CS460 Writing Assignment Two

Due 4/6/10

Mr. Lee is considering reworking Greater Hong Kong's part of the world network to use Content-centric Networking (CCN) as promoted by Van Jacobson and his team at PARC and discussed in http://www.parc.com/publication/2318/networking-named-content.html instead of the traditional point-to-point Ipv4/IPv6 networking. Mr. Lee wants an expert's perspective on how such a new network architecture affects the security of his organization, so he has contracted with you for such a report.

Report Goals

Mr. Lee's Greater Hong Kong is a multi-national conglomerate with a varied set of activities. From a networking perspective, they provide networked services to paying customers. They use the network to perform internal business between multiple business sites. They use the network to provide information and gather payments for use of their physical holdings.

Mr. Lee's network experts are enthused with the simplicity and potential for improved broadcast performance that CCN offers. While performance is important, Mr. Lee recognizes improving performance while diminishing confidentiality, integrity, and availability is not worth the trade-off.

Mr. Lee is interested in general how security impacts the CCN model. Specifically, he has the following questions:

- How do traditional network security elements from IP apply to CCN including firewalls, intrusion detection, tunnels, and domain name servers (DNS)?

- The CCN paper shows signer and signing information in the packet. How would this information be used to implement security end-to-end?

- Successful security attacks historically have originated from people thinking outside of the expected bounds of using a program or protocol. Identify at least one line of attack that you could try that breaks the expectations of the CCN designers.

- If Greater Hong Kong leads the way with CCN deployment, how will they interact with traditional IP networks? What are the security implications of such backwards compatibility?

The Deliverable

Your report should address Mr. Lee's specific questions about CCN and security. You should also provide any high level suggestions you have about proceeding with a CCN deployment.

Formatting

The report should be roughly five pages long. Format requests include: 10-12 point font, single space within paragraphs, and double or space and a half between paragraphs. A diagram or two may be included to aid in your exposition.