MSS Lunch & Learn Series

YALE-MSS-6: Patching

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What are the MSS?

- The Minimum Security Standards (MSS) are baseline requirements for securing Yale IT Systems based on risk.
- The MSS apply to any Yale IT System that uses Yale data and/or operates in support of Yale's Mission

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Understanding the MSS

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The MSS are broken down into:

- Standard Groups (YALE-MSS-X): These group standards together based on cybersecurity requirements.
- Standards (YALE-MSS-X.Y): Standards tell us we must do to meet that cybersecurity requirement at Yale.
- Controls (YALE-MSS-X.Y.Z): Controls provide details on how you can meet the cybersecurity requirement.

YALE-MSS-1:
System Classification

YALE-MSS-1.1:
Classify the IT System and meet the Minimum Security Standards

YALE-MSS-1.1.2:
Determine your system type

What MSS will we review today?

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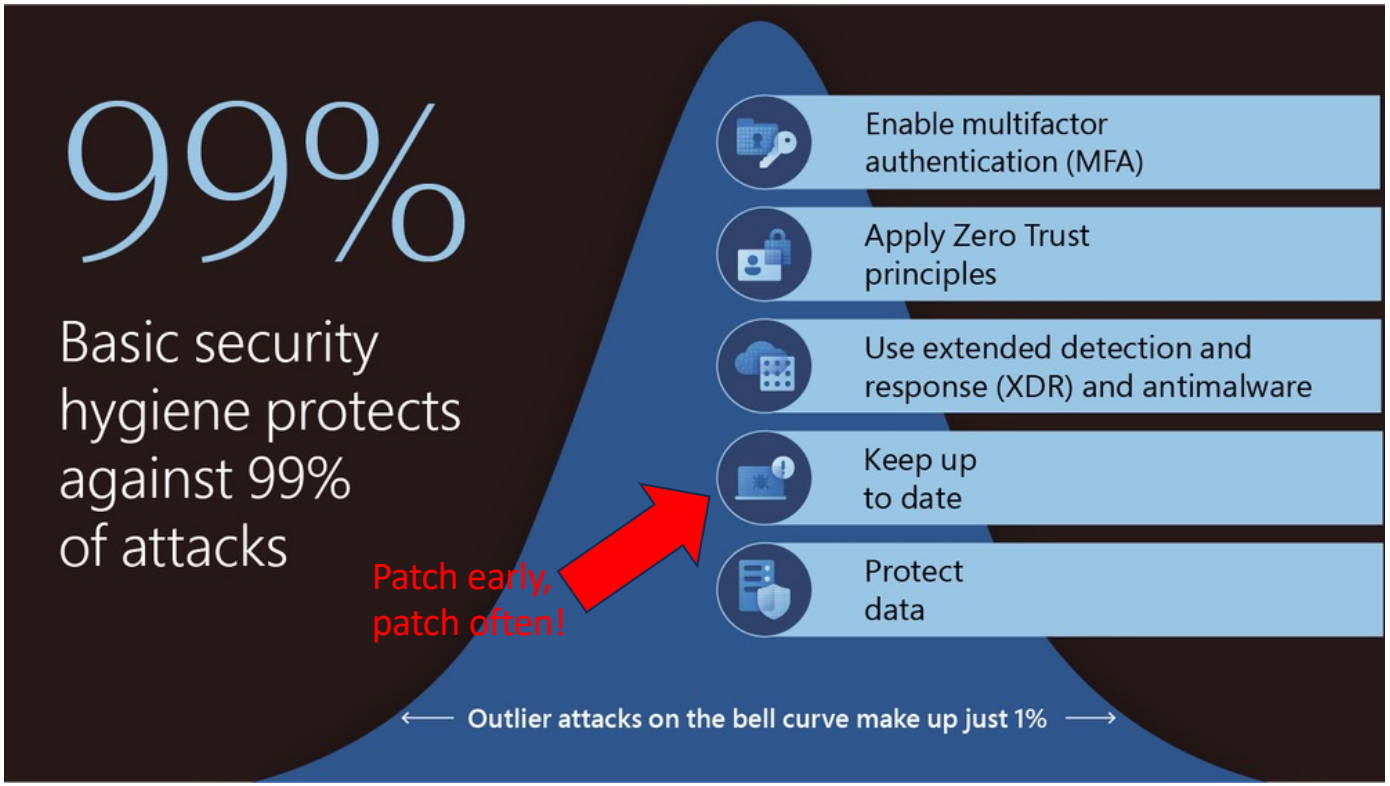
Microsoft Digital Defense Report 2023



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Yale MSS 6.1: Apply security patches regularly

- "Timely patching is critical…" (Patch early, patch often!)
- Apply security patches every 30 days—vendors, too
  - What does this get us? **Helps with TTE**
  - Time-to-Exploit (TTE): average time for a threat actor to exploit a vulnerability
    - One study (by Mandiant) puts TTE at about 32 days in 2022
    - Another study (by Rapid7) puts TTE at 7 days for known vulnerabilities in 2022
- Docker containers: update and re-execute images
- Emergency patches may need to be applied in less than 30 days (more to come…)

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Yale MSS 6.1.1: Apply all security patches to operating systems, software, and firmware based on risk

- Critical-severity vulnerabilities (CVSS score 9+) **must be patched immediately**
- Recipe: it's an emergency if you answer 'yes' to any three of the following…
  - Is system high-risk? (Risk Classification Guideline)
  - Is the vulnerability's severity (CVSS score) 7 or higher? (National Vulnerability Database)
  - Is system Internet Accessible? (MSS Key)
  - Is there an active exploit? (National Vulnerability Database, KEV, et al.)
- Otherwise, patch per normal: within 30 days

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Yale MSS 6.1.2: Identify maintenance windows for necessary upgrades/patches

- Window should be every 30 days
- The 'when' is up to your team (e.g., on 15th of each month from 5 p.m. to 5 a.m.)

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Yale MSS 6.1.3: Implement an emergency patch process

- First, a Configuration Management Plan is needed (MSS 5.5): describes how changes to a system are managed and tracked (for ITS-managed systems see ITS Change Guides):
  - Roles and responsibilities
  - Pre-approved and exempt changes
  - Change management records (to document a change)
  - Normal change procedure: test, document change, review change, deploy if approved, re-test
- Next, within the Plan, add a process for emergency changes
  - Deploy before testing and documentation
  - Retroactively go through change procedure—back out change if needed

What is a Security Planning Assessment (SPA)?

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- A SPA is used to:
  - Think through questions about how to meet and maintain the MSS for your IT system
  - Contribute to a registry of IT systems used for security testing
  - Identify and understand risk related to your IT system
- A SPA is **not**:
  - A gate (from ISO's perspective)
  - A detailed review of the security of an IT system
  - A statement of approval from the Information Security Office about an IT system

Steps to the SPA Process

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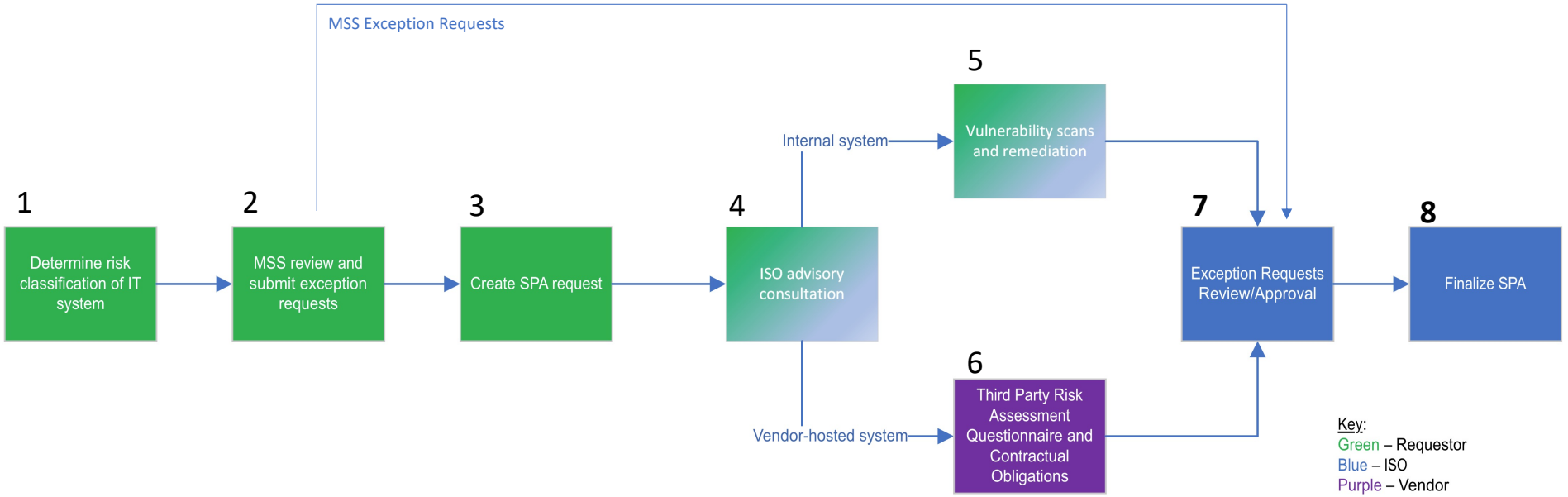

Questions and Answers

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Appendix: SPA at a Glance

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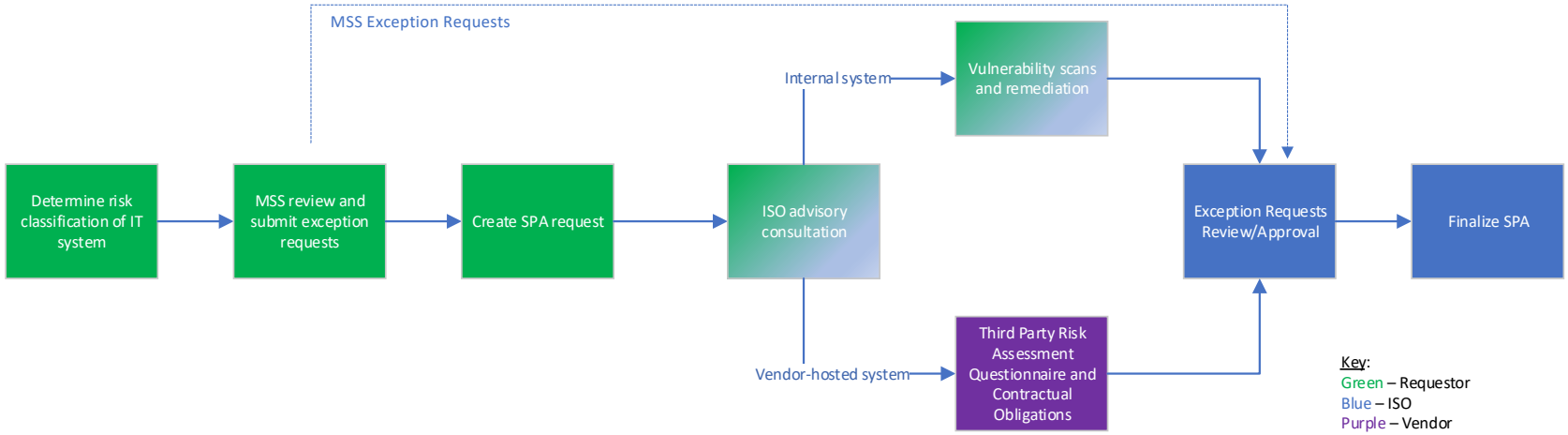

The SPA is used to:

- **Think through questions about how to meet and maintain the MSS for your IT system.**
- **Contribute to a registry of IT systems used for security testing.**
- **Identify and understand risk related to your IT system.**

The SPA is not:

- **A detailed review of the security of an IT system.**
- **A statement of approval from the ISO about an IT system.**

Important Links:

Risk Classification
https://cybersecurity.yale.edu/risk-classification

MSS Calculator
https://cybersecurity.yale.edu/mss/calculator

Submitting a SPA
https://cybersecurity.yale.edu/spa

Submitting an Exception Request
https://cybersecurity.yale.edu/exception-request