



TRANSPORTATION  
TECHNOLOGY  
ASSOCIATES

# **Cybersecurity 101: Hardening the Physical Network**

***"I know you know this stuff, but do you  
practice it?"***

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# **Network Geek Question?**

## **What's Layer 1 of the Open Systems Interconnection (OSI) Model?**



# **Network Geek Question? What's Layer 1 of the Open Systems Interconnection (OSI) Model?**

**Physical: Transmission and reception of raw  
bit streams over a physical medium.**

***At the base of all communications systems  
something needs to connect A to B.***

***AKA the Wire!***

# **What's the easiest way to crash a network?**



# **What's the easiest way to crash a network?**

***Attack, Attack, Attack!!!!***

***Steal Passwords?***

***Eavesdropping?***

***Launch Denial of Service?***

***SQL Injection?***

***Trojan Horse?***

***Send in the Worms?***

**What's the easiest way  
to crash a network?**

**How about we unplug it!**





**Without the Physical there  
would be no Logical.**

## **Hardening your Physical Network**

- **Data Communications Facilities**
- **Redundancy**
- **Cabling Infrastructure**
- **Network Equipment**
- **Devices and Connections**

# Communications Spaces

**Look Goldilocks, the doors unlocked, and  
no one's home.**



# **Communications Spaces**

**Data Communications Facilities:  
Data Center, MDF / IDF, Communications  
Closets**

**Lock the door, and make sure you know who  
has the key! (Better yet, don't use a key.)**

**Implement Electronic Access Control on all  
access point to critical infrastructure. (audit  
who, when, and where.)**

**Implement Video Surveillance in  
communications nodes.  
( I see you 😊 )**

**The Insider will always be your Biggest Threat.**

# **Redundancy**

**It's technically a Tropical Storm not a Hurricane. Does it really matter?**

**What are Rolling Blackouts?**

**Lightning, what lightning?**

**Who turned off the lights?**

**And the worst of the worst "I can't check my Facebook!" The internet is down!**



# **Redundancy**

**Power will go out, make sure your network doesn't.**

**Provide appropriate UPS, Surge Protection, and Generator Power to your network and equipment.**

**If you live in the “Cloud” or have remote resources via the internet, your only as good as your provider, consider having a back-up plan.**

# **Network Equipment**

**Is that a Network Switch in the staff break room?**

**“Yeah, it seemed like a good idea at the time.”**



# **Network Equipment**

**Secure your equipment. Keep it accessible  
only to individuals who need access.**

**Put your equipment in appropriate  
locations.  
LOCK YOUR CABINETS!**

# **Cabling Infrastructure**

**I can't ping that video camera?**

**"That's because someone cut the wire."**



## **Cabling Infrastructure**

**Ensure your critical infrastructure and device deployment is appropriately hardened.**

**Protect your structured cabling from the elements and sabotage.**

**Cable Management, Network Monitoring Systems**

# **Network Devices and Connections**

**Wow, I just plugged my Laptop into this  
network drop and I can see the “World”.**



# **Network Devices and Connections**

**Keep rouge devices off your network.  
Practice network port security. Remember,  
if someone can plug it in, they will.**

**Thank You.**

**Questions?**