_R3#show ip ospf database summary

OSPF Router with ID (10.0.0.3) (Process ID 10)

Summary Net Link States (Area 0)

Routing Bit Set on this LSA

LS age: 1224

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.1.0 (summary Network Number)

Advertising Router: 10.0.0.1

LS Seq Number: 80000001

Checksum: 0x7650

Length: 28

Network Mask: /24

TOS: 0 Metric: 1

LS age: 190

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.3.0 (summary Network Number)

Advertising Router: 10.0.0.2

LS Seq Number: 80000001

Checksum: 0x5A69

Length: 28

Network Mask: /24

TOS: 0 Metric: 1



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Router_R3#show ip ospf database router

OSPF Router with ID (10.0.0.3) (Process ID 10)

Router Link States (Area 0)

Routing Bit Set on this LSA
LS age: 1799
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.1
Advertising Router: 10.0.0.1
LS Seq Number: 8000000D
Checksum: 0x7CCF
Length: 48
Area Border Router
Number of Links: 2

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.6
(Link Data) Router Interface address: 192.168.0.5
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.2
(Link Data) Router Interface address: 192.168.0.1
Number of TOS metrics: 0
TOS 0 Metrics: 1

Routing Bit Set on this LSA
LS age: 102
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.2
Advertising Router: 10.0.0.2
LS Seq Number: 80000017
Checksum: 0xD264
Length: 48
Area Border Router
Number of Links: 2

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.10
(Link Data) Router Interface address: 192.168.0.9
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.2
(Link Data) Router Interface address: 192.168.0.2
Number of TOS metrics: 0
TOS 0 Metrics: 1



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



LS age: 1944
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.3
Advertising Router: 10.0.0.3
LS Seq Number: 80000009
Checksum: 0xAA90
Length: 48
Number of Links: 2

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.10
(Link Data) Router Interface address: 192.168.0.10
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.6
(Link Data) Router Interface address: 192.168.0.6
Number of TOS metrics: 0
TOS 0 Metrics: 1

Router_R3#show ip ospf database network

OSPF Router with ID (10.0.0.3) (Process ID 10)

Net Link States (Area 0)

Routing Bit Set on this LSA
LS age: 745
Options: (No TOS-capability, DC)
LS Type: Network Links
Link State ID: 192.168.0.2 (address of Designated Router)
Advertising Router: 10.0.0.2
LS Seq Number: 80000004
Checksum: 0x3279
Length: 32
Network Mask: /30
 Attached Router: 10.0.0.2
 Attached Router: 10.0.0.1

Routing Bit Set on this LSA
LS age: 134
Options: (No TOS-capability, DC)
LS Type: Network Links
Link State ID: 192.168.0.6 (address of Designated Router)
Advertising Router: 10.0.0.3
LS Seq Number: 80000004
Checksum: 0xE97
Length: 32
Network Mask: /30
 Attached Router: 10.0.0.3
 Attached Router: 10.0.0.1

Routing Bit Set on this LSA
LS age: 135
Options: (No TOS-capability, DC)
LS Type: Network Links
Link State ID: 192.168.0.10 (address of Designated Router)
Advertising Router: 10.0.0.3
LS Seq Number: 80000004
Checksum: 0xF3AC
Length: 32
Network Mask: /30
 Attached Router: 10.0.0.3
 Attached Router: 10.0.0.2



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



Router_R3#show ip route

Codes: C – connected, S – static, R – RIP, M – mobile, B – BGP
D – EIGRP, EX – EIGRP external, O – OSPF, IA – OSPF inter area
N1 – OSPF NSSA external type 1, N2 – OSPF NSSA external type 2
E1 – OSPF external type 1, E2 – OSPF external type 2
i – IS-IS, su – IS-IS summary, L1 – IS-IS level-1, L2 – IS-IS level-2
ia – IS-IS inter area, * – candidate default, U – per-user static route
o – ODR, P – periodic downloaded static route

Gateway of last resort is not set

```
10.0.0.0/32 is subnetted, 1 subnets
C      10.0.0.3 is directly connected, Loopback0
192.168.0.0/30 is subnetted, 3 subnets
C      192.168.0.8 is directly connected, FastEthernet0
O      192.168.0.0 [110/2] via 192.168.0.9, 01:30:18, FastEthernet0
          [110/2] via 192.168.0.5, 01:30:28, Vlan1
C      192.168.0.4 is directly connected, Vlan1
O IA 192.168.1.0/24 [110/2] via 192.168.0.5, 00:21:37, Vlan1
O IA 192.168.3.0/24 [110/2] via 192.168.0.9, 00:04:24, FastEthernet0
```



Router_R1#show ip route

Codes: C – connected, S – static, R – RIP, M – mobile, B – BGP
D – EIGRP, EX – EIGRP external, O – OSPF, IA – OSPF inter area
N1 – OSPF NSSA external type 1, N2 – OSPF NSSA external type 2
E1 – OSPF external type 1, E2 – OSPF external type 2
i – IS-IS, su – IS-IS summary, L1 – IS-IS level-1, L2 – IS-IS level-2
ia – IS-IS inter area, * – candidate default, U – per-user static route
o – ODR, P – periodic downloaded static route

Gateway of last resort is not set

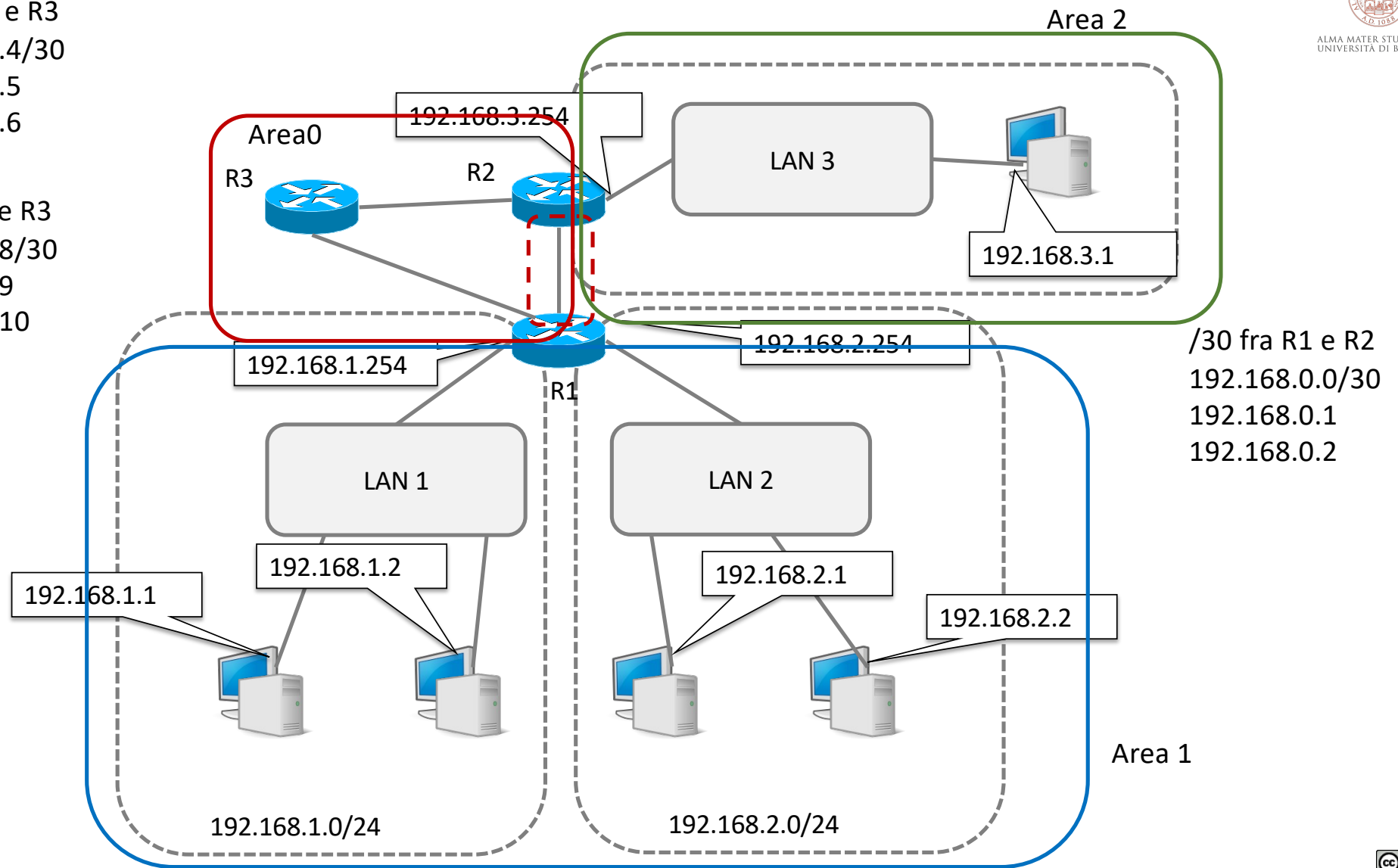
```
10.0.0.0/32 is subnetted, 1 subnets
C      10.0.0.1 is directly connected, Loopback0
192.168.0.0/30 is subnetted, 3 subnets
O      192.168.0.8 [110/2] via 192.168.0.6, 00:29:23, Vlan4
        [110/2] via 192.168.0.2, 00:29:23, FastEthernet0
C      192.168.0.0 is directly connected, FastEthernet0
C      192.168.0.4 is directly connected, Vlan4
C      192.168.1.0/24 is directly connected, Vlan1
O IA 192.168.3.0/24 [110/2] via 192.168.0.2, 00:00:12, FastEthernet0
```

Scenario

- Medesima topologia
- Configurazione di quattro aree di routing come da figura
- Router ID
 - R1 10.0.0.1
 - R2 10.0.0.2
 - R3 10.0.0.3

/30 fra R1 e R3
192.168.0.4/30
192.168.0.5
192.168.0.6

/30 fra R2 e R3
192.168.0.8/30
192.168.0.9
192.168.0.10



Router_R1#show ip ospf database router

OSPF Router with ID (10.0.0.1) (Process ID 10)

Router Link States (Area 0)

LS age: 36
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.1
Advertising Router: 10.0.0.1
LS Seq Number: 8000000E
Checksum: 0x7AD0
Length: 48
Area Border Router
Number of Links: 2

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.6
(Link Data) Router Interface address: 192.168.0.5
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.2
(Link Data) Router Interface address: 192.168.0.1
Number of TOS metrics: 0
TOS 0 Metrics: 1

Routing Bit Set on this LSA
LS age: 348
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.2
Advertising Router: 10.0.0.2
LS Seq Number: 80000017
Checksum: 0xD264
Length: 48
Area Border Router
Number of Links: 2

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.10
(Link Data) Router Interface address: 192.168.0.9
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.2
(Link Data) Router Interface address: 192.168.0.2
Number of TOS metrics: 0
TOS 0 Metrics: 1

LS age: 196
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.3
Advertising Router: 10.0.0.3
LS Seq Number: 8000000A
Checksum: 0xA891
Length: 48
Number of Links: 2

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.10
(Link Data) Router Interface address: 192.168.0.10
Number of TOS metrics: 0
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.168.0.6
(Link Data) Router Interface address: 192.168.0.6
Number of TOS metrics: 0
TOS 0 Metrics: 1

Router Link States (Area 1)



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

LS age: 282
Options: (No TOS-capability, DC)
LS Type: Router Links
Link State ID: 10.0.0.1
Advertising Router: 10.0.0.1
LS Seq Number: 80000002
Checksum: 0xA20D
Length: 36
Area Border Router
Number of Links: 1

Link connected to: a Stub Network
(Link ID) Network/subnet number: 192.168.1.0
(Link Data) Network Mask: 255.255.255.0
Number of TOS metrics: 0
TOS 0 Metrics: 1



Router_R1#show ip ospf database network

OSPF Router with ID (10.0.0.1) (Process ID 10)

Net Link States (Area 0)

Routing Bit Set on this LSA

LS age: 915

Options: (No TOS-capability, DC)

LS Type: Network Links

Link State ID: 192.168.0.2 (address of Designated Router)

Advertising Router: 10.0.0.2

LS Seq Number: 80000004

Checksum: 0x3279

Length: 32

Network Mask: /30

Attached Router: 10.0.0.2

Attached Router: 10.0.0.1

Routing Bit Set on this LSA

LS age: 305

Options: (No TOS-capability, DC)

LS Type: Network Links

Link State ID: 192.168.0.6 (address of Designated Router)

Advertising Router: 10.0.0.3

LS Seq Number: 80000004

Checksum: 0xE97

Length: 32

Network Mask: /30

Attached Router: 10.0.0.3

Attached Router: 10.0.0.1

Routing Bit Set on this LSA

LS age: 305

Options: (No TOS-capability, DC)

LS Type: Network Links

Link State ID: 192.168.0.10 (address of Designated Router)

Advertising Router: 10.0.0.3

LS Seq Number: 80000004

Checksum: 0xF3AC

Length: 32

Network Mask: /30

Attached Router: 10.0.0.3

Attached Router: 10.0.0.2

Router_R1#show ip ospf database summary

OSPF Router with ID (10.0.0.1) (Process ID 10)

Summary Net Link States (Area 0)

LS age: 451
Options: (No TOS-capability, DC, Upward)
LS Type: Summary Links(Network)
Link State ID: 192.168.1.0 (summary Network Number)
Advertising Router: 10.0.0.1
LS Seq Number: 80000002
Checksum: 0x7451
Length: 28
Network Mask: /24
TOS: 0 Metric: 1

Routing Bit Set on this LSA
LS age: 513
Options: (No TOS-capability, DC, Upward)
LS Type: Summary Links(Network)
Link State ID: 192.168.3.0 (summary Network Number)
Advertising Router: 10.0.0.2
LS Seq Number: 80000003
Checksum: 0x566B
Length: 28
Network Mask: /24
TOS: 0 Metric: 1

Summary Net Link States (Area 1)

LS age: 451
Options: (No TOS-capability, DC, Upward)
LS Type: Summary Links(Network)
Link State ID: 192.168.0.0 (summary Network Number)
Advertising Router: 10.0.0.1
LS Seq Number: 80000002
Checksum: 0x6D5C
Length: 28
Network Mask: /30
TOS: 0 Metric: 1

LS age: 453
Options: (No TOS-capability, DC, Upward)
LS Type: Summary Links(Network)
Link State ID: 192.168.0.4 (summary Network Number)
Advertising Router: 10.0.0.1
LS Seq Number: 80000002
Checksum: 0x4580
Length: 28
Network Mask: /30
TOS: 0 Metric: 1

LS age: 454
Options: (No TOS-capability, DC, Upward)
LS Type: Summary Links(Network)
Link State ID: 192.168.0.8 (summary Network Number)
Advertising Router: 10.0.0.1
LS Seq Number: 80000002
Checksum: 0x2799
Length: 28
Network Mask: /30
TOS: 0 Metric: 2

LS age: 512
Options: (No TOS-capability, DC, Upward)
LS Type: Summary Links(Network)
Link State ID: 192.168.3.0 (summary Network Number)
Advertising Router: 10.0.0.1
LS Seq Number: 80000001
Checksum: 0x6A59
Length: 28
Network Mask: /24
TOS: 0 Metric: 2



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



Router_R2#show ip ospf database summary

OSPF Router with ID (10.0.0.2) (Process ID 10)

Summary Net Link States (Area 0)

Routing Bit Set on this LSA

LS age: 581

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.1.0 (summary Network Number)

Advertising Router: 10.0.0.1

LS Seq Number: 80000002

Checksum: 0x7451

Length: 28

Network Mask: /24

TOS: 0 Metric: 1

LS age: 641

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.3.0 (summary Network Number)

Advertising Router: 10.0.0.2

LS Seq Number: 80000003

Checksum: 0x566B

Length: 28

Network Mask: /24

TOS: 0 Metric: 1

Summary Net Link States (Area 2)

LS age: 652

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.0.0 (summary Network Number)

Advertising Router: 10.0.0.2

LS Seq Number: 80000002

Checksum: 0x6761

Length: 28

Network Mask: /30

TOS: 0 Metric: 1

LS age: 654

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.0.4 (summary Network Number)

Advertising Router: 10.0.0.2

LS Seq Number: 80000002

Checksum: 0x497A

Length: 28

Network Mask: /30

TOS: 0 Metric: 2

LS age: 655

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.0.8 (summary Network Number)

Advertising Router: 10.0.0.2

LS Seq Number: 80000002

Checksum: 0x17A9

Length: 28

Network Mask: /30

TOS: 0 Metric: 1

LS age: 655

Options: (No TOS-capability, DC, Upward)

LS Type: Summary Links(Network)

Link State ID: 192.168.1.0 (summary Network Number)

Advertising Router: 10.0.0.2

LS Seq Number: 80000002

Checksum: 0x784B

Length: 28

Network Mask: /24

TOS: 0 Metric: 2