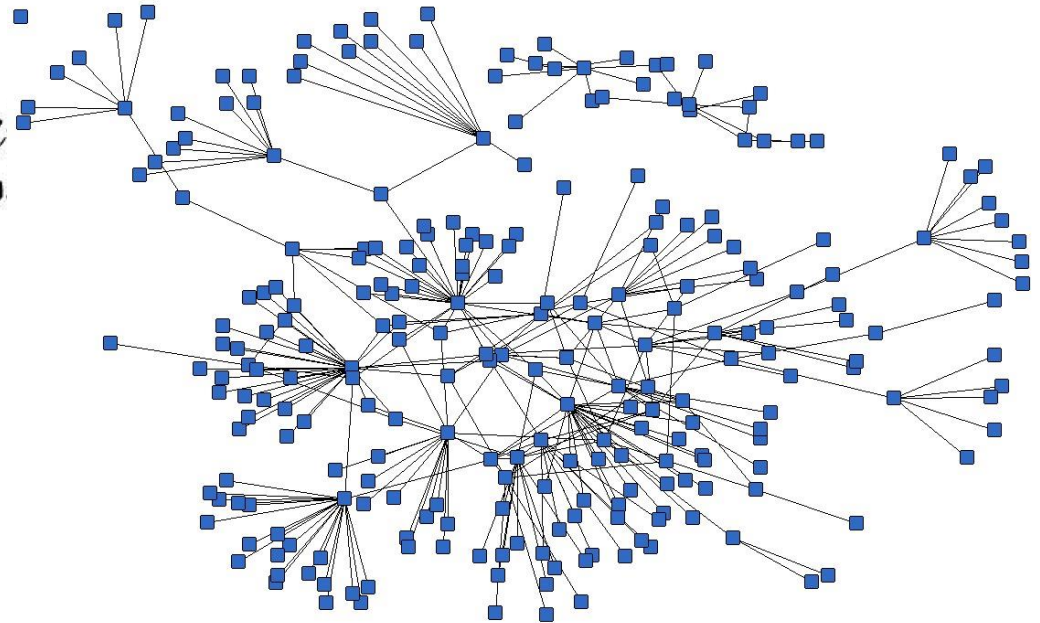
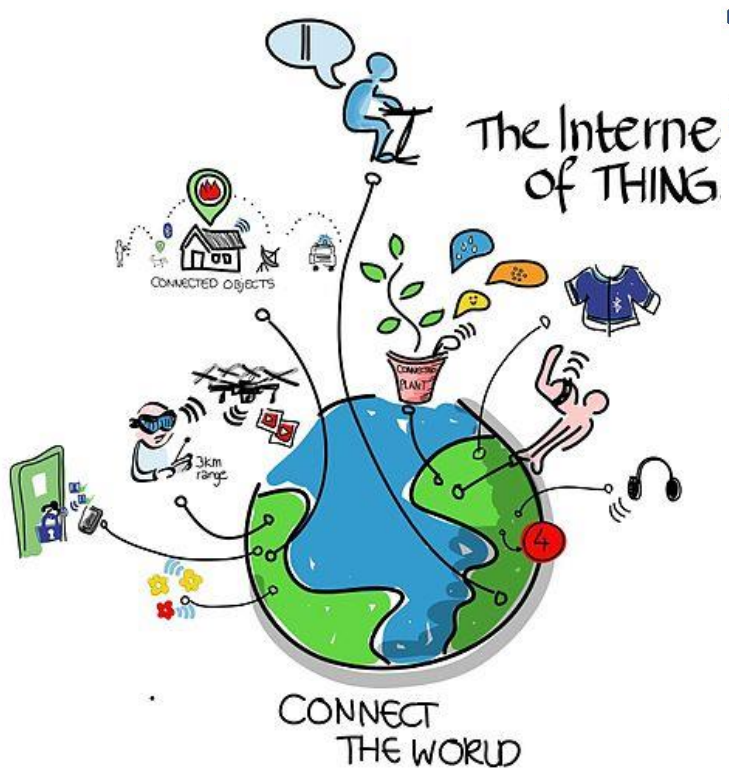


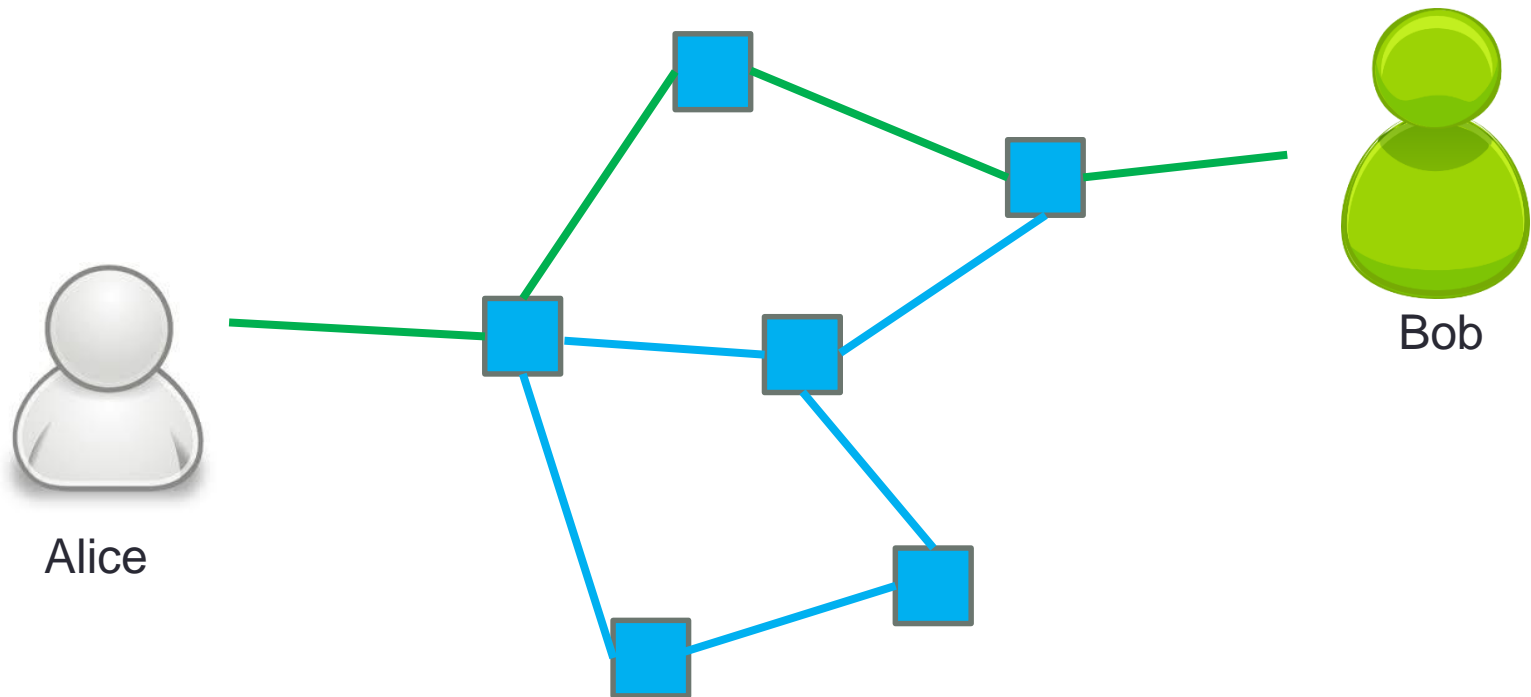
NETWORK SECURITY PRACTICES – ATTACK AND DEFENSE

Network Security

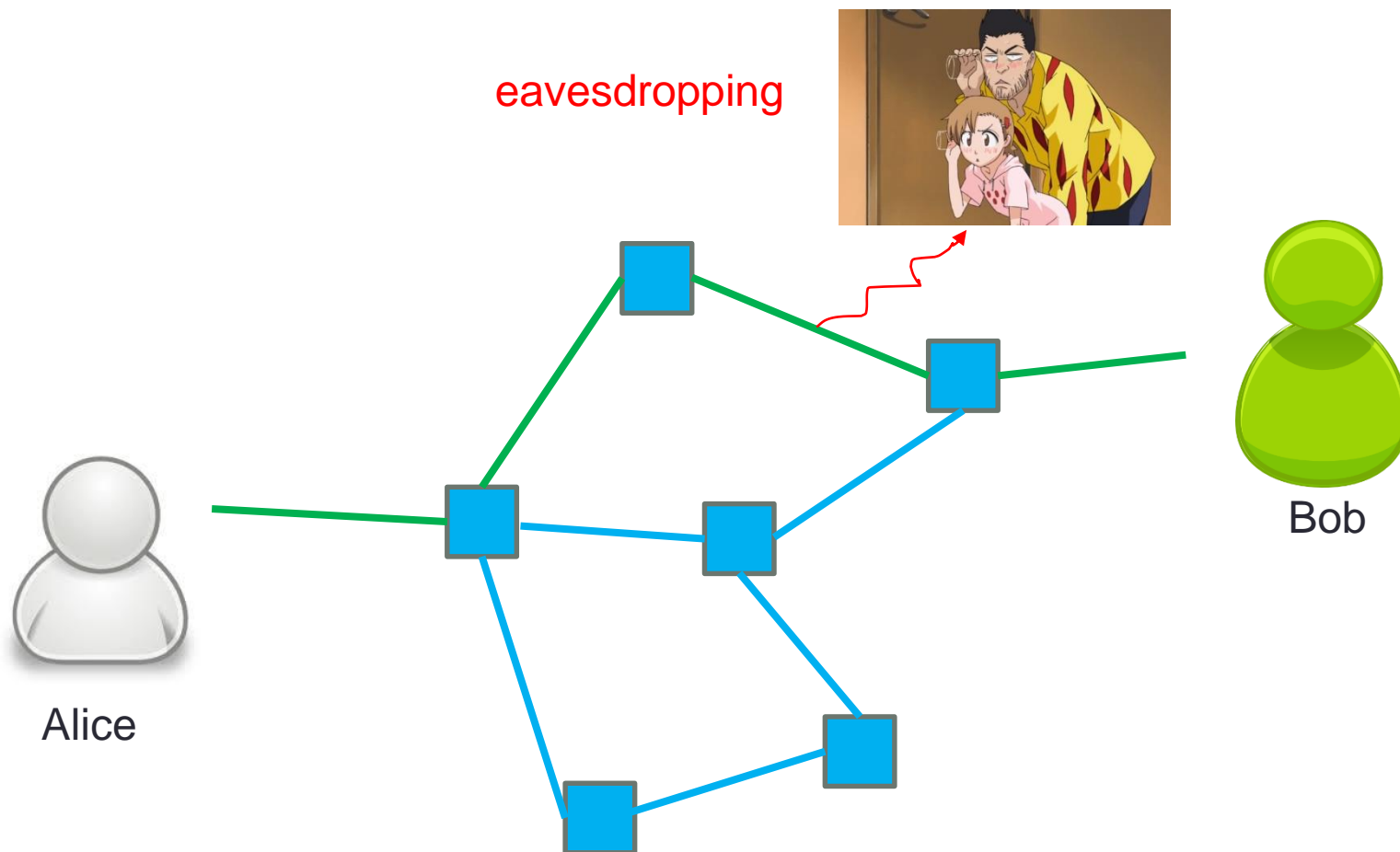
What is Network ?



What is Network Security about?

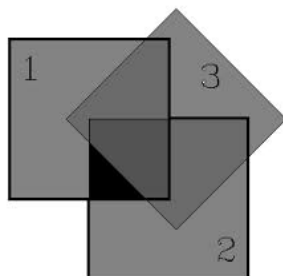


What is Network Security about?



Quantum Key Distribution (BB84)

| Basis | 0 | 1 |
|-------|---|---|
| + | ↑ | → |
| × | ↗ | ↘ |



| | | | | | | | | |
|-------------------------------------|---|---|---|---|---|---|---|---|
| Alice's random bit | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| Alice's random sending basis | + | + | × | + | × | × | × | + |
| Photon polarization Alice sends | ↑ | → | ↘ | ↑ | ↘ | ↗ | ↗ | → |
| Eve's random measuring basis | + | × | + | + | × | + | × | + |
| Polarization Eve measures and sends | ↑ | ↗ | → | ↑ | ↘ | → | ↗ | → |
| Bob's random measuring basis | + | × | × | × | + | × | + | + |
| Photon polarization Bob measures | ↑ | ↗ | ↗ | ↘ | → | ↗ | ↑ | → |
| PUBLIC DISCUSSION OF BASIS | | | | | | | | |
| Shared secret key | 0 | | 0 | | | 0 | | 1 |
| Errors in key | ✓ | | ✗ | | | ✓ | | ✓ |



HOME COMPANY **NETWORK ENCRYPTION** PHOTON COUNTING RANDOMNESS NEWS CONTACTS

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IDQ's Cerberis solution offers a radically new approach to network security, combining the sheer power of the [Centaurs](#) high-speed layer 2 encryption solution with the proven forward secrecy of quantum key distribution (QKD) technology. Cerberis ensures long term data protection on point-to-point backbone and storage networks.



PRODUCTS

- [Centaurs L2 encryption \(pdf\)](#)
- [Cerberis QKD Server \(pdf\)](#)
- [Clavis² QKD Research Platform \(pdf\)](#)

QKD USER CASES

- [Gigabit Ethernet Government Network](#)
- [10G Ethernet Encryption for Disaster Recovery Center](#)
- [Colt QKD as a Service](#)

WHITE PAPERS

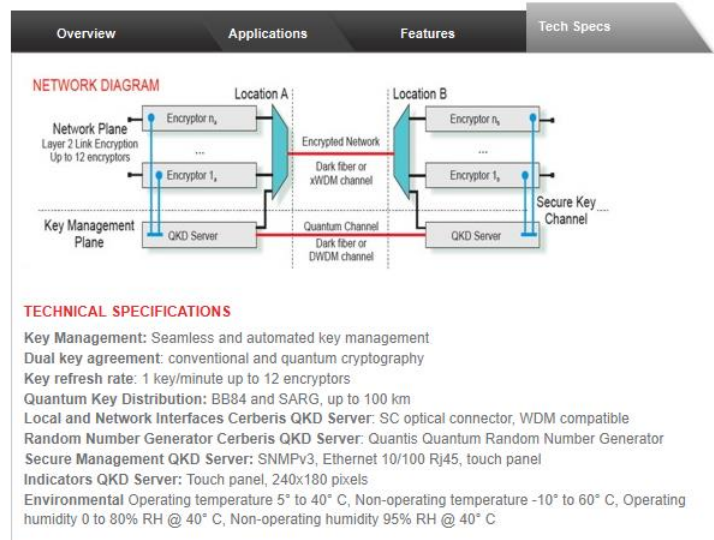
- [Optical Fiber Vulnerability](#)
- [Understanding QKD](#)

VIDEOS

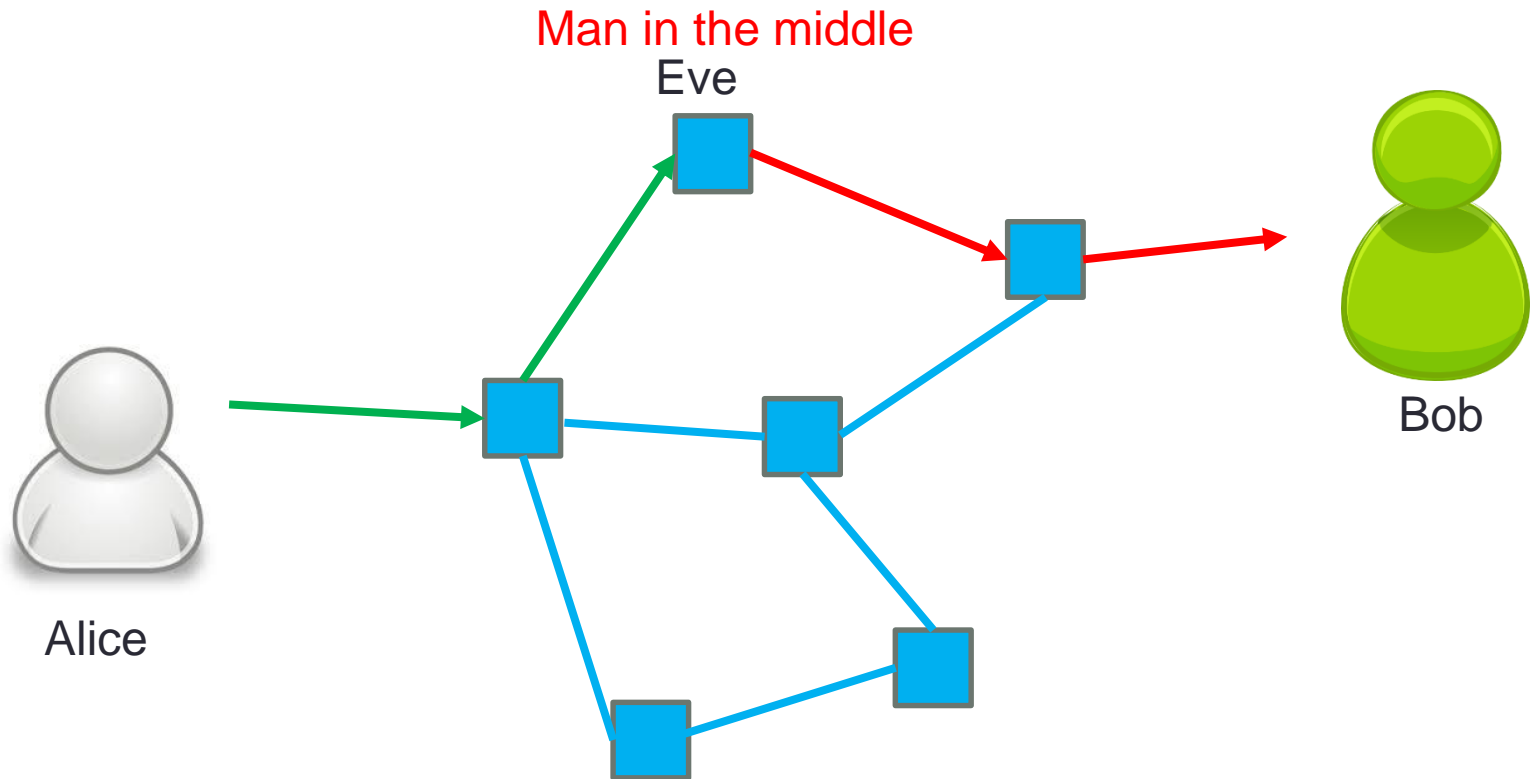
- [How to find an optical fiber cable](#)
- [How to hack an optical fiber](#)

RESOURCE CENTERS

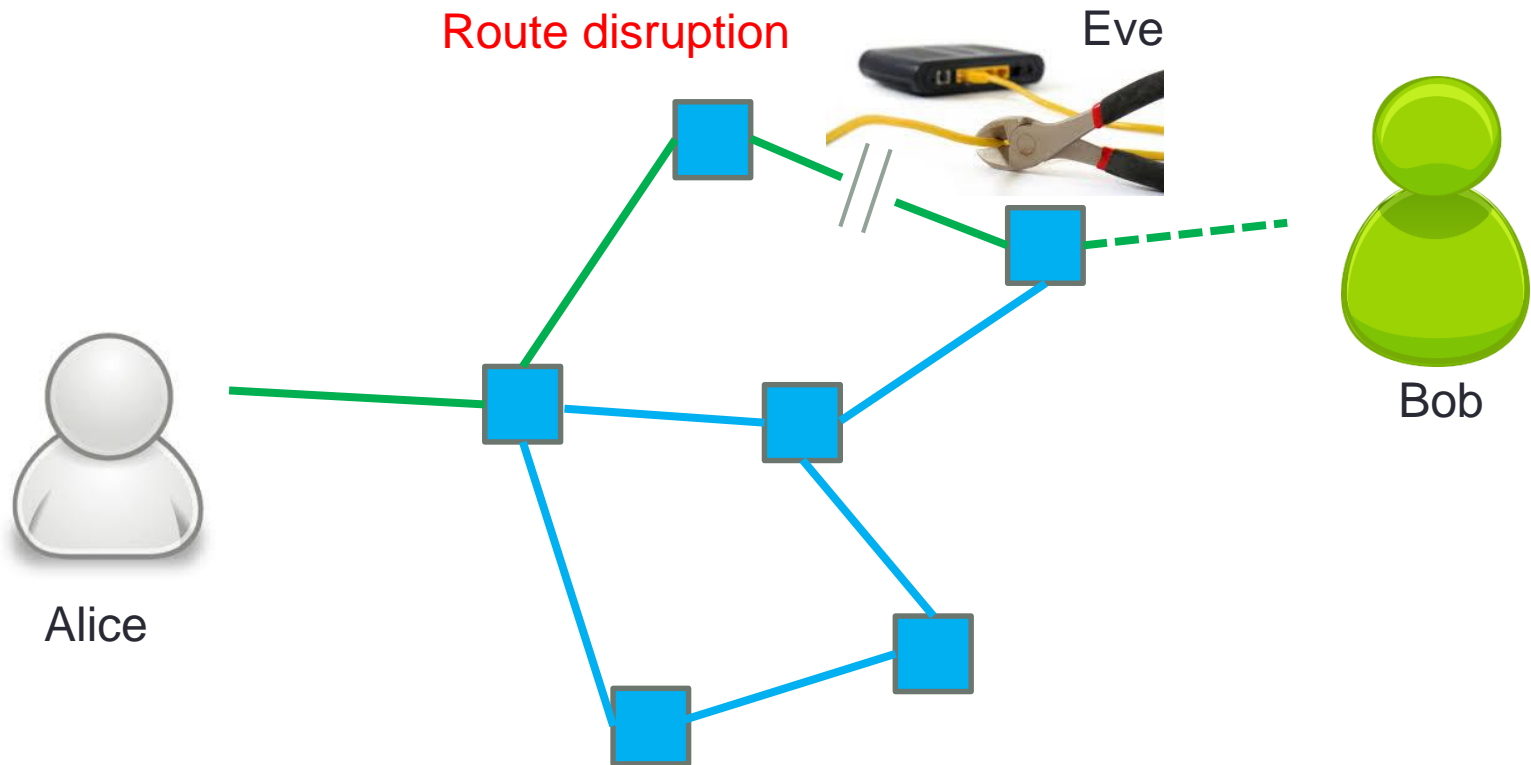
- [QKD Resource Center](#)
- [Network Encryption Resource Center](#)



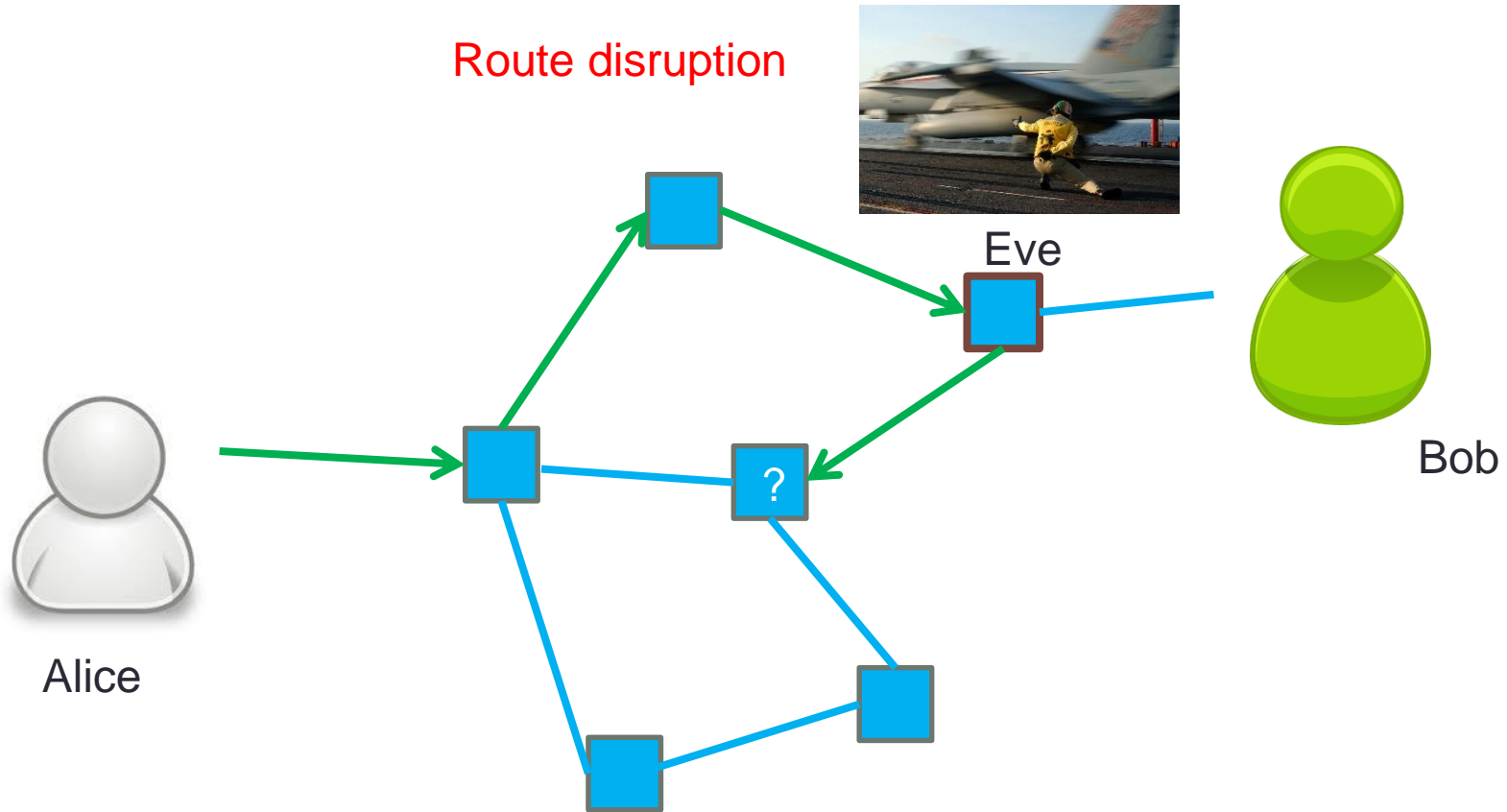
What is Network Security about?



What is Network Security about?



What is Network Security about?



<http://research.dyn.com/2008/02/pakistan-hijacks-youtube-1/>

Pakistan hijacks YouTube



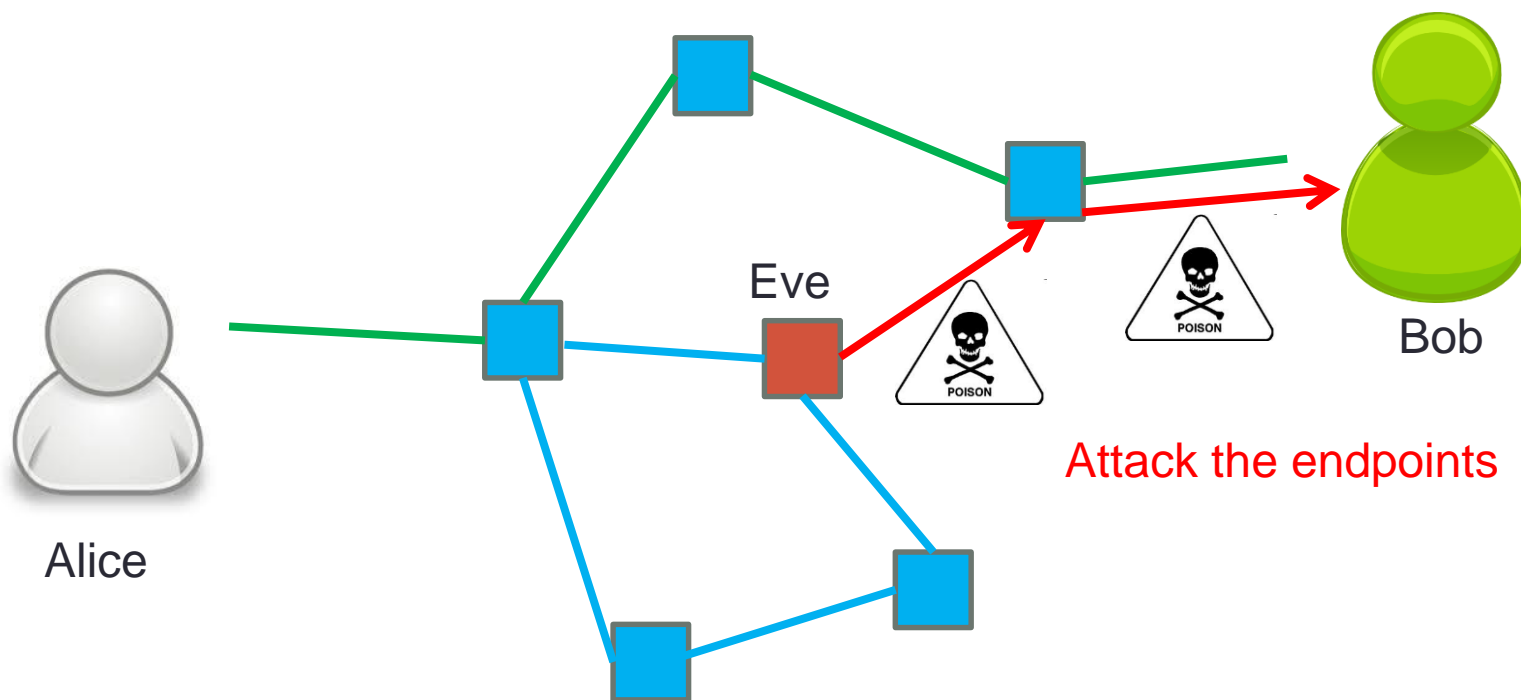
Late in the (UTC) day on 24 February 2008, Pakistan Telecom (AS 17557) began advertising a small part of YouTube's (AS 36561) assigned network. This story is almost as old as BGP. Old hands will recognize this as, fundamentally, the same problem as the [infamous AS 7007 from 1997](#), a [more recent ConEd mistake of early 2006](#) and even [TTNet's Christmas Eve gift 2004](#).

Just before 18:48 UTC, Pakistan Telecom, in response to [government order](#) to block access to YouTube (see [news item](#)) started advertising a route for 208.65.153.0/24 to its provider, PCCW (AS 3491). For those unfamiliar with BGP, this is a more specific route than the ones used by YouTube (208.65.152.0/22), and therefore most routers would choose to send traffic to Pakistan Telecom for this slice of YouTube's network.

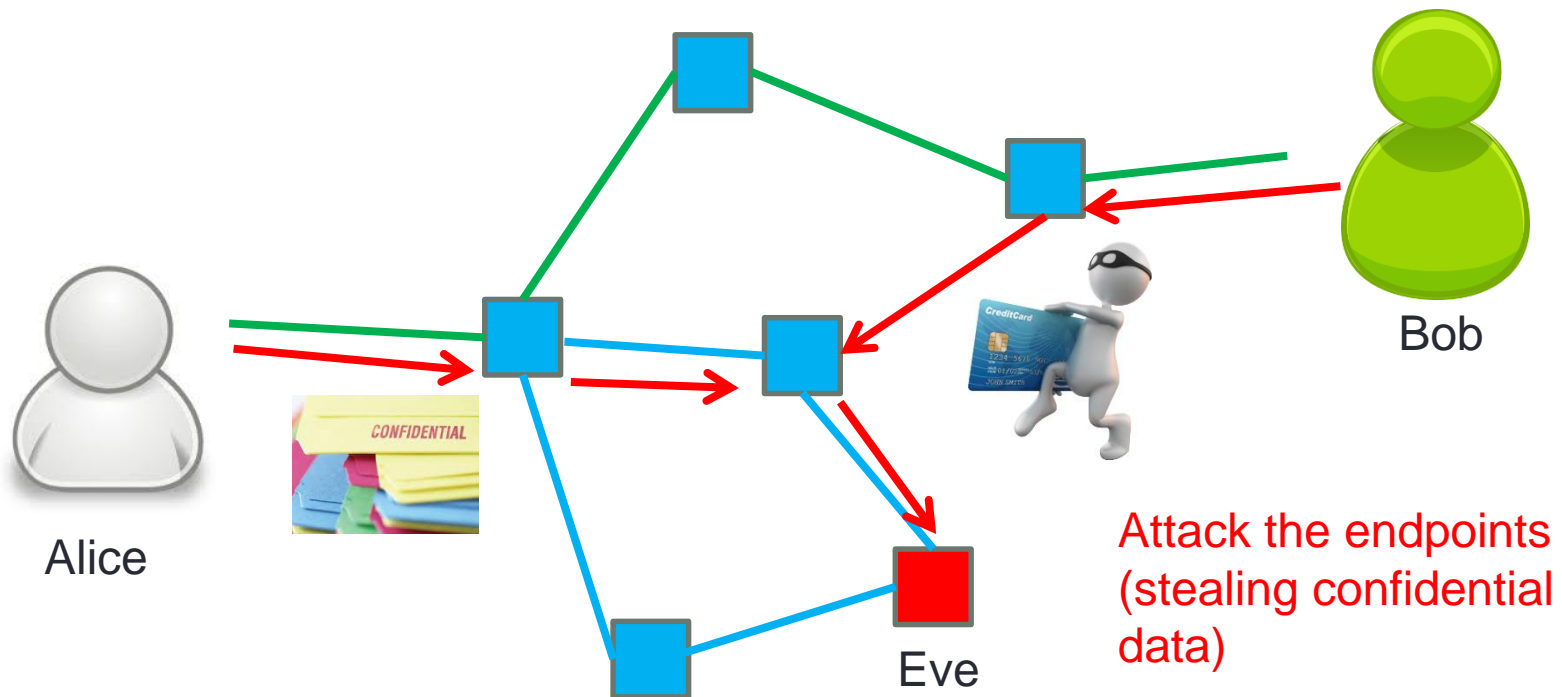
I became interested in this immediately as I was concerned that I wouldn't be able to spend my evening watching imbecilic videos of cats doing foolish things (even for a cat). Then, I started to examine our mountains of BGP data and quickly noticed that the correct AS path ("Will the real YouTube please stand up?") was getting restored to most of our peers.

The data points identified below are culled from over 250 peering sessions with 170 unique ASNs. While it is hard to describe exactly how widely this hijacked prefix was seen, we estimate that it was seen by a bit more than two-thirds of the Internet.

What is Network Security about?



What is Network Security about?



CIA Head: We Will Spy On Americans Through Electrical Appliances

Global information surveillance grid being constructed; willing Americans embrace gadgets used to spy on them



Steve Watson

Prisonplanet.com

March 16, 2012

CIA director David Petraeus has said that the rise of new "smart" gadgets means that Americans are effectively bugging their own homes, saving US spy agencies a job when it identifies any "persons of interest".

Speaking at a summit for In-Q-Tel, the CIA's technology investment operation, Petraeus made the comments when discussing new technologies which aim to add processors and web connections to previously 'dumb' home appliances such as fridges, ovens and lighting systems.



0:14 / 3:04

CIA announces the "Internet of Things" to spy on you



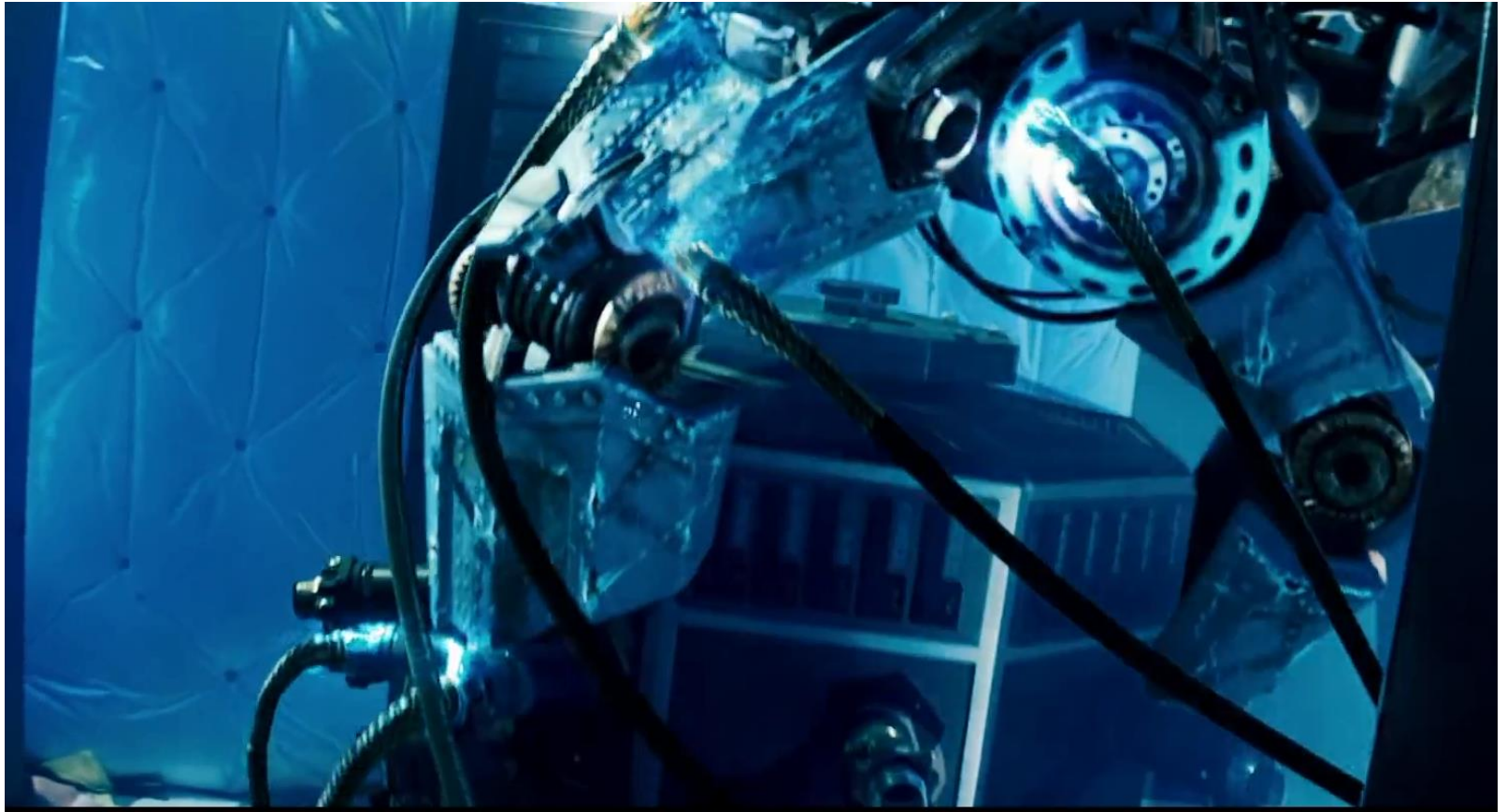
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