

*Each 6.1800 lecture will come with an outline. You can fill this in during lecture, after lecture, or not at all — it's entirely up to you how you use it. The goal of these outlines is to help you understand the main points that you should be taking away from each lecture. In some cases we will also include examples of things you should be able to do after each lecture.*

*In the past, these outlines have proved to be an effective tool for studying for the exams. Note that the outlines are **not exhaustive**; there will be topics and nuances in lecture that aren't captured by the outline.*

## **Lecture 09: Routing**

- What is the goal of a routing protocol?
- Why do we use distributed routing protocols?
- What are the three main steps of a distributed routing protocol, and why do we run each step periodically?
- Link state routing:
  - What is in an advertisement?
  - If node A (say) sends out an advertisement, which nodes will receive a copy of that advertisement?
  - What algorithm do nodes use to integrate advertisements, and how does that algorithm work?
    - *You should be able to run this algorithm yourself if we ask you to on an exam*
  - What's good about link state routing? What's bad?
- Distance vector routing
  - What is in an advertisement?
  - If node A (say) sends out an advertisement, which nodes will receive a copy of that advertisement?
  - What algorithm do nodes use to integrate advertisements, and how does that algorithm work?
    - *You should be able to run this algorithm yourself if we ask you to on an exam*
  - What's good about distance vector routing? What's bad?
  - Why does the order in which advertisements are received by nodes in distance vector matter?
    - What do we mean by "counting to infinity"?
    - What is a common value for INFINITY in a network using distance-vector routing?
    - *Note that as part of reasoning about failures, we saw a place where DV routing has to update a cost even when a route doesn't change — this can happen even when failures are not present*
- Where does it make sense to use link state routing?
- Where does it make sense to use distance vector routing?