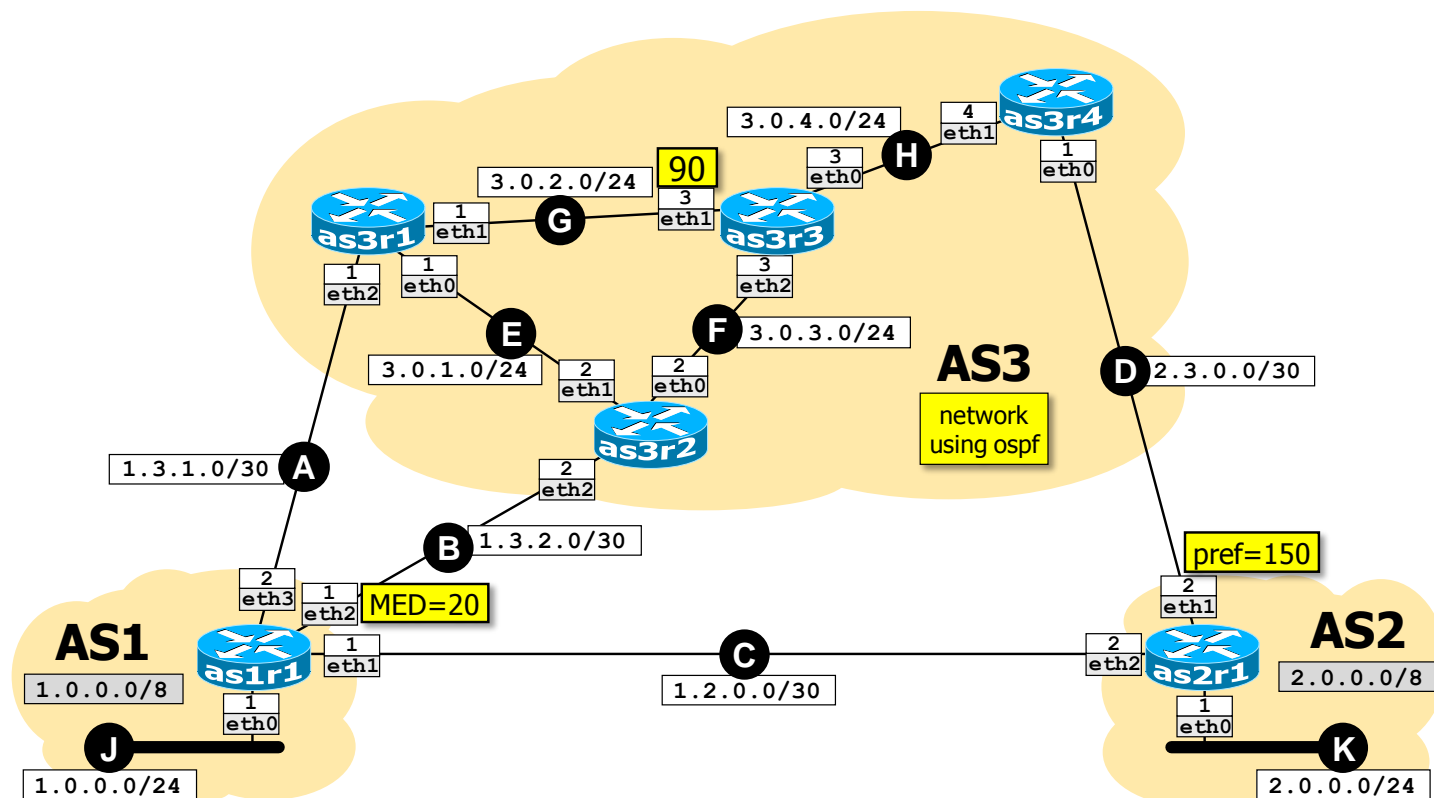


Available time: 80 minutes.



Using Netkit, implement the network depicted in the figure and described below.

- Routing within AS3 is implemented by using OSPF, with the following setup:
 - All the routers belong to the backbone area.
 - BGP is redistributed into OSPF
(note: enabling redistribution automatically injects into OSPF only routes learned from E-BGP).
 - Interface `eth1` of `as3r3` is assigned the indicated cost.
- The BGP configuration is as follows:
 - Border routers within AS3 establish I-BGP peerings with each other
(remember to establish the peerings between interfaces that are consistent with the internal routing of AS3).
 - All peering LANs are announced in BGP. Routers do not filter any updates. No routers announce the default route.
 - AS1's and AS2's border routers also announce their own subnet, as an aggregated prefix indicated in the gray box.
 - `as1r1` sets the indicated Multi Exit Discriminator (MED) value on outgoing updates.
 - `as2r1` sets the indicated local preference value on incoming updates.
- **Warning:** it may take several minutes (up to 5) for the peerings to be established and for the routing protocols to converge, even if the configuration is correct!

Goals: All BGP peerings as well as OSPF routing must operate correctly.
 Packets from as2r1 to 1.0.0.1 must traverse routers as3r4, as3r3, as3r2, and as3r1.
 Internal routers of AS3 do not need to be visible from outside the AS.