Computer Networks Group

University of Göttingen, Germany

Homework #6
(Due on 12:00am, Thursday, Dec. 4th, 2014)

What is the difference between broadcast routing and multicast routing?

What are the two steps that are involved in joining a multicast group?

Briefly explain the following concepts of multicast routing:

•(Minimal) Spanning tree

•Shortest path tree

•Source-based tree

•(Group-) Shared tree

•Reverse path forwarding

•Center-based tree

Given the following network, use Reverse Path Forwarding to create a distribution tree with router X as the source. What happens if router Y does not have any attached nodes that are interested in the multicast data?

You can assume that all links have the same weight.
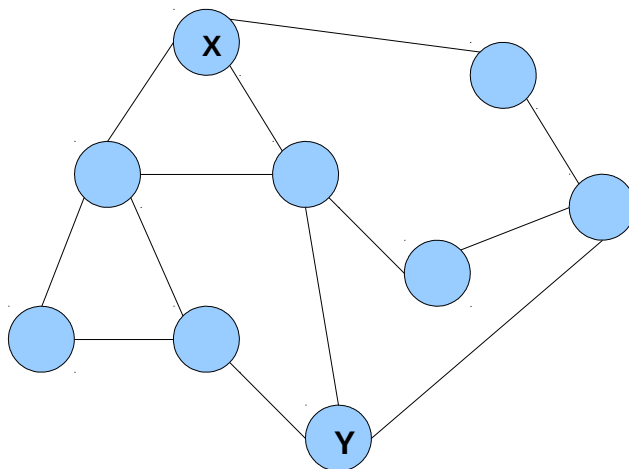
Given the following network, create a center-based using router X as the center.

Unless noted otherwise, all links have a weight of 1.
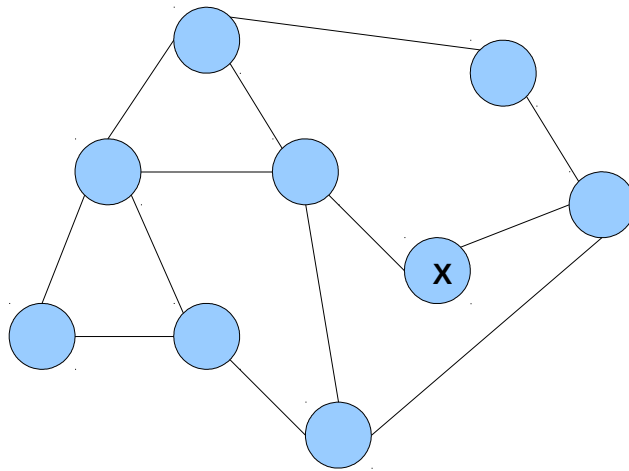
In IGMP: how does a host join a multicast group? How does it leave the multicast group again?

Compare the two multicast distribution scenarios in Protocol Independent Multicast (PIM). Which one is more suited for networks that only have a small ratio of routers that are interested in multicast routing?

Considering mobility, compare the direct routing approach with the indirect routing approach in terms of location privacy, deployability (i.e. which nodes need to be upgraded), and robustness (i.e. what happens if the mobile node moves).

How does a mobile node discover a mobility agent in it's current network and how can it obtain a care-of-address?