Literature Lesson

- Modern IT
  - Data, data, everywhere!

Water, water, every where,
And all the boards did shrink;
Water, water, every where,
Nor any drop to drink.
Data Breaches

World's Biggest Data Breaches & Hacks
Select losses greater than 30,000 records
(Updated 1st Feb 2023)

- Sources: IdTheftCentre, DataBreaches.net
delivering the promise of science for global good

RTI International is an independent, nonprofit research institute dedicated to improving the human condition.
What We Do

Practice Areas

Multidisciplinary expertise and research insights our clients need to inform policy, practice, and programs

Services and Capabilities

Rigorous methods, innovative technology R&D, and science-based solutions our clients can trust

Health
- Education and workforce development
- International development
- Energy research
- Environmental sciences
- Social and justice policy
- Food security and agriculture
- Innovation ecosystems

Surveys and data collection
- Statistics and data science
- Evaluation, assessment, and analysis
- Program design and implementation
- Research technologies
- Drug discovery and development
- Analytical laboratory science
- Engineering and technology R&D
Diverse data sources
And a lot of data
21TB associated with 1 project alone (CMS)
Network Topology & Challenge

- Data collection systems per SSPs

- Challenge
  - Evolving work force
    - Desks
    - Collaboration space
    - Travel (hotel, conf, etc.)
  - Mobile Device Proliferation
    - Tablets
    - Phones
    - Chromebooks

- Risks
  - Lost/stolen devices
  - Malware
  - Data loss
Solutions

- Network Access Control (NAC)
  - Wired
  - Wireless
- Remote Access Solutions
  - Mobile Device Management
  - Virtualization
  - Containerization
- Data Controls
  - Data Loss Prevention
  - Data Exfiltration Controls

- Who is allowed on the network
- How they are allowed to access the network
- What are they allowed to do on it
Network Access Control (NAC)

- **Wired**
  - Company Owned Devices with Security Posture

- **Wireless**
  - Corporate Network
    - Company Owned Devices with Security Posture
  - Guest Network
    - Person Devices
    - Visitor Devices
  - Research Network
    - R&D equipment

- **End User Impact**
  - Not much
  - Security Posture maintained by IT
    - Certificates, credentials, patching, antivirus
Remote Access - Mobile

- Enterprise Mobility Management
  - Device, app, content, information

- Implementation
  - Managed applications
  - Data Loss Prevention
    - Copy/Paste
    - Local Storage
    - Erase Capability

- End User Impact
  - Download apps from app store
  - Authenticate against our backbone
Remote Access – Virtual Desktops

- **Advantages**
  - Virtual company device (same security posture)
  - Runs on various personal devices
  - Easy to spin up
  - Retained session across devices
  - No access if hardware stolen

- **End User Impact**
  - Download appropriate client
  - Use company’s 2FA authentication
Remote Access - Containerization

Establish portals for accessing company resources
- Data collection applications
- Email
- Time keeping
- Training courses
- Virtual desktop environments
- RDP to desktops

End User Impact
- Browser based
- Company 2FA
What’s Next?

- Done? Never!
- Additional security
  - Administrative access on endpoints
  - Cloud tools
- New paradigms
  - Data devaluation
    - Make data valuable only at the point of use
  - Effective implementation of existing tools
  - True Education
Summary

- Remember the Mariner….don’t be careless
  - *Pass, like night, from land to land;*  
    *with strange power of speech;*  
    *That moment that his face I see,*  
    *the man that must hear me:*  
    *To him my tale I teach.*

- Embrace the challenge of data protection
- Find ways to support modern workflows without compromising security

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