

Workshop #4

OSPF

KTHNOC

20040213

Abstract

The questions should be answered before the workshop begins on the 13th of February. They can be solved in groups, but each student should be prepared to present his/her solution in front of the class at the blackboard.

The questions below should be possible to answer if you have payed attention in the lectures and if you read the course literature.

Every answer you give should be well motivated.

1 External routes

External routes in OSPF are marked with one of two metric types. What are they, and what function do they serve?

2 LSA Types

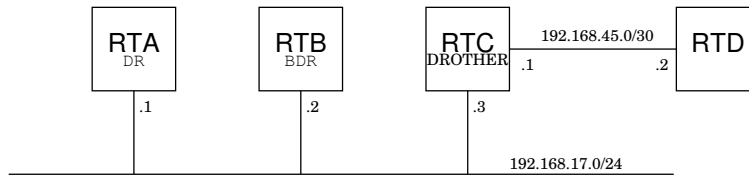
For each of the 6 LSA types covered in this course, explain:

- What they are used for.
- When they are used.

3 Areas

Below a question from the final exam 20030423:

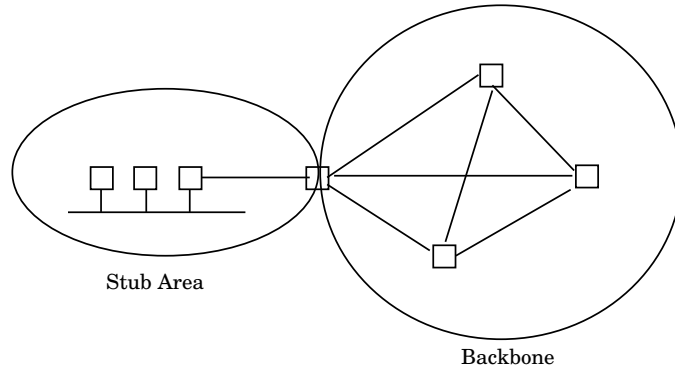
Study the topology below:



Routers RTA, RTB, and RTC are all on the same shared medium. RTC is connected to RTD on a point-to-point link. Assume that the routing domain has converged. All routers belong to a single area.

1. How many LSAs does RTD have in its Link State Database? (1p)
2. How many LSAs does RTD originate? (1p)
3. List the LSAs which RTA has in its Link State Database. Specify the LS Type, Advertising Router, and payload for each LSA. (10p)
4. Assume RTD suddenly goes down. How does OSPF deal with these occurrences in shared mediums? To ask the question in another way: How does RTC inform the other routers in the shared medium that it cannot reach RTD anymore? (4p)

Assume now that RTD never went down. Instead, all the routers in the topology above are now in a Stub Area, with RTD as ABR to Area 0. Area 0 consists of four routers connected by point-to-point links in a full mesh. See the topology below:



- (e) The ABR will originate LSAs into each Area. Describe each LSA which it originates:
- (a) ... into the Backbone (2p)
 - (b) ... into the Stub Area (2p)