

UNSW

Report

Comp9331 Assignment 2

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First, I only complete the basic distance vector protocol this time. And don't borrow any code from somewhere else. So, there is only the description about design of my program in this report.

This program is based on four threading: main(), listen(), speak() and calculate().

Main()

Main threading is used to catch input information and store the information into dictionaries (dv and neighbor). Then run the listen and speaking. After this, it keeps checking entering_queue every seconds. If entering_queue is not empty, pop the first entered element and send this element to calculate().

calculate()

This threading is the brain of the program. Message will be transferred to list after it comes in. Then transfer the list to sender's name and the distance vector. After we get the incoming distance vector, each destination and distance pair in the incoming distance vector will be checked. The original owned distance vector will be changed if it doesn't contain the certain destination or has larger distance for the same destination. After complete checking, calculate will be closed automatically.

Listen()

This threading is started by main program and it keeps running until main program kill it in some specific conditions. The only function of this threading is listening its port and catch all incoming messages. After messages are caught by listen(), it will push this message into the entering_queue.

Speak()

This threading is started by main program. It will radio its distance vector to all recorded neighbors every second. And print its distance vector every 5 seconds.

Destroy():

This threading is not used in the program. It is a timer, it will check history_msg every second. When a router keeps quiet in 3 second. It will be detected by this threading.

The distance vector will be transferred from dictionary to a string before radio. And when router receives message, it will transfer the string to list then transfer the list to dictionary.