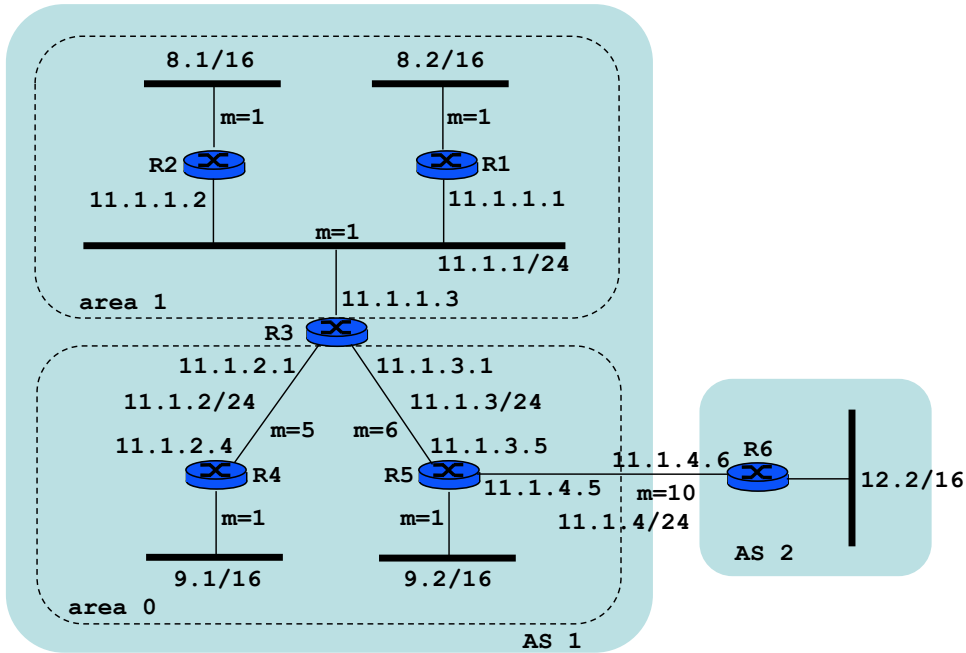


# 1 OSPF

Consider an example network presented in Figure 1. It is composed of several routers, the figure gives the IP addresses of their interfaces and prefixes for stub networks. Links have metrics denoted by  $m$ . AS 1 runs OSPF as IGP routing protocol. Router R5 learns through BGP the information about the networks in AS 2 and injects it into AS 1. Area 1 is not a stub area.

Give all advertisements either generated or transmitted by R3: fill in the table below. **area** column should indicate the area to which an advertisement is sent. Use **other** column to provide any information that does not fit otherwise.

Figure 1: Example OSPF network



Solution:

| area | LS-type | LS-id    | adv. router | link id. | link data | link type | metric | other  |
|------|---------|----------|-------------|----------|-----------|-----------|--------|--|
| 1    | 1-rtr   | 11.1.3.1 | 11.1.3.1    | 11.1.1.3 | 11.1.1.3  | 2-transit | 1      | R3 is Desig. Rtr.  |
| 0    | 1-rtr   | 11.1.3.1 | 11.1.3.1    | 11.1.2.4 | 11.1.2.1  | 1-p-to-p  | 5      |  |
| 0    | 1-rtr   | 11.1.3.1 | 11.1.3.1    | 11.1.3.5 | 11.1.3.1  | 1-p-to-p  | 6      |  |
| 1    | 2-net   | 11.1.1.3 | 11.1.3.1    |          |           |           |        | mask 255.255.255.0<br>att-rtr 11.1.1.3<br>att-rtr 11.1.1.2<br>att-rtr 11.1.1.1 |
| 0    | 3-sum   | 11.1.1.0 | 11.1.3.1    |          |           |           | 1      | mask 255.255.255.0   |
| 0    | 3-sum   | 8.1.0.0  | 11.1.3.1    |          |           |           | 2      | mask 255.255.0.0   |
| 0    | 3-sum   | 8.2.0.0  | 11.1.3.1    |          |           |           | 2      | mask 255.255.0.0   |
| 1    | 3-sum   | 11.1.2.0 | 11.1.3.1    |          |           |           | 5      | mask 255.255.255.0   |
| 1    | 3-sum   | 11.1.3.0 | 11.1.3.1    |          |           |           | 6      | mask 255.255.255.0   |
| 1    | 3-sum   | 9.1.0.0  | 11.1.3.1    |          |           |           | 6      | mask 255.255.0.0   |
| 1    | 3-sum   | 9.2.0.0  | 11.1.3.1    |          |           |           | 7      | mask 255.255.0.0   |
| 1    | 4-sum   | 11.1.4.5 | 11.1.3.1    |          |           |           | 6      |  |
| 1    | 5-ext   | 12.2.0.0 | 11.1.4.5    |          |           |           | 10     | mask 255.255.0.0<br>fwd address 0.0.0.0  |