FARM CREDIT ILLINOIS

Digital Defenses - Protecting your Information in a Connected World

Wyatt Scheiding, CISSP, CISA

Introduction

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Wyatt Scheiding, VP Information Security
- Working in the Information Security Field since 2002
  - Finance, Healthcare, Telecommunications
- Education & Certifications
  - BS, Cyber Security & Information Assurance
  - Certified Information Security Systems Professional
  - Certified Information Systems Auditor
- Born and raised in central Illinois

Overview

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Defining Cyber Security
- Current Security Trends
- Understanding The Motivation Behind Cyber Attacks
- Placing The Value On Your Information
- Considering Where You May Be Vulnerable
- Applying Basic Cyber Hygiene
- How to Report Cyber Crime

What is Cyber Security Anyway?

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- "Cybersecurity is the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring **confidentiality**, **integrity**, and **availability** of information."
  - Cyber Security & Infrastructure Security Agency

- Confidentiality: Restrict unauthorized disclosure of information to those who do not have the need, or right, to access it.
- Integrity: Prevent unauthorized or improper modification of systems and information.
- Availability: Assure information is available for use when needed

Current Security Trends

- The expansion of **Cloud Services** has increased attack surface
  - Data is no longer located on a single computer or device
  - You may use cloud services such as Gmail, OneDrive, MS365, DropBox, Google Pictures, iCloud, etc
  - Though there are great benefits, there are security concerns to consider
- **Ransomware**:
  - The Cybersecurity and Infrastructure Security Agency reported in February 2022 that it is aware of ransomware incidents against 14 of the 16 U.S. critical infrastructure sectors
  - The FBI's Internet Crime Complaint Center reported 2,084 ransomware complaints from January to July 31, 2021. This represents a 62% year-over-year increase.
- **Phishing**
  - According to APWG's Phishing Activity Trends Report for Q4 2021 phishing attacks hit an all-time high in 2021
- **Internet of Things (IoT)**
  - 84% of security professionals believe IoT devices are more vulnerable than computers (Armis: Of Enterprise IoT Security In North America: Unmanaged And Unsecured)

Attacks Targeting Agriculture

- Examples of attacks targeting agriculture
  - JBS Foods Press Release June 9th 2021 – "JBS USA today confirmed it paid the equivalent of $11 million in ransom in response to the criminal hack against its operations."
  - The agricultural machinery producer AGCO was hit with a ransomware attack on May 5, 2021
  - Threat actors initiated ransomware attacks against six grain cooperatives during last fall's (2021) harvest, followed by two attacks earlier this year (2022), potentially disrupting the supply of seeds and fertilizers, according to the FBI. (Matt Kapko, CyberSecurity Dive June 2022)

What is the Motivation of Bad Actors?

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Common Motivations may be:
  - Financial Gain*
    - Ransomware nets hackers about $1 billion each year while
    - cybercrime-as-a-service can bring in as much as $1.6 billion annually.
      - Trojans,
      - DDoS attacks
      - phishing email campaigns.
  - Recognition Among Peers
  - Hacktivists / Protests
  - State Sanctions Actors

*https://www.techrepublic.com/article/cybercriminals-raking-in-1-5-trillion-every-year/

Misconceptions

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- A common misconception is that cyber-crime only targets large companies or networks
- Another misconception is that devices, when purchased, are secure out of the box
- Most cyber attacks are opportunistic in nature and can occur on any network, large or small
- Prioritizing technical solutions over safe habits. Try not to think about “best product for…” No product is perfect, and any product is better than no product

Your Information is Valuable

Credit/Debit Card Information
- Make purchases
- Withdraw funds

Protected Health Information
- Receive prescriptions
- Buy medical devices for re-sale
- Submit fraudulent claims to your insurance

Personally Identifiable Information
- Open a new credit card or loan
- Open new utility accounts in your name
- Obtain a mobile phone
- Open a bank account and write bad checks
- Obtain new driver's license or ID
- Use your information in the event of arrest

Tax Information
- File fraudulent tax returns

Bank Account Information
- False bills
- Money Transfers

Where is Your Data?

- Data is everywhere but consider what you can control and apply basic security practices for each:
  - Personal computers
  - Mobile devices
  - Home networks
  - Account credentials (Email, Social Media, Cloud Services)
  - Physical documents / mail

A Focus On Passwords

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Strong Passwords
  - Do not create passwords based on personal information (Please answer this Facebook Survey)
  - Use the longest phrase possible (8 characters minimum)
  - Do not use dictionary readable words
- Do not use the same passwords
  - Use a password manager
  - **P**lease **d**o **n**ot **u**se **t**he **s**ame **p**assword **a**cross **a**ll **a**pplications. (PdnUT3p@Aa)
- Do not save passwords in plain text
- Do not let your browser remember your passwords
- Use Multifactor Authentication (MFA) wherever possible
  - Use authenticator apps vs. text messaging where possible

SECURITY TIP (ST04-002) Choosing and Protecting Passwords - Cybersecurity & Infrastructure Security Agency

Personal Computers

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Why are computers valuable to bad actors? (krebsonsecurity.com)
  - Malicious Web Server (Malware, Warez, Spam, Adult)
  - Malicious Email Server (Spam, Scams, Harvest Email Contacts)
  - Malicious Bot (DDoS, Anonymization Proxy. CryptoMiners)
  - Key Logging / Account Takeovers
  - Hostage Attacks (Fake AV, Ransomware, Email Account Ransome, Webcam Exploitation)
  - Data Exfiltration (Your Information is Valuable!!)
- Attack Vector
  - Phishing Emails
  - Malicious Websites
  - Infected Software
  - Exposed Network
  - Remote Connections
  - Infected USB Devices
  - Theft

Mitigations
- Run up-to-date operating system
- Patch OS and all software (auto-update)
- Install only trusted software
- Safe web browsing / email use
  - Consider Personal VPN especially when traveling
- Run up to date antivirus/malware
- Use a firewall
- Strong Passwords
- Remove Unneeded Software
- Use caution when using public WiFi
- BACKUP YOUR DATA
- Notify Your Financial Institutions

Mobile Devices

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Why are mobile valuable to bad actors?
  - Key Logging / Account Takeovers
  - Access Corporate Accounts
  - MFA Exploitation (New Account Setups)
  - Data Exfiltration (Pictures, files, notes)
  - Learn your movement through GeoLocation
- Attack Vector
  - Excessive App Permissions
  - Phishing Emails
  - Malicious Websites
  - Infected Apps
  - Exposed Network
  - Theft

Mitigations
- Run up-to-date iOS/Adroid
- Install only from AppStore
- Do not Jailbreak
- Safe web browsing / email use
- Run up to date antivirus/malware if possible
- Recognize unexpected MFA attempts
- Strong Passwords / PIN Codes
- Remove Unneeded Apps
- Only use BlueTooth when needed
- Use caution when using public WiFi
- BACKUP YOUR DATA
- Notify Your Financial Institutions

Email (Web Mail) Accounts

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Why are your email accounts valuable to bad actors?
  - Attachments (Documents and photos)
  - Account Password Resets
  - Contact Harvesting
  - Sending Phish or Spam Emails
  - Ransome / Blackmail
  - Impersonation
- Attack Vector
  - Phishing (Credential Harvesters)
  - Sharing/Sending Account Information
  - Malware (Keyloggers)
  - Shoulder Surfing

Mitigations
- Multifactor Authentication
- Strong Passwords
- Do not share accounts
- Safe Computer/Mobile Phone Habits

Social Media Accounts

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Why does Social Media Pose a Risk?
  - The more information malicious people have about you, the easier it is for them to take advantage of you.
    - Impersonation attacks
    - Predators
    - Distribution of malware / malicious code
    - Physical Location Awareness such as vacations and restaurant check-ins let people know you are not at home

Mitigations
- Protect Your Account
  - Multifactor Authentication
  - Strong Passwords
- Do not share accounts
- Safe Computer/Mobile Phone Habits
- Limit the information you post
- Remember, you cannot retract what you post. The Internet never forgets
- Do not accept friend request unless you know the person in real life
- Be skeptical
- Set your privacy settings appropriately
- Restrict use of social media by children

Keeping Kids Safe Online

FARM CREDIT ILLINOIS
Helping Farm Families Succeed

- Common Concerns
  - Accidental computer damage (physical or software)
  - Installation of unwanted programs or files (Mods…uggh)
  - Accidental spending of linked credit cards
  - Online predators
  - Cyber Bullying

Mitigations
- Be Involved
- Electronic use in central space
- Educate and set rules
- Monitor activity across all devices
- Don’t let kids operate as admin
- Lock all accounts with parental controls, especially for spending
- Restrict use of social media by children

Have I Been Compromised?

Computers
- Reduced Performance
- Modified programs (Browsers)
- Redirected Internet Searches
- Cannot access files
- Friends report social media invites you did not send
- Online account passwords are not working

Mobile Devices
- High Data Usage
- Unexplained Charges
- Severe Battery Drain
- Unrecognized Apps
- Reduced Performance
- Random Pop Ups

Common Mitigations
- Computers / Mobile
  - Clean with Antimalware
  - Take to Professional
  - Reset to Factory Default
  - Change All Passwords
  - Monitor Bank/Credit Card
  - Freeze Credit
- Online Accounts
  - Change passwords where applicable
  - Apply MFA if not in place

Keep Up to Date

Keep up to date on current cyber industry news
- Krebs on Security - https://krebsonsecurity.com/
- Reuters - https://www.reuters.com/technology/

Reporting Cyber Crime

- Local Internet Service Provider
- Local Law Enfoncement
- Local FBI Field Office
  - Typically only handles large-scale events
- The Internet Crime Complaint Center (IC3) takes internet-related criminal complaints. After receiving a complaint, IC3 sends it to federal, state, local, or international law enforcement. In addition to filing an IC3 complaint, contact your credit card company. Let them know about unauthorized charges or if you think a scammer stole your credit card number.
  - https://www.ic3.gov/Home/FileComplaint
- The Federal Trade Commission (FTC) shares consumer complaints and online scams with all levels of law enforcement. While the FTC can't resolve individual complaints, it can tell you the next steps to take.
  - https://reportfraud.ftc.gov/#/assistant

Thank You & Q/A

Good security is not a product – it is a practice

Questions?