CS544 -- Computer Networks
Spring 2011 – 2012
Professor Mike Kain
Term Paper # 1 – Network Protocol Analysis
Due Date: Monday, April 23rd, 2012 at 11:59pm EDT

The protocol is the heart of the definition of one layer of the computer network. The protocol defines the messages and the order in which they must be transferred. It is the basic building block of the network; it helps solve a specific problem by defining a piece of the system. Your group will have selected one protocol (at any layer of the network, but if you can't think of one, use one of the classic ones at the Session Layer (HTTP, DNS, SMTP, FTP, etc.) or something newer (BitTorrent, TLS, SSL/SSH, etc.).

Summarize in 5-7 pages **OF YOUR OWN WORDS**:

- What services that it provides (and how it does it),
- What do the messages look like,
- Does it use any of the common themes that we've discussed in class?
- Does it do authentication (and other security issues)?
- Describe any DFAs that it uses,
- Is it extensible? (How can new commands/responses/DFA states be added?)
- TRUST – how do the two (or more) sides of the protocol trust each other?

The goal of this paper is to try to grade this protocol as a generic protocol (did the writers know what they were doing?) NOT to give me a definition / "book report" about the protocol. There should be some description and detail of what the protocol does, but the paper should be more analysis of the protocol as a protocol. How do you think of it as a generic protocol (good, bad, simple, complex, chatty, secure, etc.?) At the end of this exercise, you should be to break down any networking protocol into its major parts and understand how and why it works because of that decomposition. This analysis should help you build a strong networking protocol later in the semester. Also try to include any ideas or conclusions why you think the designers chose to implement the protocol the way that they did.

Ensure that you reference any articles that you use. Plagiarism is a very serious issue; if you have any questions what constitutes plagiarism, please contact me. All phrases, pictures, etc that are taken from a copyrighted work should be referenced through a footnote detailing exactly where it was taken from. I assume all references can be found on-line, please hand in any that you use that we cannot get through the web for free.

This is worth 10% of your final grade. Appearance _does_ count as part of the final grade. All submissions should made through BBVista/WebCT.

Please include the first letter of your first name and your last name as the name of your submission (like mkain_analysis.pdf or mkain_paper1.pdf).