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Architectures, Solutions, and Community
VIRTUAL EVENT, APRIL 11-12, 2023

An Overview of Zero Trust Architecture

Presented by Chris Willman

Agenda

- Introduction
- What is Zero Trust?
- Applicability
- Implementation

Who am I?

- Doctoral Student-Zero Trust Architecture Implementation and Assessment
- Principal Cybersecurity Engineer-R&D Center
- IEEE Zero Trust Security Working Group
- Cloud Security Alliance
- Cybersecurity Assessments

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What is Zero Trust?

Zero Trust vs. Zero Trust Architecture

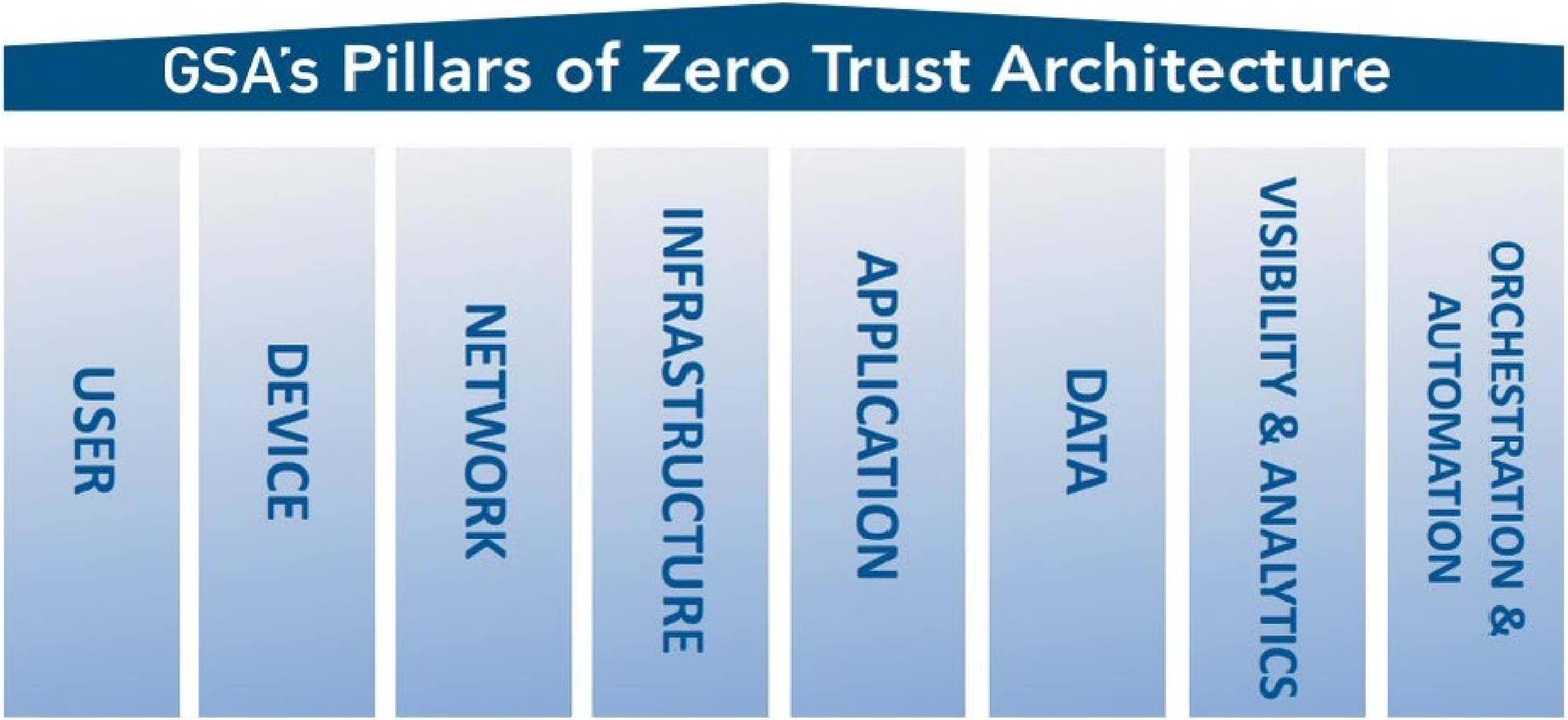
- Zero Trust

A cybersecurity approach focused primarily on data and capability protection

- Zero Trust Architecture

An enterprise implementation designed to support the principles and tenets of Zero Trust

What is Zero Trust Architecture?



[https://gsablogs.gsa.gov/technology/2021/07/15/zero-trust-architecture-acquisition-and-adoption/]

Zero Trust Architecture Challenges

- Not a single architecture but a set of guiding principles (NIST SP 800-207, p.1)
- Radical change from a long-standing design model
- Comprehensive understanding of operations
- Substantial integration requirements
- Brownfield vs greenfield

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Applicability

Who is Being Impacted by Zero Trust?

- US Federal Government
- Critical Infrastructure Organizations
- Federal Contractors
- Supply Chain
- Everyone!

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Implementation

How Should I Get Started?

Design Principles

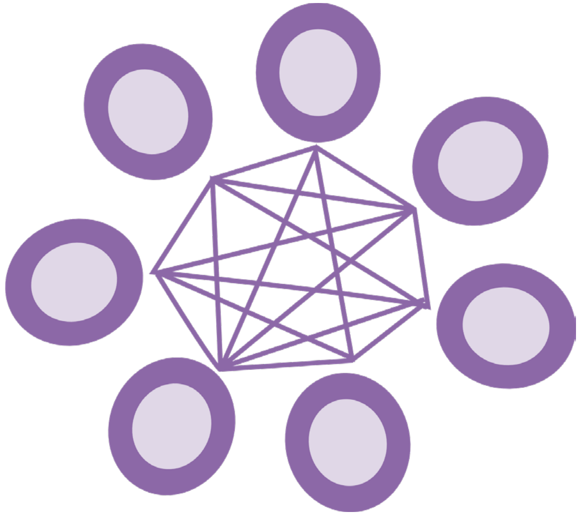
1. Define business objectives

2. Design from the inside out

3. Determine least privileged access

4. Inspect all traffic

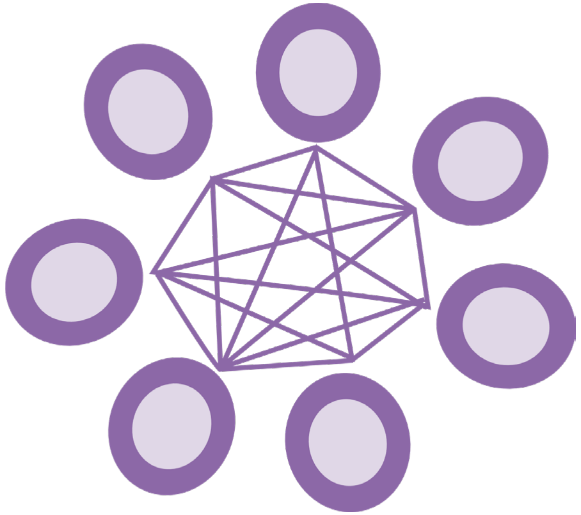
[https://isaca.nl/events/zero-trust-by-the-founder-john-kindervag-zero-trust-how-it-is-meant-to-be/]



Design Methodology

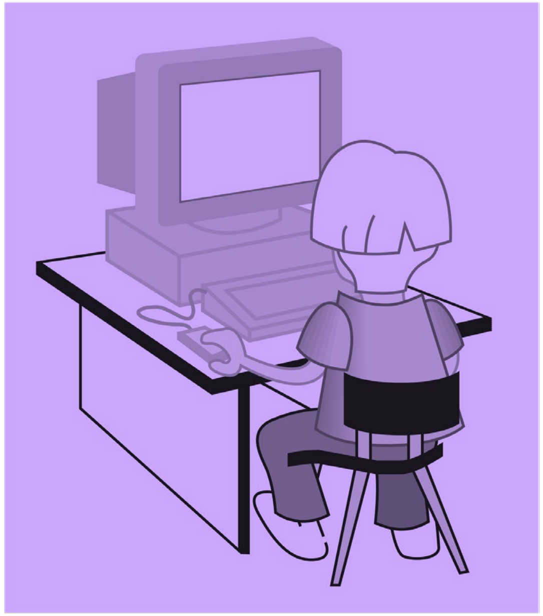
1. Define your protect surface
2. Map the transaction flows
3. Architect the environment
4. Create the Zero Trust rules
5. Monitor and maintain the environment

[https://www.darkreading.com/attacks-breaches/-zero-trust-the-way-forward-in-cybersecurity]



What Else?

1. Governance
2. Policies
3. Procedures
4. Feedback-continuous monitoring



What are some likely obstacles?

- MINDSET
- Migration
- Legacy equipment
- Mobile applications
- Remote workers
- Implementation of phishing resistant MFA
- Privacy vs security
- Assessment

Guidance

- Continuous Diagnostics and Mitigation (CDM)

https://www.cisa.gov/resources-tools/programs/continuous-diagnostics-and-mitigation-cdm-program

- Software-Defined Perimeter/Network (SDP/SDN)

https://cloudsecurityalliance.org/artifacts/software-defined-perimeter/

- Identity, Credential, and Access Management (ICAM)

https://playbooks.idmanagement.gov/

References and Resources

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Questions, Comments, or Concerns

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