CReAT – Cybersecurity Risk Assessment Framework for IoT Platforms

Session: IoT Risk Assessment & Management

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HAVE TO DESIGN AN #IOT DEVICE

WHICH FIRST: SECURITY, ENERGY, RELIABILITY, INTEROPERABILITY OR EASE OF USE?
Cyberattack resilience and privacy

- Cyber-criminals stepping up attacks on IoT systems
- Privacy concerns in disruptive technologies
- No uniform Cyberattack resilience methodology

Source: http://www.itworld.com/
Increased attacks ...

- Multiple DDoS attacks led to inaccessibility of Github, Twitter, and more in October 2016.
  - Attacks carried out by IoT devices including printers, IP cameras, and baby monitors.
- Stuxnet – malicious computer program targeting industrial computer systems around a decade ago.
Growing concerns ... 

• Critical infrastructure being targeted 
• Legacy systems that do not handle latest security protocols 
• Lack of standards for Industrial IoT security 
• Scalability 
  • 32% of IIoT devices connect directly to the internet, bypassing traditional IT security layers. 
• Almost 40% said identifying, tracking and managing devices represented a significant security challenge. 
• Only 40% reported applying and maintaining patches and updates to protect their IIoT devices and systems. 
• 56% cited difficulty in patching as one of the greatest security challenges
  • More info - https://www.themanufacturer.com/articles/iiot-security-endpoints-most-vulnerable-aspect/
Cybersecurity Risk Assessment – ETSI Framework

- OWASP Application Security Verification Standard Project
- Microsoft's STRIDE
- Common Vulnerability Scoring System
CReAT Framework for Cybersecurity Risk Assessment
CReAT Framework Testing in Fed4FIRE+

Risk assessment in terms of
- DDoS detection
- Insufficient authentication, authorization
- Insecure Cloud web services

No security breach observed
Cyber Resilience

- Ability to prepare for, respond to and recover from cyber attacks.
  - It helps an organisation protect against cyber risks, defend against and limit the severity of attacks, and ensure its continued survival despite an attack.
- Emerged over the past few years because traditional cyber security measures are no longer enough.
- It is now commonly accepted that it’s no longer a matter of ‘if’ but ‘when’ an organisation will suffer a cyber attack.

Source: Symantec Whitepaper
Four Step Approach

Manage and Protect
- Malware protection
- Data security
- Identity and access control
- Encryption, network security …

Identify and detect
- Continuous monitoring of network and information systems to detect anomalies and potential cyber security incidents before they can cause any significant damage.

Respond and recover
- Incident response management program
- Measures to ensure business continuity
- Restore normalcy as soon as possible

Govern and assure
- Such program and measures are a part of enterprise organization and built into business.
Conclusion

• Risk assessment must be performed at the early phases of product and service definition, development.

• Security, privacy, and trust are key aspects when designing winning UX.

Source - https://www.reddit.com/r/Iota/comments/6axglx/how_does_iota_help_with_the_huge_iot_security/
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Thank You!!

감사합니다

Grazie

Thank You

Danke

Ευχαριστίες

Dalu

Köszönöm

Tack

Obrigado

Dank

Gracias

Merci

谢谢

ありがとう
Digiotouch Core Business

- Sustainable and Secure Digital Transformation
  - Cloud based, secure, End-to-End Paradise IoT Platform