

Red Team Modeling Project 1

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As the class progresses, you and your team should continue work on the red team modeling project. Certain parts of the project will become clearer to you as we discuss more networks topics in lecture. But other parts, you are already quite prepared to think about and tackle. To help you continue work on your project, for this assignment do the following:

- **Create a back-story.** Ultimately, for one of the final deliverables of the project, you'll have to present your project and mathematical model to the class. Create a short story or scenario to motivate yourself and the people listening to your presentation why the problem you are analyzing is important. In other words, at a high-level, what is your real-world network, and why is someone attacking it? What are some options of what an could "attack" mean for your network.
- **Think about mathematically modeling your network operations.** We'll definitely get a better idea of how to do this as the class progresses. But, you can take some of the first steps now. For this assignment, abstract the real-world into a set of nodes and edges. What are your nodes? What are your edges? What data is associated with a node or edge? What kinds of flows / movement is happening across the edges? What is special about your network vs. other networks? Also, very importantly, what is a single real-number-valued *measure of effectiveness* for your network operations? The answers to all these questions should help you create an LP to model your network operations later in the course.
- **Begin creating data for your network.** Using the real-world data you found in Project 0, begin to create the CSV files required to populate your LP.
- **Deliverables.** This assignment is a real assignment worth points, but it exists essentially just to make sure you are progressing with your model. For the deliverables of this assignment, send me an email with two attachments 1) a nodes.csv file that contains a row for each of the nodes in your network. 2) an arcs.csv file that contains a row for each of the arcs in your network. These files may require some extra columns that include data about the nodes / arcs.

These files are likely to change as you refine your modeling ideas further. For this assignment, I am just looking to see that you have the beginnings of the final product.