Comp 8505 Computer Systems Technology September 2018

Data Communication Applications

Assignment #1

Due: September 24, 1000 hrs.

Objective: To become familiar with covert channels and to design a covert channel using the TCP/IP protocol suite.

Your Mission:

Study the "covert_tcp.c" program designed by Craig Rowland and go through the three basic techniques he uses to covertly embed data into the headers. As mentioned in the accompanying paper there are several shortcomings in the code, mainly because it was a proof of concept.

You are required to analyze the code and critique it first. Then identify one or more weaknesses in the code and show how you would rectify those. Then using the base code, work with it and modify it to suit a method of sending data covertly other than what is already being done in the code.

Constraints:

- Your technique for embedding covert data into the headers must be one that is not covered by any of the techniques in the paper.
- You may only use the TCP, UDP, or IP headers for this exercise.
- You are required to show all the data supporting the success (or lack thereof) of your data embedding scheme.

To Be Submitted Electronically:

- Submit a zip file containing all the code and documents as described below in the sharein (**FT**) folder for this course under "**Assignment #1**".
- Hand in complete and well-documented design work and documents in PDF format.
- Also provide all your **source code** and an **executable.**

Assignment #1 Evaluation:

Design & Documentation:	/ 10
Testing and Supporting Data:	/ 10
Functionality:	/ 30
Total:	/ 50