

ECET 4840 Advanced Telecommunications

Laboratory Exercise 6

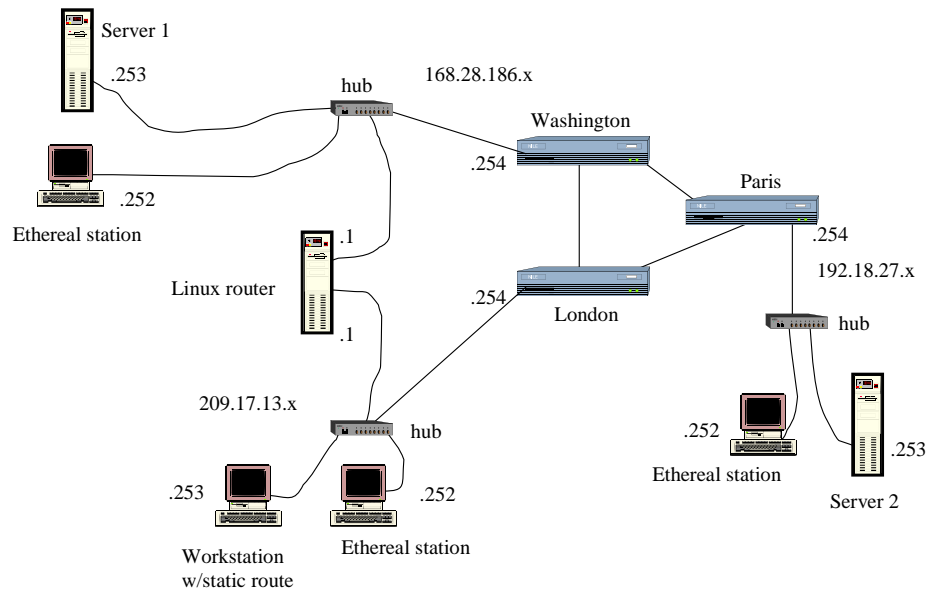
Purpose: The objective of this exercise is to guide the student through the implementation of a dynamic and static route-based networking solution (see attached network schematic). Specifically, a routed network will be implemented in order that routing table and IP-related information can be obtained and analyzed.

Note – Although this laboratory exercise requires class participation, submitted lab reports must be unique to the individual.

Procedures:

- 1) Using figure A of the attached network schematic, implement the required network; figure B will be used next week. Be sure to use the IP address scheme given. Use Linux for all stations. Also use information from your previous lab(s) to configure the Cisco routers.
- 2) Test your setup by pinging all given IP addresses. Also try a traceoute between networks.
- 3) Install sshd (www.ssh.com) on the systems designated “Server 1” and “Server 2”. Install the ssh client on the system designated “Workstation”.
- 4) Test your ssh installation by connecting from the workstation to each of the servers. Note – be sure that you have a valid login account like “student”.
- 5) Log out of the ssh servers.
- 6) Obtain screen captures of the routing tables for the workstation and both servers. These captures will be used as a future reference.
- 7) Install Wireshark on the three designated systems.
- 8) Obtain screen captures showing the establishment of the ssh session from the workstation to both servers. In particular, capture the IP header to show the source and destination addresses (note – they will reverse depending upon which system is the sender and which one is the receiver), the TTL field, and the encrypted password information (see ASCII field). The latter might prove difficult.
- 9) Obtain a screen capture of Washington’s routing table.
- 10) Change the IP address space of the Paris LAN from 192.18.27.x to 192.100.27.x. Be sure to reconfigure all three associated IP addresses.
- 11) Repeat step 9. Did the routing table update properly? Can you ping systems within the new IP address space from the other two LANs?

Turn in: Cover sheet, introduction, conclusion, and screenshots of the required data. Be sure to staple your report in the upper left hand corner.



Subnet mask for all LANs =
255.255.255.0

**ECET 4840 – Laboratory Exercise 8/9
Figure A**