CASP, Part 2 of 9: Network Security

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Prerequisites: This course assumes that you have familiarity with information technology, basic networking, and basic security concepts. No scripting or “hacking” experience is required. Having windows command line experience as well as having administrative rights on your machine will be helpful.

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Course description: Addressing for computer communications can seem overwhelming, but this course will give you an overview of IP and MAC addressing to help make the process more approachable. We will examine the source and destination addresses for network frames and packets, and discuss TCP and UDP to understand how reliable these protocols may or may not be in different circumstances. In addition, network security, such as secure design practices and secure communications, will be discussed as well as firewalls, DMZs, network access control and more. Finally, we'll look at online security using SSL and TLS and Domain Naming Services, or DNS. This course is part of a series covering the CompTIA Advanced Security Practitioner (CASP).

Course outline:

TCP-IP
- Introduction
- TCP/IP
- Layers
- Network Interface Layer
- Internet or Network Layer
- Transport or Host to Host Layer
- Application Layer
- TCP vs. UDP
- TCP
- TCP Flags
- TCP
- UDP
- Addressing
- IP Addressing
- IP Addressing - IPv4
- Subnet Mask
- Classes of Addresses - IPv4
- MAC Addressing
- Summary

Secure Design
- Introduction
- Secure Design
- Firewalls
- Packet Filtering
- Stateful Packet Firewalls
- Application Gateway
- Placement
- Routers
- Switches
- Routers and Switches
- NAC
- DMZ
- Summary

Secure Communication
- Introduction
- Secure Communications
- SSL
- SSL - Under the Hood
- TLS
- IPSec
- What Makes up IPSec
- IPSec Modes
- DNS
- DNS Zone Transfers
- DNSSEC
- Kerberos
- Kerberos Flow
- Demo: Wireshark
- Demo: Traffic
- Summary

Zone Transfer Demo
- Introduction
- Demo: Zone Transfer
- Demo: Attempt Domain Transfer
- Summary