ICN – Examination date: 07-09-2012 – "Orchard"
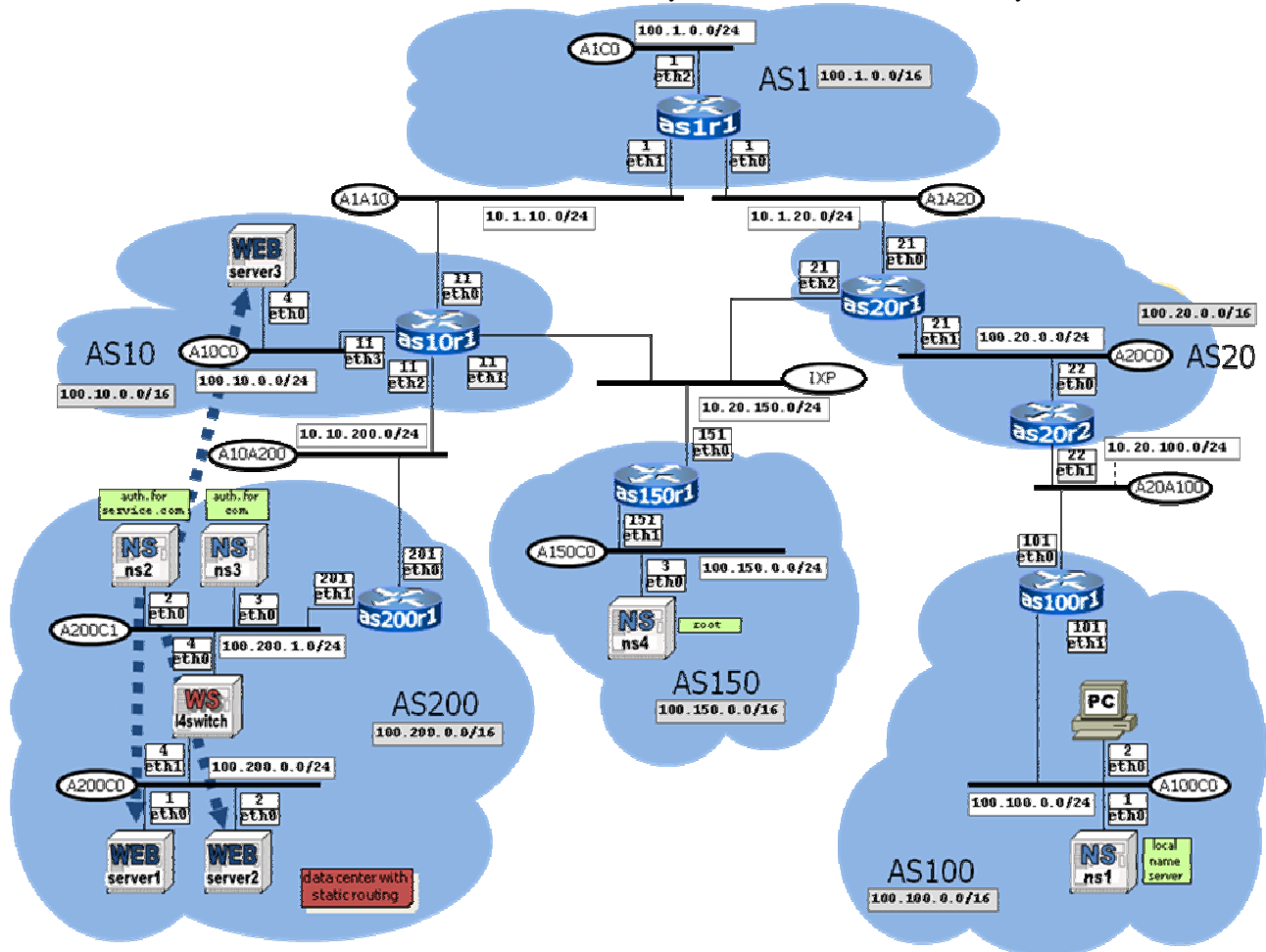**Available time: 150 minutes**

Using Netkit, implement the network shown in the following picture. Networks used to interconnect border routers <u>must also be announced</u> in BGP. All the networks that are internal to autonomous systems must be reachable from any other internal network.

Important notes:
1. **ns1**, **ns2**, **ns3**, and **ns4** are name servers; **ns1** offers name resolution services to hosts in the network **100.100.0.0/24**; **ns2** is the authority for **service.com**; **ns3** is the authority for **com**; **ns4** is a root name server.
2. **server1**, **server2**, and **server3** are Web servers running Apache2 showing each a different html page when requested for **www.service.com**.
3. **ns2** implements a load balancing policy for **www.service.com** by always returning the same pair of addresses **100.200.1.4** and **100.10.0.4** (note: do not use location-based load balancing).
4. **server1** and **server2** are behind **l4switch**, which is a layer 4 Web switch with a round robin policy to be set up with the following commands:
   iptables --table nat --append PREROUTING --destination 100.200.1.4 --match statistic --mode nth --every 2 --jump DNAT --to-destination 100.200.0.1
   iptables --table nat --append PREROUTING --destination 100.200.1.4 --jump DNAT --to-destination 100.200.0.2
5. **AS200**'s internal routing is static.
6. warning: remember to set the default route for all hosts and, in particular, to set **server1**'s and **server2**'s default route towards **l4switch**, and **l4switch**'s default route towards **as200r1**.
7. no routers announce the default route **0/0**.