



# Protecting Yourself (and others) in a Crazy Online World



# Who am I?

- ✓ How do you know?
- ✓ How do I prove it to you?
- ✓ Without compromising my privacy?

## Identity Paradox



*"On the Internet, nobody knows you're a dog."*

Written by [Peter Steiner](#) and  
published by [The New Yorker](#) on  
July 5, 1993

# Who am I?

**Ron Woerner, CISSP, CISM**

- **Cybersecurity Professor, Bellevue University**
- **Chief Security Evangelist, RWX Security Solutions**



**What the \$%\$#  
are we doing  
here?**

# Agenda

- Why should I care?
- What's going on?
- Attack methods / Top issues
- Solutions
  - Awareness
  - Simple security measures
  - Protection, Detection, Response
- Where to go from here

# Crown Jewels

What's most important to you?

Where is it?

How is it used?

# Phishing & Business Email Compromise (BEC)

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## Worldwide Sweep Targets Business Email Compromise

### Criminal Cases Show Need to Verify Before Wiring Funds



**Operation reWired**

The FBI worked with partner agencies domestically and in multiple countries around the world in a large-scale, coordinated effort to dismantle international BEC schemes.

September 2019



# Business Email Compromise (BEC) Email Account Compromise (EAC)

*Sophisticated scams are carried out by fraudsters compromising email accounts through social engineering or computer intrusion techniques to conduct unauthorized transfer of funds.*



# Variety of BEC

- Vendor Fraud – Invoice Payments
- Compromised or spoofed email accounts requesting a wire (ACH) transfer
- HR Requests
  - W2 or other PII
  - Changes to payroll

How they find victims



# Email Hacking

- Finding email addresses is trivial
- Inherently insecure
- Phishing, Spear Phishing, Whaling



# How they communicate with victims

Spoofed email:

From: [john.smith@domain.com](mailto:john.smith@domain.com)

Reply-To: [bad.guy@scammer.com](mailto:bad.guy@scammer.com)

Look-alike domain registered:

[john.smith@domain.com](mailto:john.smith@domain.com) legitimate

[john.smith@dornain.com](mailto:john.smith@dornain.com) fraudulent

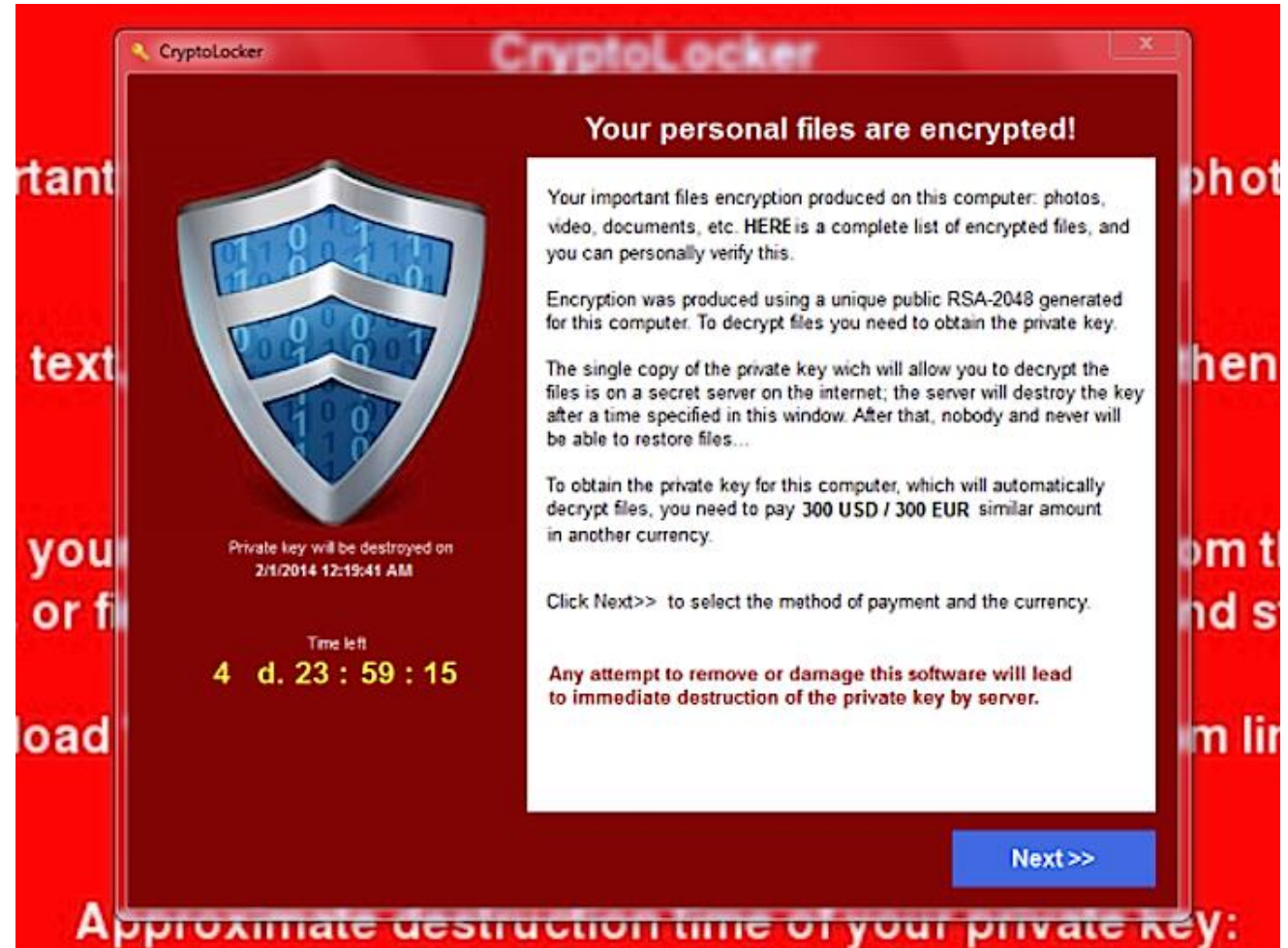
Compromised email account:

Phishing or malware used to steal credentials for

[john.smith@domain.com](mailto:john.smith@domain.com)

# Ransomware

<https://www.nomoreransom.org/>



ran·som·ware, ransəm, we(ə)r/ *noun*

A type of malicious software designed to block access to a computer system until a sum of money is paid.

# Stolen Credentials

The image shows a login form with a title bar labeled "Login" and a version number "4.0.12" in the top right corner. Below the title bar, there are two input fields: "Username:" and "Password:". To the right of the "Password:" field is a blue "Login" button. At the bottom left, there is a link "Forgot your password?". At the bottom right, there is a link "Click here to register" which is highlighted with a red rectangular border.

# Required for Fraud



**Dissecting the Psychology of the Wily Insider**

<https://www.peerlyst.com/posts/dissecting-the-psychology-of-the-wily-insider-ron-woerner>



# What can I do?



# What You Can (Should) Do

**Only You can  
Protect  
Yourself  
and Others**



# What You Can (Should) Do



# Simple Steps for Cyber Security

- “Trust, but verify”  
Be a little skeptical
- Account Security
  - Multi-factor authentication
  - Password keepers
- “Be Prepared”
  - It’s not if, but when...
- Updated your PC & apps
  - Pay a little now or a lot later
- Encrypt
  - Websites
  - Email
  - Databases

# Ransomware Defenses

- Patch - Update
- Backup data
- Active Spam & Internet Filters
- Update Anti-Virus
- Employee discretion
- Incident Response Plan
- DHS CISA: <https://www.us-cert.gov/Ransomware>
- CIS Facts, Threats, and Countermeasures: <https://www.cisecurity.org/blog/ransomware-facts-threats-and-countermeasures/>
- CIS Primer: <https://www.cisecurity.org/white-papers/ms-isac-security-primer-ransomware/>

# Trust, but Verify

- If it seems too good to be true...
- Trust your gut – Be a little skeptical
- When in doubt, ask - #1 way to defeat social engineering
- Procedures for transferring \$
- Ask your vendors about their security
- Verify files & websites using Virus Total: [virustotal.com](https://www.virustotal.com)

# Going for Help

- FBI Internet Crimes Complaint Center (IC3): <https://www.ic3.gov/default.aspx>
- DHS [Cybersecurity and Infrastructure Security Agency \(CISA\)](#)
- US-CERT Incident Reporting System: <https://www.us-cert.gov/forms/report>
- State Patrol and Local Police
- Your Bank & Insurance



# Resources

- SCORE Library: [https://omaha.score.org/browse-library-63?f%5B0%5D=im\\_field\\_topics%3A71&f%5B1%5D=content%3Asecurity](https://omaha.score.org/browse-library-63?f%5B0%5D=im_field_topics%3A71&f%5B1%5D=content%3Asecurity)
- NIST Small Business Cybersecurity Corner: <https://www.nist.gov/itl/smallbusinesscyber>
- FTC: Cybersecurity for Small Business: <https://www.ftc.gov/tips-advice/business-center/small-businesses/cybersecurity>
- SBA: <https://www.sba.gov/managing-business/cybersecurity>
- StaySafeOnline (NCSA): <http://staysafeonline.org/>
- StopThinkConnect (DHS CISA): <https://stopthinkconnect.org/>

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Credit: Wendy Szwerc

The vast majority of smaller businesses rely on information technology to run their businesses and to store, process, and transmit information. Protecting this information from unauthorized disclosure, modification, use, or deletion is essential for those companies and their customers.



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**CYBERSECURITY FOR**

**SMALL BUSINESS**

### PROTECT YOUR SMALL BUSINESS

Learn the basics for protecting your business from cyber attacks. The business cybersecurity resources in this section were developed in partnership with the National Institute of Standards and Technology, the U.S. Small Business Administration, and the Department of Homeland Security.

<https://www.ftc.gov/tips-advice/business-center/small-businesses/cybersecurity>


Cybersecurity | The U.S. [+](#) [-](#)

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## Cybersecurity

Is your business prepared in the event of a cybersecurity breach? Now is the time to take stock of your cybersecurity health, including the importance of securing information through best cybersecurity practices; identifying your risk and the types of cyberthreats; and learning best practices for guarding against cyberthreats.

### Introduction to Cybersecurity

Small employers often don't consider themselves targets for cyberattacks due to their size or the perception that they don't have anything worth stealing. However, small businesses have valuable...

### Top Ten Cybersecurity Tips

Cybersecurity threats are real and small businesses are often an attractive target. As a small business owner, it's critical to implement the best tools and tactics you can to protect your...

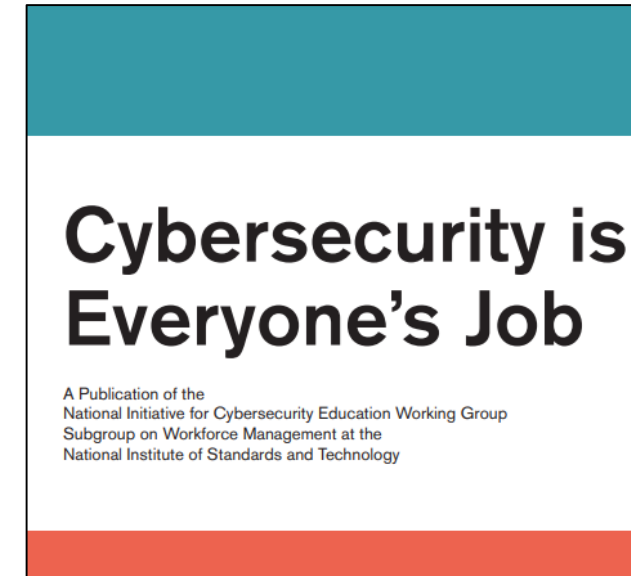
### Protect Against Ransomware

Ransomware is a type of malicious software that infects and restricts access to a computer until a ransom is paid. Although there are other methods of delivery, ransomware is frequently delivered...

<https://www.sba.gov/managing-business/cybersecurity>



<http://www.dhs.gov/stopthinkconnect>



[https://www.nist.gov/sites/default/files/documents/2018/10/15/cybersecurity\\_is\\_everyones\\_job\\_v1.0.pdf](https://www.nist.gov/sites/default/files/documents/2018/10/15/cybersecurity_is_everyones_job_v1.0.pdf)



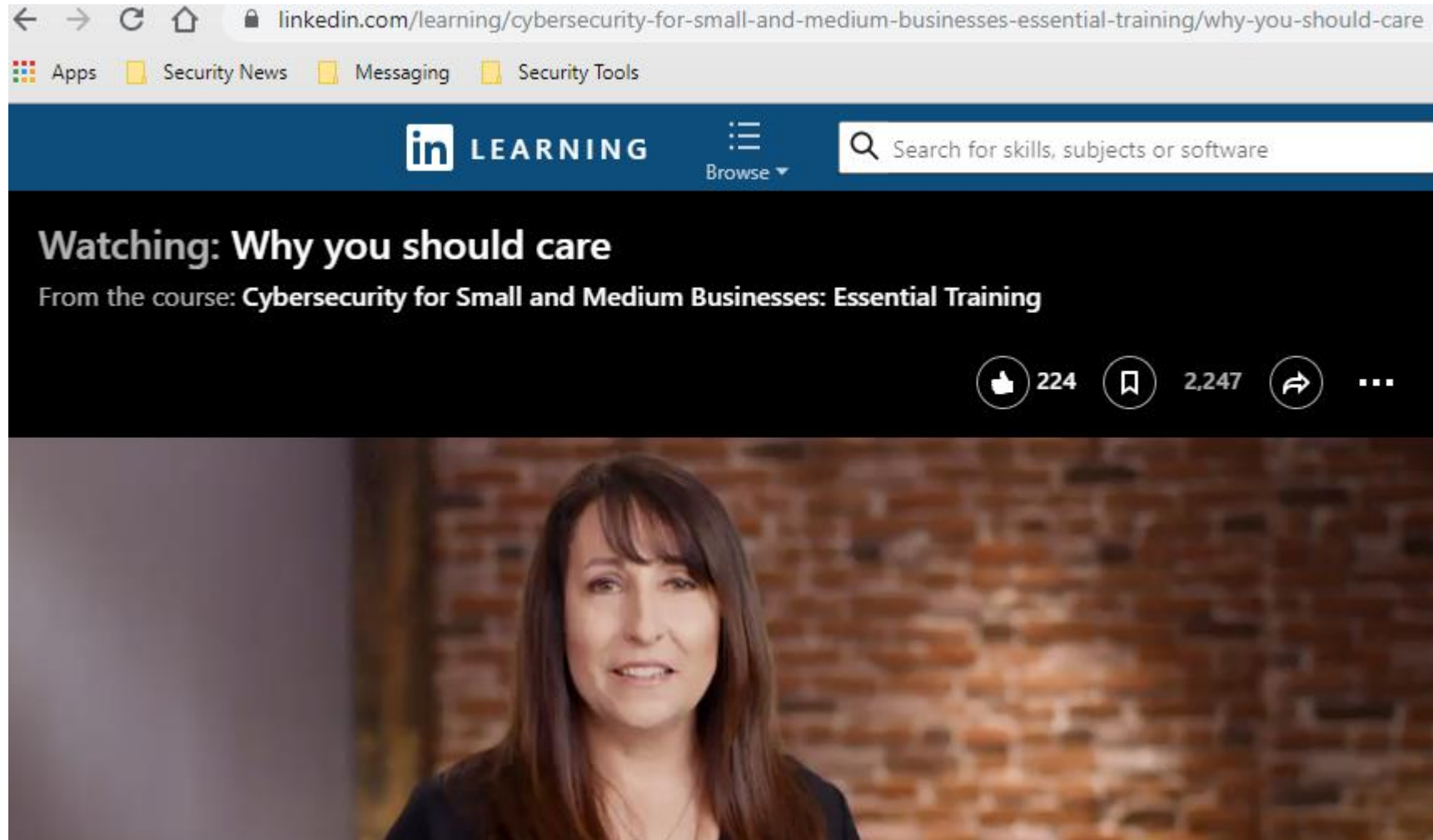
<http://staysafeonline.org/>



<https://www.infragardiowa.org/>



# LinkedIn Learning



<https://www.linkedin.com/learning/cybersecurity-for-small-and-medium-businesses-essential-training/>

# Who owns the Headache?





# Questions???

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# Share & Learn

