

# Cybersecurity: A Big Concern for Small Fish

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**CYBER  
ATTACKS  
AHEAD**

Everything is vulnerable to  
some point!

- Computers – laptops, desktops & servers
- Devices – phones, tablets, Nintendo DS
- IoT devices – thermostats, A/C controllers
- Network equipment – switches & routers
- Software Applications
- Operating Systems

# IoT Devices Make Sense for Libraries

Easy to monitor and adjust for utility cost savings

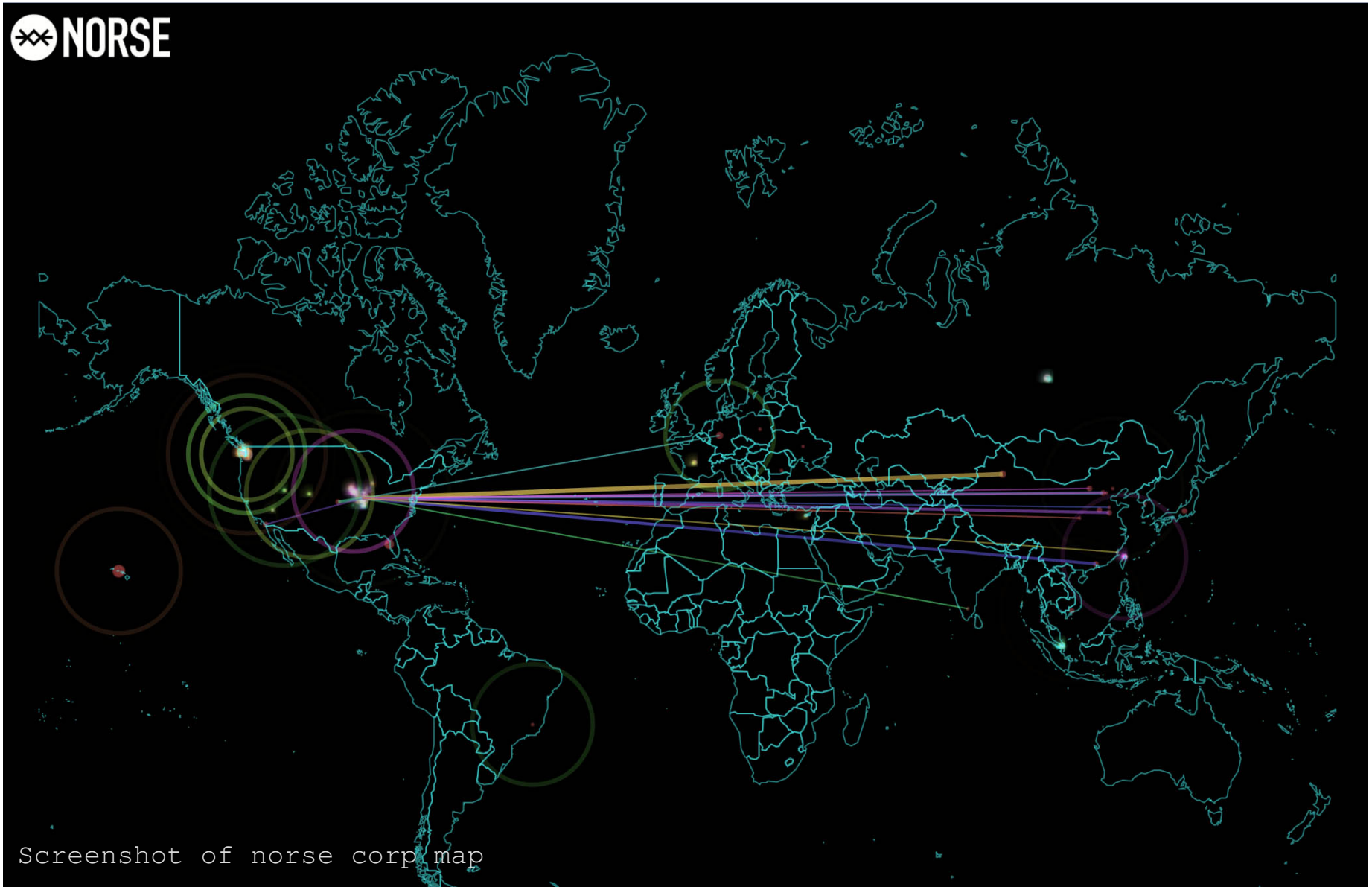
Can be remotely monitored by staff or an outside service

Little to no burden on existing staff

## What is IoT?

IoT, the “Internet of Things,” is a term that describes a network of physical objects connected to the internet. These may be discrete items like light bulbs or larger systems like building automation solutions. Embedded in each device are electronics capable of network connectivity along with sensors or other features.

# Cyber attacks come from EVERYWHERE!!



# What Do They Want and Why??



# Not Just Personal Information

1. Hardware and Bandwidth
  - a. building botnets
  - b. serving spam
  
2. Mischievous Purposes
  - a. Deface/Defame
  - b. Hosting porn/malware



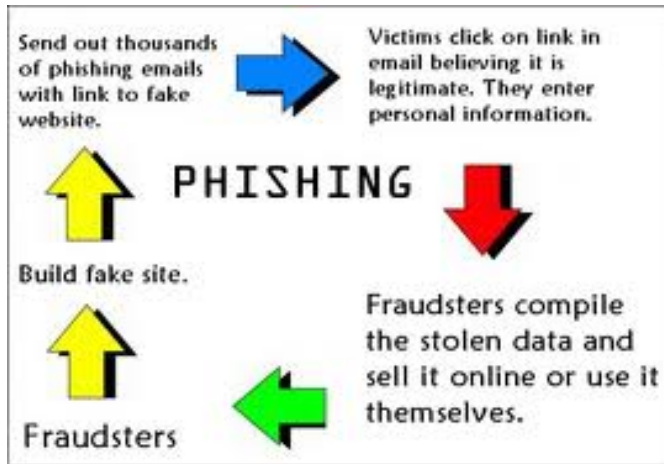
Social Engineering paves the way!

Ransomware

Phishing

Worms & Trojans

It all starts with an exploit kit...



# What Phishing Is and How It Works







# Your computer has been locked!

## Your computer has been locked due to suspicion of illegal content downloading and distribution.

Mentioned illegal content (414 Mb of video files) was automatically classified as child pornographic materials. Such actions, in whole or in part, violate following U.S. Federal Laws:

18 U.S.C. § 2251- Sexual Exploitation of Children (Production of child pornography)

18 U.S.C. § 2252- Certain activities relating to material involving the sexual exploitation of minors (Possession, distribution and receipt of child pornography)

18 U.S.C. § 2252A- certain activities relating to material constituting or containing child pornography

**Any individual who violates, or attempts to violate, or conspires to violate mentioned laws shall be sentenced to a mandatory term of imprisonment from 4 to 30 years and shall be fined up to \$250,000.**

### Technical details:

Involved IP address: [REDACTED]

Involved host name: [REDACTED]

Source or intermediary sites: <http://pornerbros.com>

All suspicious files from your computer were transmitted to a special server and shall be used as evidences. Don't try to corrupt any data or unblock your account in an unauthorized way.

Your case can be classified as occasional/unmotivated, according to title 17 (U. S. Code) § 512. Thus it may be closed without prosecution. Your computer will be unblocked automatically.

**In order to resolve the situation in an above-mentioned way you should pay a fine of \$300.**

## HOW TO UNLOCK YOUR COMPUTER:

1 Take your cash to one of this retail locations:

Walmart

2 Get a MoneyPak and purchase it with cash at the register

3 Come back and enter your MoneyPak code to unlock your computer (5 attempts available)

Code:

1	2	3
4	5	6
7	8	9
Delete	0	Enter

Permanent lock on 05/01/2013 5:20 p.m. EST

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## LET'S DO SOME MATH

- *Number of users redirected daily* 20,000
- *A typical success rate of Exploit Kits:* 10%
- *Percentage of victims to pay ransom:* 0.5%
- *Daily income:*  
 $20,000 \times 10\% \times 0.5\% \times \$300 = \$3,000$
- *Monthly income:* \$90,000
  
- *Net monthly income:*

$$\$90,000 - \$5,900^* = \$84,100$$



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\*Assumes \$5,900 for a custom malware payload



# WORST PASSWORDS OF 2016



SplashData releases its annual list in an effort to encourage the adoption of stronger passwords to improve Internet security. The passwords evaluated are mostly from North American and Western European users. The list shows many people continue to put themselves at risk for hacking and identity theft by using weak, easily guessable passwords.

RANK	PASSWORD	CHANGE FROM 2015
1	123456	Unchanged
2	password	Unchanged
3	12345	2 ↑
4	12345678	1 ↓
5	football	2 ↑
6	qwerty	2 ↓
7	1234567890	5 ↑
8	1234567	1 ↑
9	princess	12 ↑
10	1234	2 ↓
11	login	9 ↑
12	welcome	1 ↓
13	solo	10 ↑
14	abc123	1 ↓
15	admin	NEW
16	121212	NEW
17	flower	NEW
18	password	6 ↑
19	dragon	3 ↓
20	sunshine	NEW
21	master	4 ↓
22	hottie	NEW
23	loveme	NEW
24	zaq1zaq1	NEW
25	password1	NEW

2016 list is based on over 5 million passwords posted or for sale on the Internet



"123456" and "password" remain #1 and #2 for third straight year.



Almost 4% of people use the worst password, 123456. Just over 10% of people use one of the 25 worst passwords.



"Hottie" and "loveme" and "flower" make their first appearances on the SplashData list  
 "Princess" and "solo" keep the Force from Star Wars going for another year.  
 Three variations of "password" on the list -- "password", "password.", and "password1".



"We have seen an effort by many people to be more secure by adding characters to passwords, but if these longer passwords are based on simple patterns they will put you in just as much risk of having your identity stolen by hackers"

Morgan Slain, CEO of SplashData

# The Best Defense is a Strong Passphrase!!!

i shall use strong passwords.

i shall use strong passwords.

i shall use strong passwords.

i shall use strong passwords.

I sha!! u53 \$4r0ng-p@5sw0rdz!

x	0	x
0	x	x
0	0	x

**Strong passwords are a minimum of 8 characters in length & include uppercase, lowercase, numbers & special characters.**

It's a Much Different World Today, and It Will Be Even More So Tomorrow, Even in Libraries...



Smart Devices will become more ubiquitous:

Amazon Echo/Google Home

Wireless Thermostats

Irrigation controllers (sprinkler timers)

Smart Vents

Lighting

Electrical Outlets

Appliances both large & small

Locks



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