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ARGOS RADAR

FOUNDATIONAL CYBERSECURITY

WITHOUT BREAKING YOUR BUDGET

STARTING AT LEVEL 1

- Do NOT plan to do everything at once
- You will need cooperation from other teams
  - Form a committee
- Set deadlines
  - These are VERY easy to procrastinate
- Start reporting to management from level 0
  - You will be able to show progress immediately

INVENTORY AND CONTROL OF ASSETS

- **You have to know what you have in order to protect it**
- Manual - Not fun but it's a start
- Automation is key
- 802.1x
- Have a plan for unknown devices
- Solution:
  - PacketFence
    - Opensource NAC
  - Spiceworks IP Scanner
  - PRTG Network Monitor
    - Free for less than 100 sensors
  - Windows DHCP Logging

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INVENTORY AND CONTROL OF SOFTWARE ASSETS

- **Know what software is installed on all machines**
- Application whitelisting
  - Control what is allowed to run
- Solutions:
  - Applocker
  - Spiceworks
    - Can scan for software
  - ManageEngine / PDQ / ThreatLocker
    - Can scan for and update software (base OS and 3rd party)
    - More expensive than the previous two

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SECURE CONFIGURATION OF ENTERPRISE ASSETS AND SOFTWARE

- **Create a golden config/template for the OS and apps**
- Solutions:
  - Hardening Guides
    - CIS, NSA IAD, DISA STIGs
  - Microsoft Security Compliance Toolkit
    - Policy Analyzer is helpful

MALWARE DEFENSES AND MONITORING

- **GET AN EDR!**
  - Detection and Response
  - Machine Learning
  - https://attackevals.mitre-engenuity.org/enterprise
- Don’t forget Network monitoring
  - Security Onion
  - RITA
  - ADHD
  - Ntopng

LOGGING

- **3 Essentials - Log, Monitor, Audit.**
- Sysmon
  - Swiftonsecurity's configuration
- https://what2log.com/
- Logging for AD
  - GPO for audit settings
- Syslog for linux servers
  - Auditd, Kiwi
  - Learn the logging levels and facility codes
- Centralized Storage
  - ElasticStack

What2Log

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PATCHING!

- **You've heard. Do it.**
- Create an AUTOMATED method to regularly patch your systems
- Solutions:
  - WSUS
    - Windows only
  - Linux
    - Cron job to check the repos
  - Automation
    - Puppet, Ansible, ManageEngine

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OS PROTECTION FEATURES

- **Ground-up security starts at the operating system!**
- AppArmor/SELinux
  - Access control and policies for Linux machines
- Windows AMSI
  - Sits on an API layer
- Bitlocker
  - Encrypts the hard drive in the machine
  - Relies on TPM chips in the computer
  - Can store the keys in AD

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MS 365 SUITE

- **And now for some good news!**
- Microsoft 365 has features to address your foundational security.
- Includes:
- InTune/AutoPilot
- Azure Information Protection
  - Being deprecated
- Windows Defender for Business

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CONFIGURATION ITEMS TO START WITH (ENDPOINT)

- Implement MFA
- Remove local admin rights from users
  - LUA Buglight to work with programs that ‘require’ admin access
- Limit USB access (Group Policy)
  - Autoplay is not your friend
- Enable LAPS
  - Passwords are stored in AD
  - Can also use PowerShell scripts
  - Even for servers

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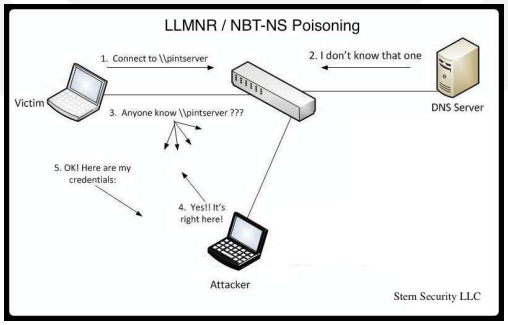
CONFIGURATION ITEMS TO START WITH (DOMAIN)

- **Audit your service accounts!**
- LLMNR
  - Turn it off. Why do the hackers work for them?
- MDNS
  - Used by Chromecast/Bonjour/etc
  - Use a firewall rule to block 5353/udp on host machines
- NETBIOS
  - A legacy protocol that should have died long ago
- WPAD
  - For proxy configurations



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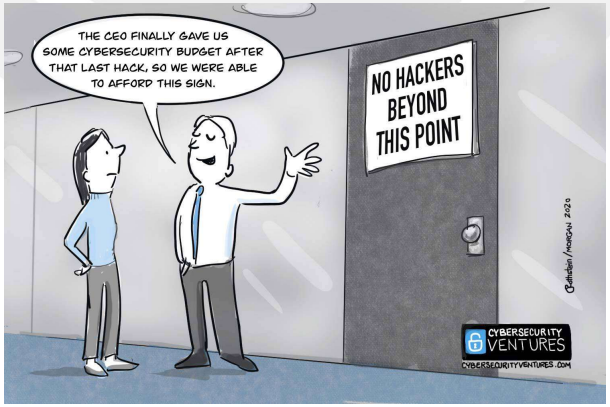
CONFIGURATION ITEMS TO START WITH (SERVICES)

- Use the latest version of SMB, NTLM
- Enable SMB signing
- Use Kerberos instead of NTLM if possible
  - Legacy apps may get in the way here
- Shut down FTP, etc. on printers if not needed
- Use SFTP, SCP, and other SSH related protocols if possible
- Turn off unnecessary services (print spooler, for example)

SO YOU THINK YOU'RE SECURE?

- **Test that theory, Buckwheat!**
- Bloodhound
  - Searches for lateral movement paths
- Purple Knight
  - AD Domain
- Atomic red team
  - A lot of attacks packaged into one program
  - Choose your own adventure
    - Focus on one at a time
- JPCert
  - Lists IOCs for common tools (like above)



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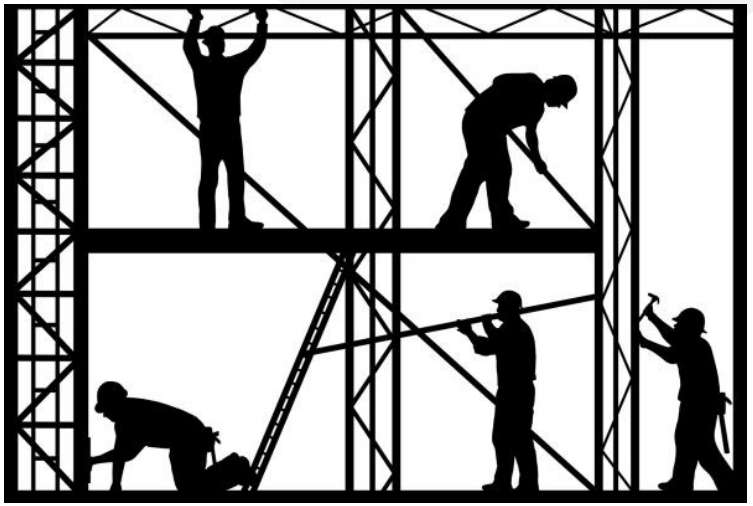
GENERALLY GOOD TOOLS

- Active Countermeasures Suite
  - https://www.activecountermeasures.com/
- DeepBlueCLI
- Wireshark
- Log parsers (Linux/Windows/Mac/etc.)
- Learn PowerShell

WHY USE A MODEL?

- **Using a framework is easier than starting from scratch**
- Ensures you have a methodology
- Helps prioritize tasks
- ACSC
- CIS 18
- NIST CSF



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ACSC

- **Australian Cyber Security Centre**
- Essential 8
  - Split into maturity levels
- Easy place to start
- Has a section for MS Office

ACSC Australian Cyber Security Centre

- https://www.cyber.gov.au/acsc/view-all-content/publications/essential-eight-maturity-model

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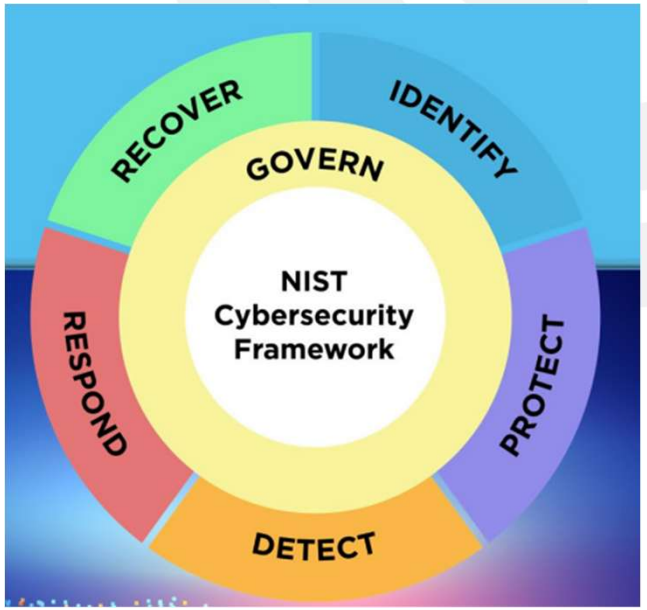
CIS 18

- **Center for Internet Security**
- 18 main controls
  - Split into implementation groups
- Stick with IG 1 when starting

- https://www.cisecurity.org/controls/cis-controls-list

NIST CSF 2.0

- **NIST Cybersecurity Framework**
- 6 main controls
- Govern
- Identify
- Protect
- Detect
- Respond
- Recover



- https://nvlpubs.nist.gov/nistpubs/CSWP/NIST.CSWP.29.pdf

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COMMON THEMES

- Take care of the low hanging fruit first!
- Patching
- Restrict administrator privileges
- Asset management
- Identity management
- Application control/hardening
- Backups
- **Rinse. Repeat. Security never sleeps!**

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TECHNOLOGY SEMINAR SERIES

- November 12-13
  - Offense for Defense
- Hands-on labs for 2 days
- http://ninestarconnect.com/techseminar

TECHNOLOGY SEMINAR SERIES

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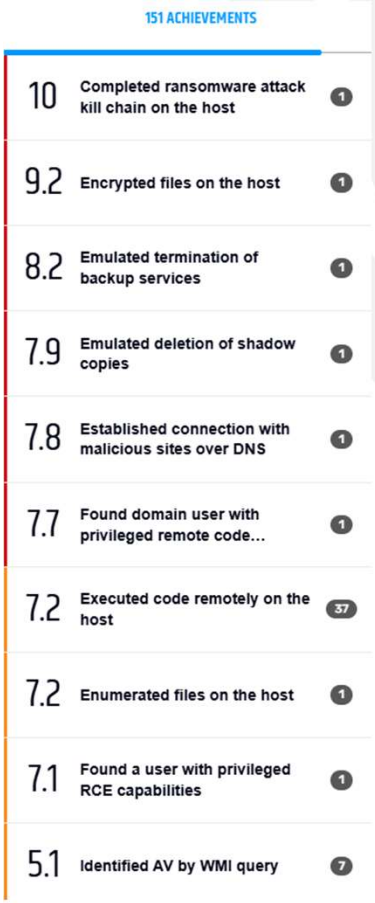
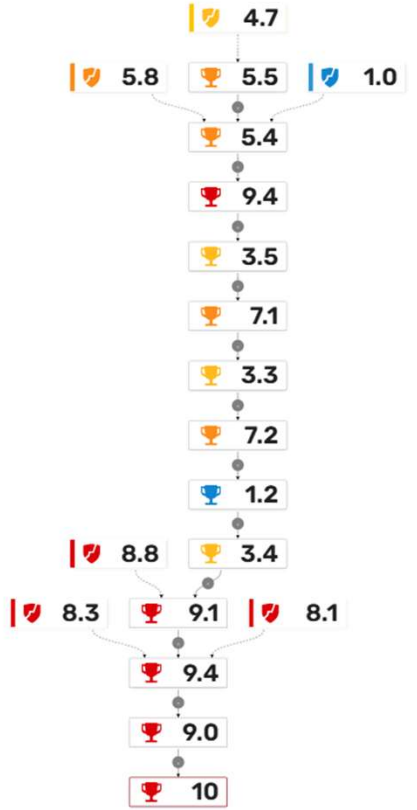
ARGOS RADAR SOLUTIONS

- Penetration Testing
- Secure Configuration Assistance
- Cloud SIEM Solutions
- Tactical Tabletop Exercises
- Employee Training





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QUESTIONS?

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