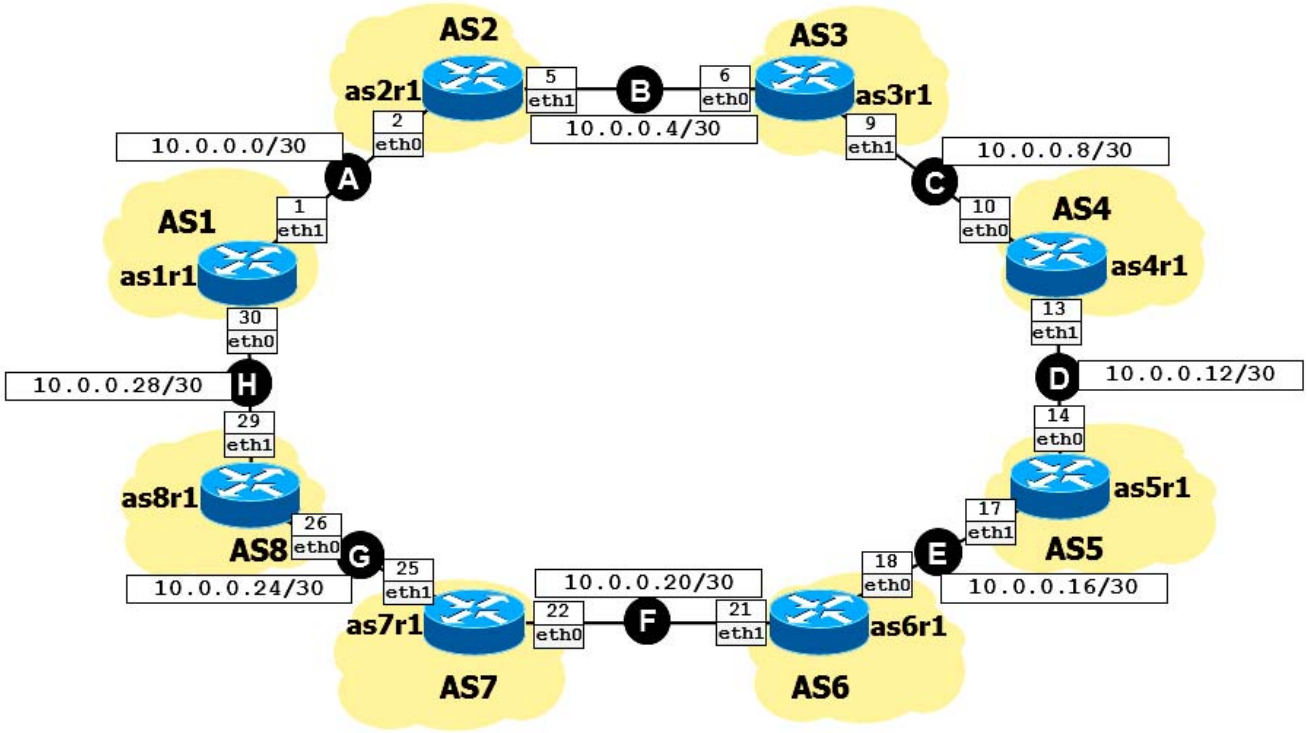
ICN – Examination date: 15-12-2017 – "Del Monte Castle" 



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

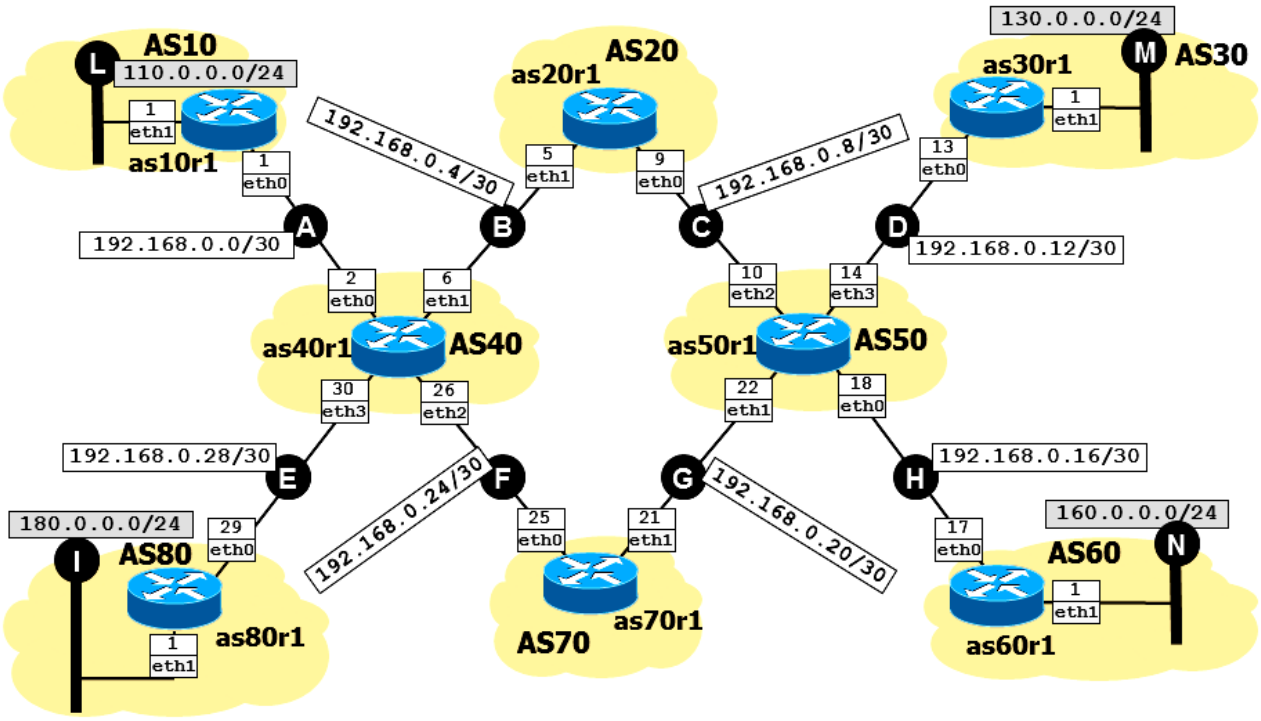
- ☐ All routers run BGP.
  - No routers annouce the default route (**0.0.0.0/0**).
  - Each router only announces the peering LANs.
  - No routers have internal subnets.
- ☐ BGP routers in each autonomous system are set up in order to force traffic to traverse the ring clockwise: **AS1** prefers announcements coming from **AS2**, and so on.

Goals:

Every IP address in the network must be reachable from any router.

The traffic generated inside each autonomous system must traverse the network clockwise. For example, traffic generated inside **AS4** must pass through **AS5**, **AS6**, **AS7**, **AS8**, **AS1**, **AS2**, and **AS3** (of course, directly connected networks are always reached via the attached interface).

ICN – Examination date: 15-12-2017 – "Candy"



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

- ☐ All routers run BGP.
  - No routers annouce the default route (`0.0.0.0/0`).
  - All routers announce the peering LANs.
- ☐ Routers `as10r1`, `as30r1`, `as60r1`, and `as80r1` also announce their internal subnets (in grey).
- ☐ BGP routers inside `AS10`, `AS30`, `AS60`, and `AS80` are set up to filter specific routes. In particular:
  - `AS10` filters out prefixes coming from `AS60`.
  - `AS30` filters out prefixes coming from `AS80`.
  - `AS60` filters out prefixes coming from `AS10`.
  - `AS80` filters out prefixes coming from `AS30`.
- ☐ Router `as50r1` prefers announcements coming from `as70r1`.

Goals:

Every IP address in the network must be reachable from any router.

The traffic must respect filters and polocies given in the text. For example each IP address in the network can be reached starting from `as10r1`, except those IP addresses belonging to the prefix `160.0.0.0/24`.