Introduction to Networking Administration

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➤ Course Objective

- To understand the implementation, design principles and goals of a Computer Network and touches upon the various routing algorithms used in CN (such as link-state and distance vector).

➤ Target Audience

- Security personnel who are currently tasked with assessing the technical risks of cloud computing
- Network and systems administrators who currently manage private clouds or need to leverage hybrid and/or public cloud services
- Technical auditors and consultants who need to gain a deeper understanding of cloud computing and security concerns
- Security and IT managers who need to understand the risks of cloud computing and advise business management of the risks and various approaches involved

Course Outline

- **Day1**
- Router Design Basics
- Router Design
- Basic Router Architecture
- Decision: Crossbar Switching
- Switching Algorithm: Maximal Matching
- Head of Line Blocking
- Scheduling and Fairness
- Max-Min Fairness

- **Day 2**
- Domain Name System (DNS)
- Record Types
- Examples (using "dig")
- Lookup IP Address

- **Day 3**
- Congestion Control & Streaming
- Congestion Control
- AIMD (TCP Congestion Control)
- Data Centers & TCP "Incast"
- Barrier Synchronization & Idle Time
- Multimedia & Streaming
- Digitizing Audio & Video
- Streaming Video
- Skype

- **Day 4**
- Rate Limiting and Traffic Shaping
- Traffic Classification & Shaping
- Source Classification
- Leaky Bucket Traffic Shaping
- (r, t) Traffic Shaping
- Shaping Bursty Traffic Patterns
- Power Boost
- Effects on Latency
- Buffer Bloat
- Packet Monitoring

- **Day 5**
- Content Distribution
- The Web and Caching
- HTTP Requests
- Persistent Connections
- Content Distribution Networks (CDNs)
- Server Selection
- Content Routing
- Bit Torrent
- Solution to Freeriding: "Choking"
- Distributed Hash Tables
- Consistent Hashing

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1) Scientific article on flash memory.
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Price (USD)

**Communicate with the training department
to know the participation fees**
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The details of the bank account

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