Red Team Modeling Project 2

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The next step on your project is to begin computationally modeling your network. The idea of this part of the project is to take the data you created in the previous step, and stick it into a GAMS program that computes how "operational" the network you are considering is.

- **Using pensil and paper, write an LP for your network.** The major parts to answer as you are doing this is: 1) What kind of network model or combination of network models appply to your network? 2) What is the objective function of the LP, and what does it mean in terms of the real-world problem? 3) What are the major pieces of data you need to write the constraints for your network?

  Be creative with your models, to try to reflect the real-world situation you have in mind. In other words, don't do shortest path just because that is what we have discussed in class primarily so far. Perhaps a minimum cost flow, or a maximum flow, or a stochastic network model are better models for your real world situation? At the same time, it is always a good idea to start with a simple model, make sure that works, and expand it later.

- **Use the GAMS templates online as a starting point to evaluate the operational level of your network.** Create the LP you have in mind in GAMS, using one of the templates provided online as a starting point. Use the data you created previously to populate the GAMS LP and solve for the operation of your network. Output the operation of your network in some way that you think is legible.

- **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 pieces of content: 1) Describe what is the objective function of your LP and what it means for your real-world problem 1) Attach the output of a run of GAMS–that's the .out file–where the uninterdicted operation of your network is displayed.

  These files are likely to change as you refine your modeling ideas further. For this assignment, I am just looking to see that you are progressing towards a final product.