Agenda

• What is Zero Trust?
• Why implement Zero Trust?
• What does Zero Trust involve?
• What are the benefits of Zero Trust?
• How to begin with Zero Trust

Slides Key:

Non-Technical: managerial, strategic and high-level (general audience)

Technical: Tactical / IOCs; requiring in-depth knowledge (sysadmins, IRT)
What is Zero Trust?

• Created in 2010 by John Kindervag (Forrester)
• Shift from castle and moat security model to zero trust approach in order to address current IT environments and workplaces
• None of the following should ever be trusted by default, regardless of the location each is operating from, either inside or outside the security perimeter:
  • Devices
  • Users
  • Workloads
  • Systems
• Every device should be treated as a threat vector
• Anything that cannot be verified is denied access
What is Zero Trust? (cont.)

New Identity Perimeter

Old Perimeter
Traditional Network: Endpoints, On-Site Users, Servers, Apps

Remote Employees
Hybrid Cloud
Cloud Applications
Personal Devices
Mobile Devices
Vendors & Contractors

Image source: duo.com
Why Implement Zero Trust?

- Given the interconnected nature of the future with IoMT devices, augmented reality, robotics and more, it is clear that the current perimeter-based security model that most healthcare organizations use will no longer be effective. To stay ahead of these trends, healthcare organizations must continue to invest in the basics while making a fundamental shift from the castle-and-moat approach to a Zero Trust model.

Image source: researchgate.com
What does Zero Trust Involve?

- According to Checkpoint, zero-trust security isn’t accomplished by deploying a single tool or platform. The approach usually involves technologies from an array of categories including:

1. Device security
2. Network security
3. Data security
4. Workload security
5. Identity and access management
6. Visibility tools
7. Orchestration platforms

Image source: checkpoint.com
What Are the Benefits of Zero Trust?

- A Zero Trust model can help healthcare organizations provision access in a more effective manner by focusing on data, workloads and identity.
  
  ✓ Data-centric
  ✓ Workload-first
  ✓ Identity-aware
  ✓ Visibility
  ✓ Reinforces security orchestration and automation

How to Begin with Zero Trust

- Software Defined Perimeter (SDP)
  - Hide Internet-connected infrastructure (servers, routers, etc.) so that external parties and attackers cannot see it, whether it is hosted on-premises or in the cloud
  - Base the network perimeter on software instead of hardware
  - Network layer vs. application layer
  - Device + user authentication
  - Increased security and flexibility

Image source: networkworld.com
How to Begin with Zero Trust (cont.)

• Mesh VPNs
  o Peer-to-Peer (P2P) architecture
  o Less expensive & easier to scale
  o Device identity checks at protocol level
  o User identity checks
  o Encrypted traffic
How to Begin with Zero Trust (cont.)

• Modern Network Access Control (NAC)
  o Identify every device/user on the network before granting access
  o Require continuous monitoring of the network & devices
  o Assess posture and compliance
  o Enforce access control

Image source: genians.com
Conclusion

• Don’t trust anyone!
• Deny all access until network can authorize users/devices
• Complete Zero Trust should secure devices, networks, data, workloads, and leverage IAM, visibility tools, automation & orchestration platforms

Image source: crowe.com
Reference Materials
References

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  o https://www.paloaltonetworks.com/cyberpedia/what-is-a-zero-trust-architecture


• Tommy Peterson, How Hospitals Can Establish a Zero Trust Security Model
Questions
Questions

Upcoming Briefs

- TrueFighter and RDP Access (10/8)
- Using Honeypots for Network Intrusion Detection (10/15)

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