CS 3251 - Distance Vector Routing 04/21/2017

Project Group

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Files

sample.txt

Sample output of the program. From top-to-bottom, lists the command that was run, the contents of the input files supplied for the program, and the contents of the three files that were output by the program.

src/event.py

Defines a class that implements a queue for all events specified in the given network events file. Contains methods to get events from the queue as needed.

src/graph.py

Defines a class that represents an undirected graph of the network specified in the topology file. Provides methods to retrieve edges and vertices and their neighbors.

src/router.py

Defines a class that represents a routing table on steroids, which contains least-cost pointers, hop counts, the immediate next hops for all paths, getters and setters, and the routing table itself as a 2D array.

src/simulator.py

The program main's executable, which parses input files and runs a simulation of the following three variants of the distance-vector algorithm:

- Basic routing
- Split-horizon routing
- Split-horizon routing with poison reverse

The output for each algorithm is output to its own file, which is created in the directory from which the program was run.

Compiling and Running

No need to compile - it's all in Python.

To run from the root directory, the correct usage is:

```
python3 src/simulator.py <topology file> <event file> <verbose value>
```

Where verbose is a binary flag, 0 for non-verbose output, 1 for verbose output.

If the verbose flag is 0, the following three files are output, which correspond to their namesake algorithm variants:

- output-basic.txt
- output-split-horizon.txt
- output-split-horizon-with-poison-reverse.txt

If the verbose flag is 1, the following three files are output instead:

- output-basic-detailed.txt
- output-split-horizon-detailed.txt
- output-split-horizon-with-poison-reverse.txt

Limitations and Bugs

No limitations or bugs are known. However, if any are found, please notify either Chris or Chad.