The Ultimate Windows 10 Hardening Guide:

What to Do to Make Hackers Pick Someone Else

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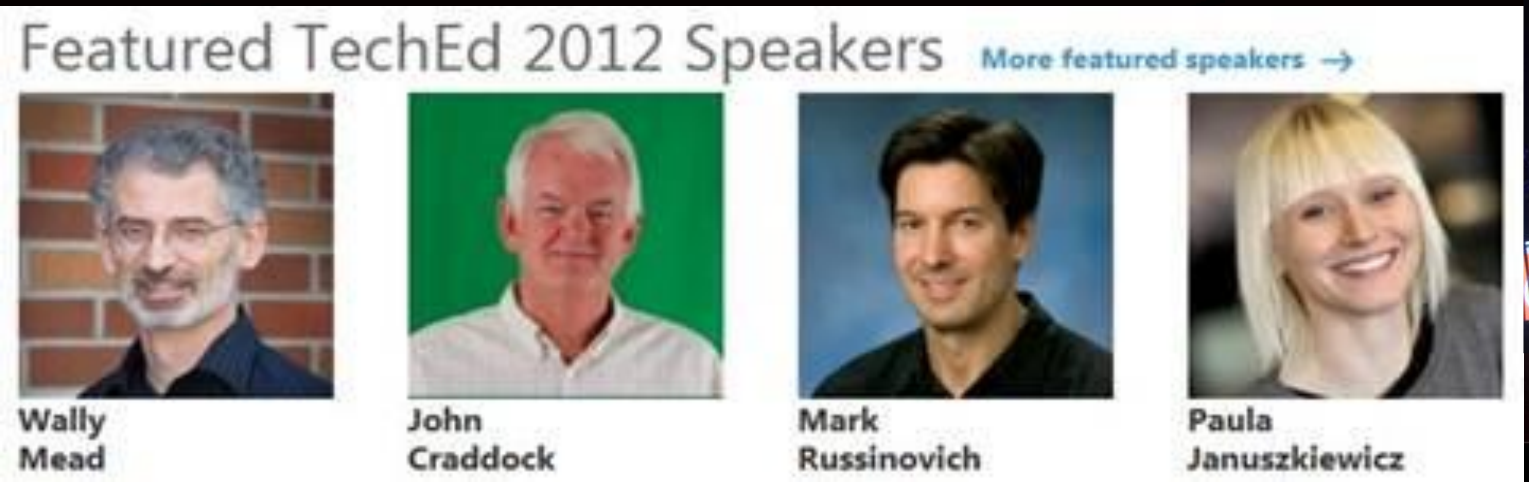
addskills

CORNERSTONE

The Windows 10 Tour

#win10tour



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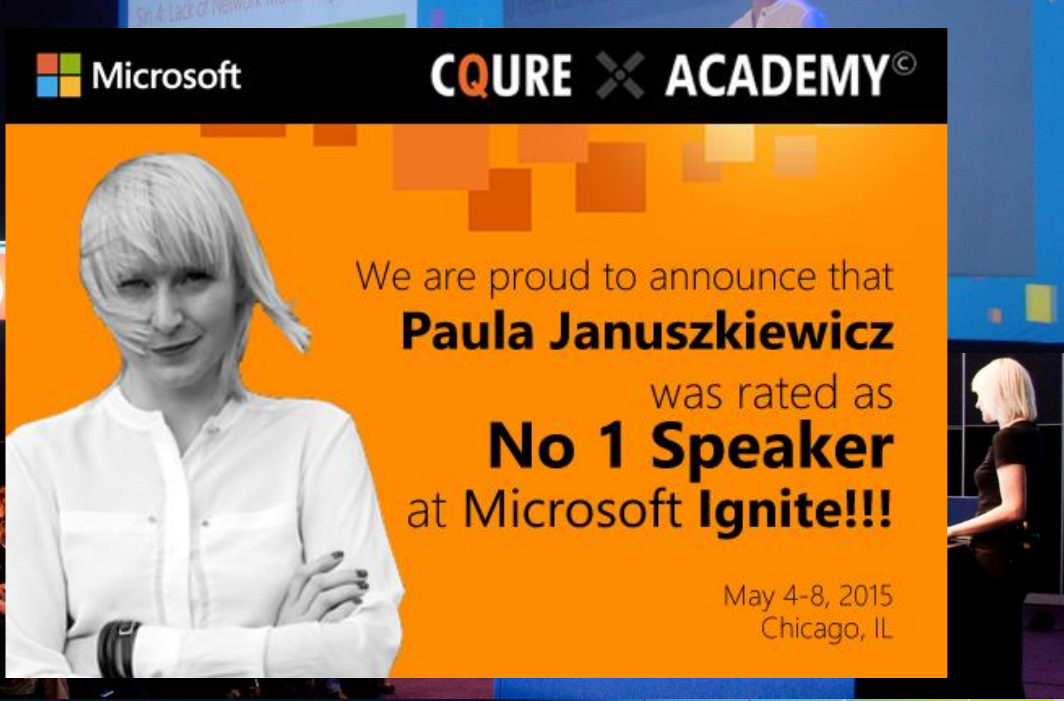

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We are proud to announce that **Paula Januszkiewicz** was rated as **No 1 Speaker** at Microsoft **Ignite!!!**

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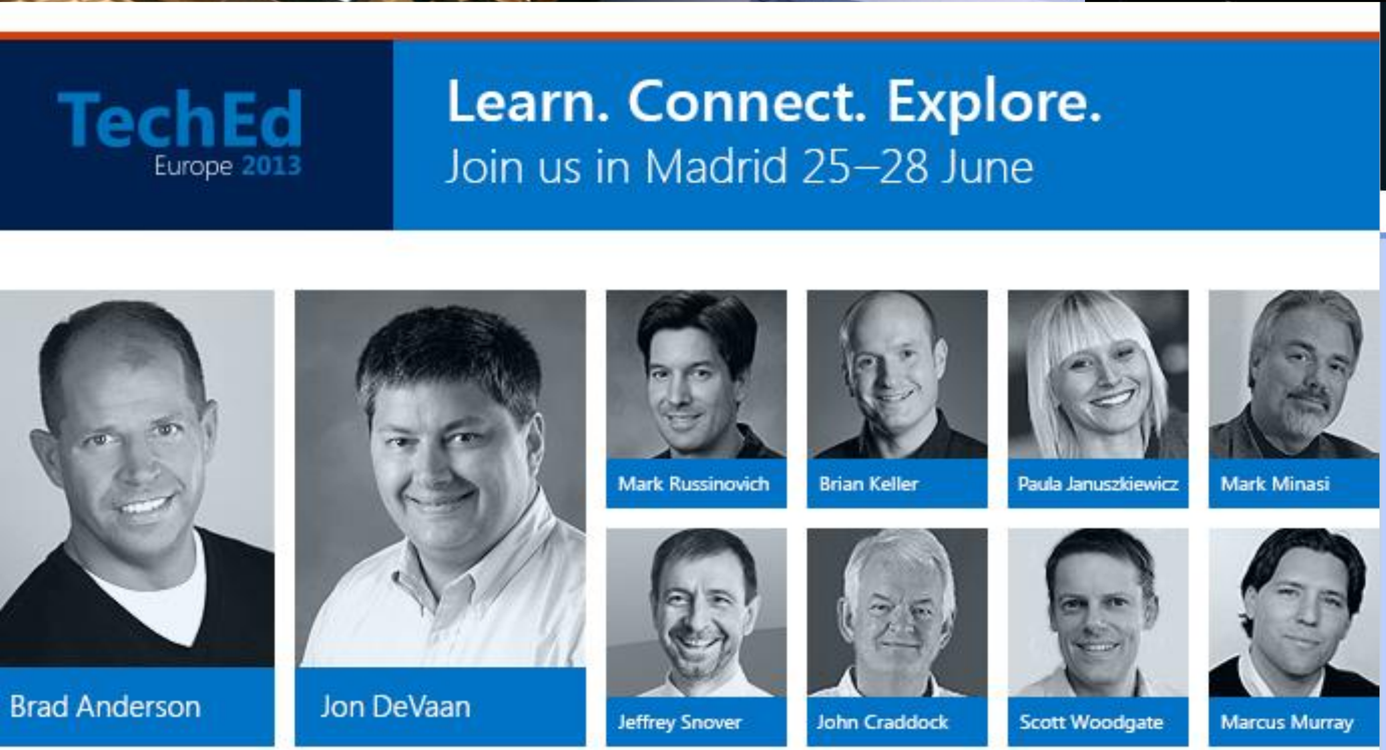

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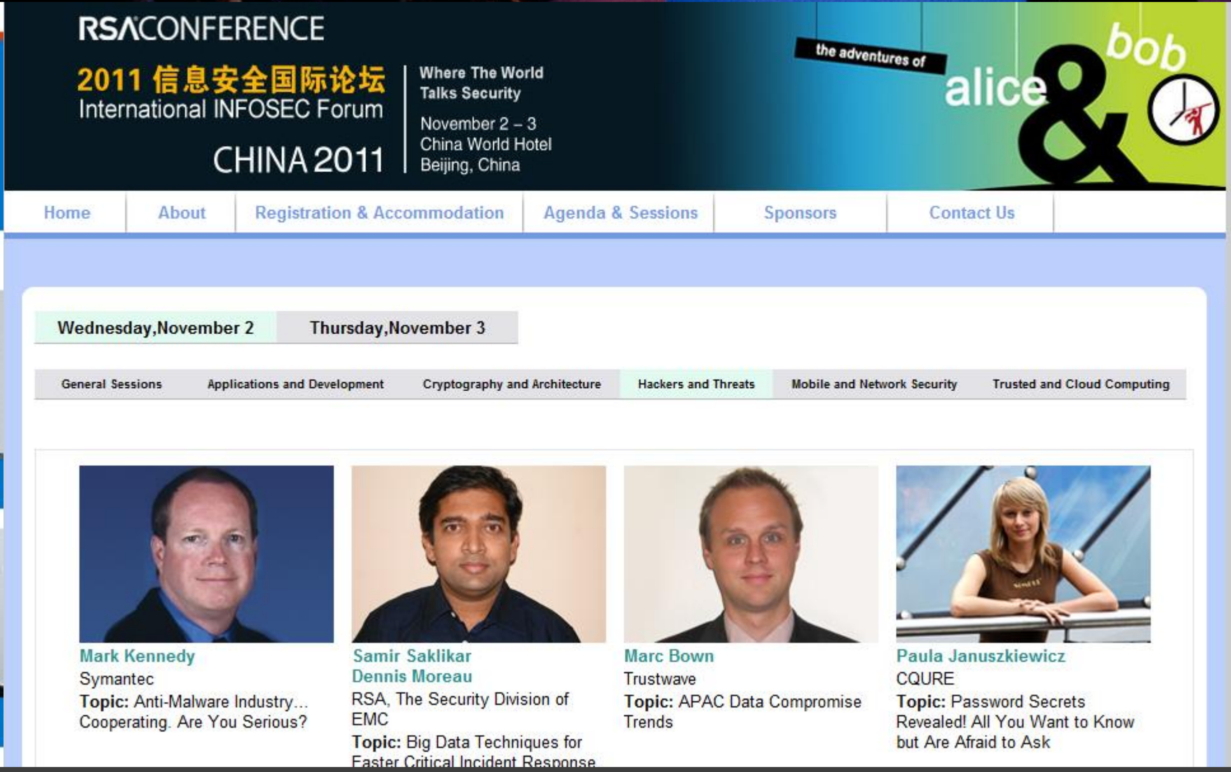

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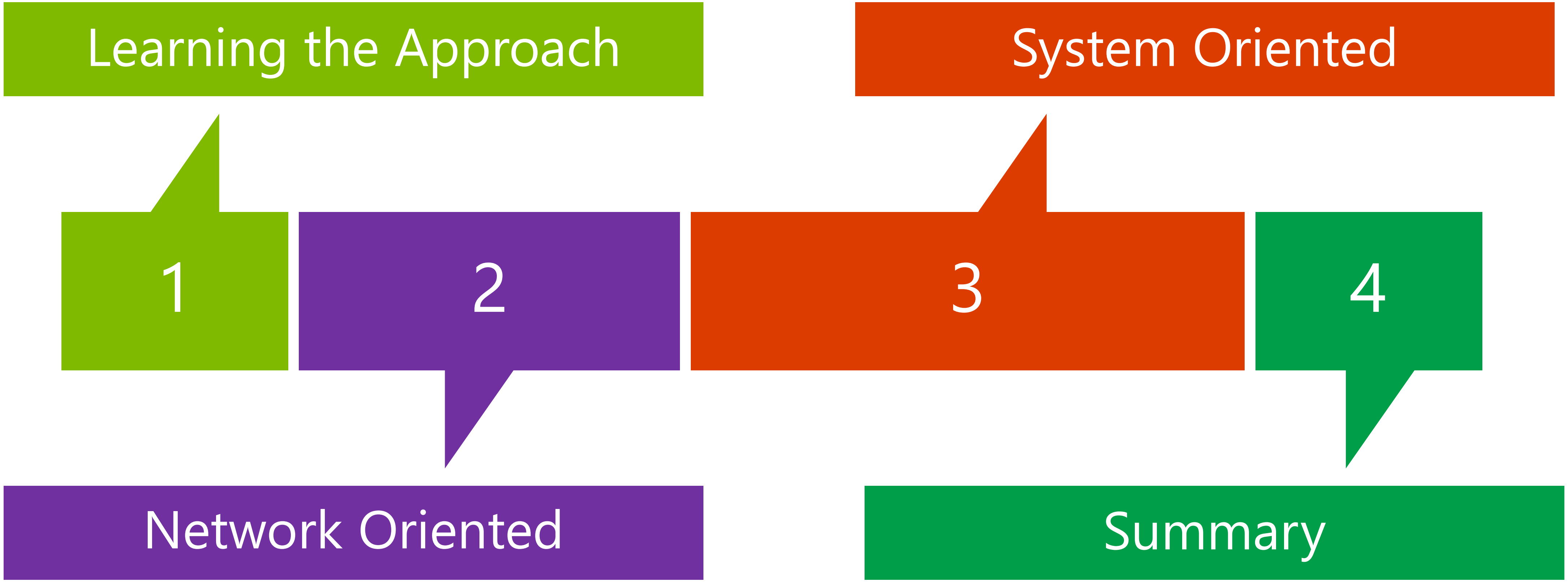
Symantec	RSA, The Security Division of EMC	Trustwave	CQURE
Topic: Anti-Malware Industry... Cooperating. Are You Serious?	**Topic:** Big Data Techniques for Faster Critical Incident Response	**Topic:** APAC Data Compromise Trends	**Topic:** Password Secrets Revealed! All You Want to Know but Are Afraid to Ask

Agenda



1 Learning the Approach

2 Network Oriented

3 System Oriented

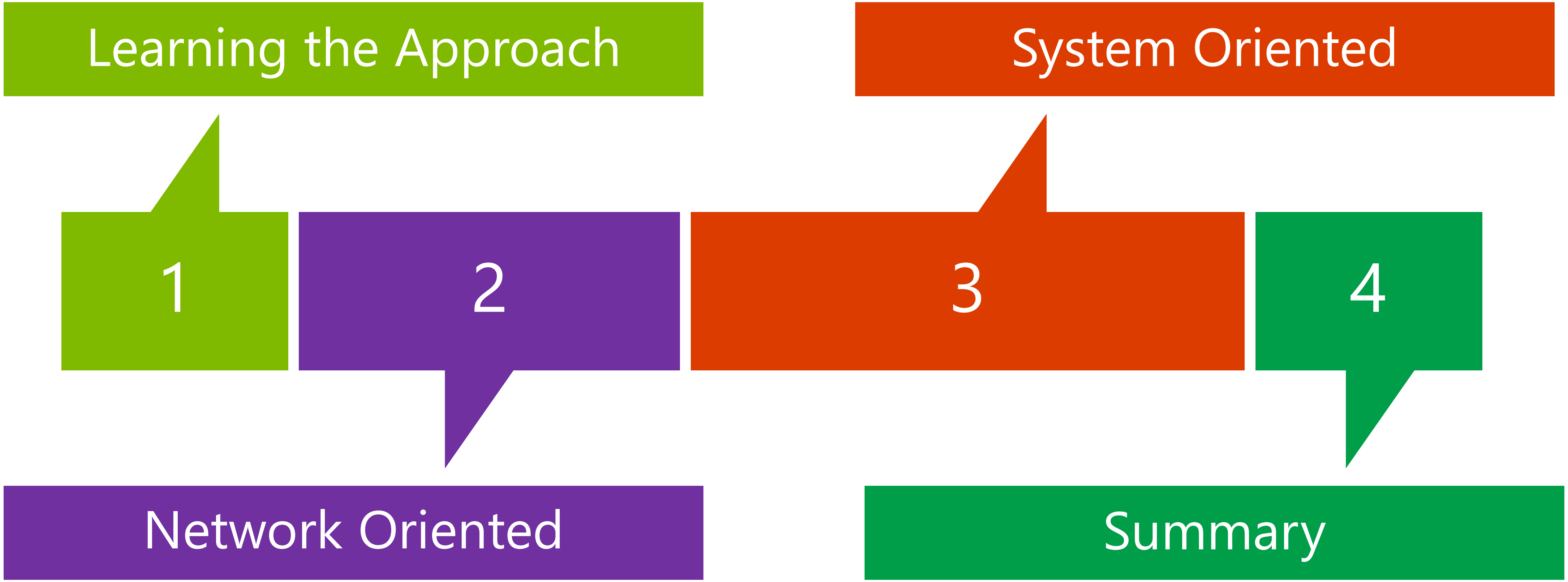
4 Summary

Tools!

- Check out the following links:
  - Our tools: **http://cqure.pl → Tools**
- Knowledge:
  - http://channel9.msdn.com/Shows/Defrag-Tools

http://www.taggarts.co.uk/hyundai/news/i30-at-knowsley-safari-park

Agenda



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Step 1: Monitor DNS Queries

- DNS role in security:
  - 'Who has DNS has power'
  - DNS Spoofing is easy (WPAD etc.)
  - DNS is a text based protocol

- Monitoring and securing DNS strategy:
  - PTR communication is pretty rare and it depends on the owner of IP
  - Correlate queries and responses
  - DNSSEC is an option

For example: What if RevDNS of Hackers.cn IP says it is Microsoft.com? Nothing if we remember that **our DNS** has resolved the hackers.cn name!

DNS to Rely On

The *DNS protocol perspective*

Step 2. Sanitize Network Data

Shellshock

Nothing but an inappropriate data sanitization

Data sanitization – know who processes data

Black list approach: deny eg. <script>, --, ;, ../

White list approach: define what you accept

Regular expressions

Examples:

SQL Injection, Directory Traversal, escape sequences , XSS

As simple as this: verify data **before** processing…

Shell is shocked

The *operating system perspective*

Step 3: Actively Monitor Your Servers

Applocker and Sysmon are great combo

Applocker blocks unwanted software

Sysmon will inform you when someone starts a process or connection or changes the file date

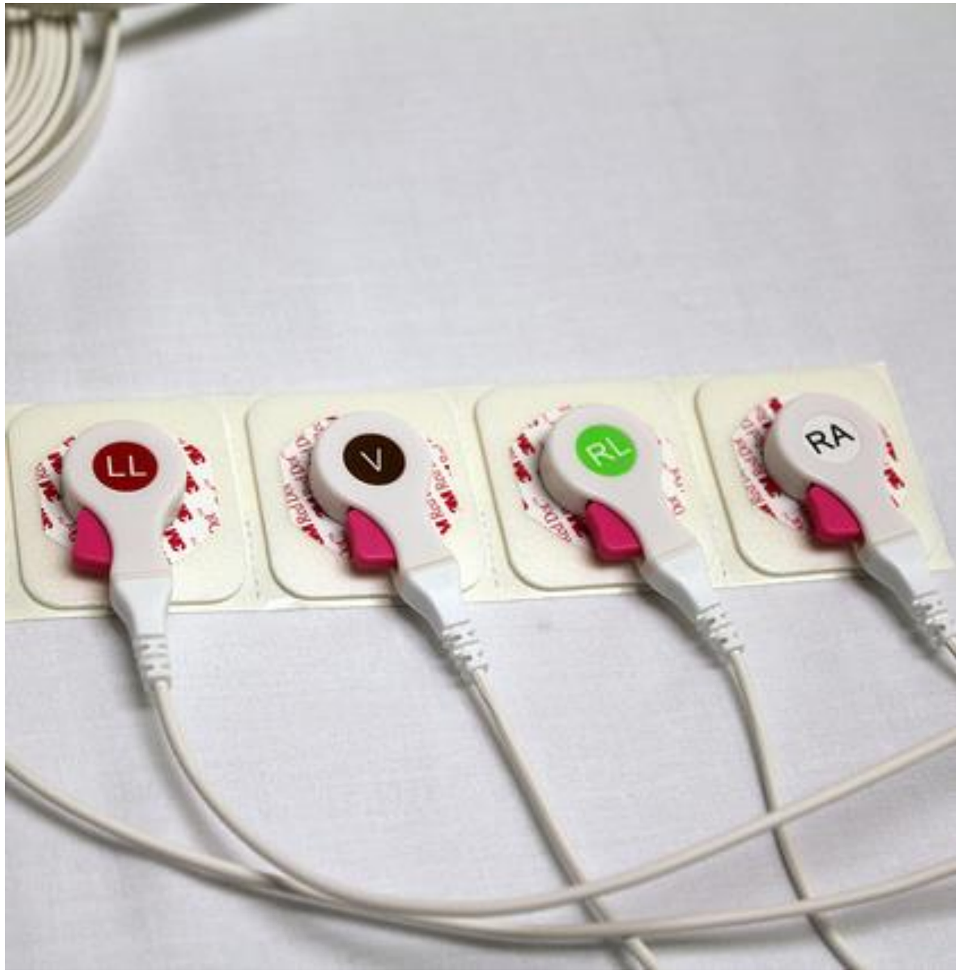
How to discover malicious software when Applocker cannot be enabled?

System logs (Process creation details)

Sysmon enhances built in functionalities

Sysmon stores a hash base

It can be used for malware or unwanted activity discovery



Sysmon Demonstration

The *administrator's perspective*

Step 4: Web Server Check

Naturally unpleasant environment

- Patch and upgrade the Web server application
- Remove/disable unnecessary services, apps, and sample content
- Install Web content on a dedicated hard drive or logical partition
- Limit uploads to filesystem and disable directory browsing
- Define a single directory for all external scripts or programs executed as part of Web content
- Disable the use of hard or symbolic links
- Use service accounts with strictly defined privileges
- Define a complete Web content access matrix that identifies which folders and files are restricted and which are accessible by whom
- Use host-based IDS/IPS and/or file integrity checkers
- Protect backend server (e.g., database server) from command injection attacks at both the Web server and the backend server

How much web could a web-check check?

The *web perspective*

Step 5: Centralize your logs

- It’s quite obvious that losing logs after attack is not in our dreams
  - Logs for critical systems should be stored outside the server
- Log centralization
  - Can help us to correlate different logs and events
  - Helps to maintain the legal proof after attack
- Available solutions
  - Operating system built in: subscriptions, scripts
  - Other products: SCOM, Splunk, SolarWinds, WhatsUpGold, TripWire & other (see: Gartner)

Search for: ‘Top 47 Log Management Tools’

Sysmon Demonstration

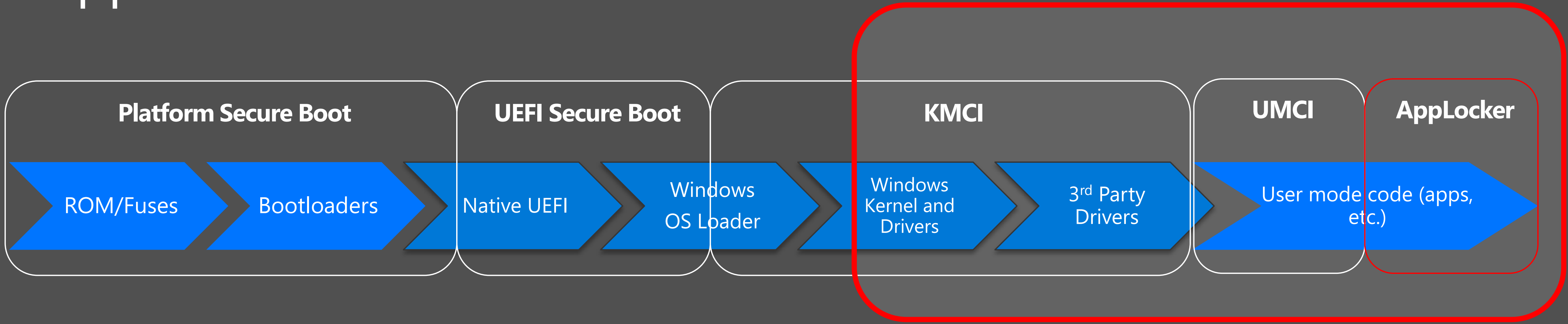
The *bad guys perspective*

Step 6A: EMET - Protection From Injection

- **Enhanced Mitigation Experience Toolkit**
- Helps prevent vulnerabilities in software from being successfully exploited
- Protection mechanisms:
  - Data Execution Prevention (DEP)
  - Structured Exception Handler Overwrite Protection (SEHOP)
  - Address Space Layout Randomization (ASLR)
  - Certificate Trust (Pinning)

Step6B: Code Integrity

- Secure Boot
  - Includes Secure Firmware Updates and Platform Secure Boot
- Kernel Mode Code Integrity (KMCI)
- User Mode Code Integrity (UMCI)
- AppLocker



Code.Stopper

The *workstation* perspective

Step 7: Malicious File Review

- Security awareness: Ideally users should recognize malicious .exe, .docx, .pdf etc.
- Malicious files are not digitally signed, but many files are not…

- PDF File is comprised of header, objects, cross-reference table (to locate objects), and trailer
  - "/OpenAction" and "/AA" defines the script or action to run automatically
  - "/Names", "/AcroForm", "/Action" can also specify and launch scripts or actions
  - "/JavaScript" specifies JavaScript to run
  - "/GoTo*" changes the view to a destination within the PDF or in another PDF file
  - "/Launch" launches a program or opens a document
  - "/URI" accesses a resource by its URL
  - "/RichMedia" can be used to embed Flash in PDF
  - "/ObjStm" can hide objects inside an Object Stream

- DOCX, DOC – Macro Extracting Techniques

*P*erfectly *D*esigned *F*ile?

- The *file* perspective

Step 8: Data Caching

- Idea is simple: no caching
  - Hashes, Passwords from browsers and applications
  - Temporary files, RDP cache
  - Search, browsing history
- Pay attention to the edge servers
- Settings in policies
  - Profile and folder redirection
  - Set cached logon policy

Cache the hash

The *good practice* perspective

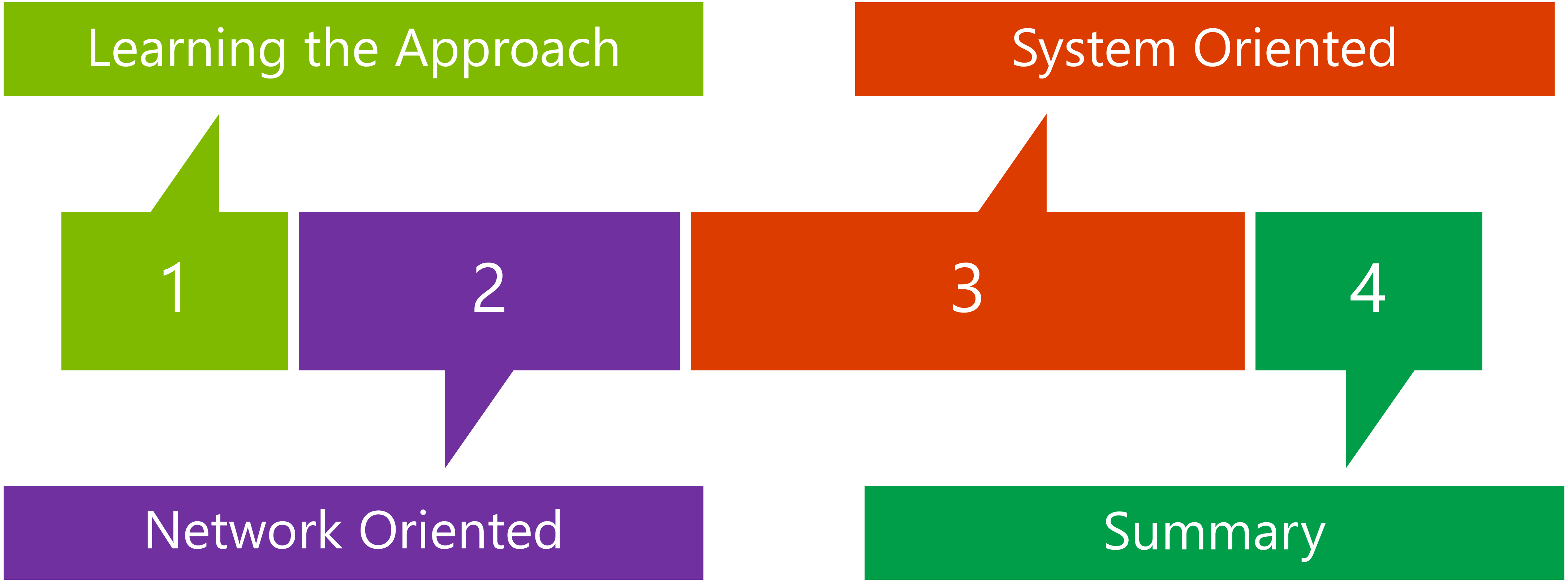
Step 9: Use Host-Based Firewall

- For a detailed traffic control
- For internal network protection
- For logging purposes
- For application-based control
  - Edge firewall does not provide that function
- For protection of travelling users

It… is not obvious. It isn't..

The *remote connection* perspective

Agenda



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Summary

- Act proactively: Applocker, EMET
- Isolate infrastructure components so that in case of attack they prevent spreading
- Review servers' and workstations' configuration periodically
- Implement log centralization solution
- Implement security awareness campaign

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