TEXAS RE

Zero Trust Architecture

Kerrick Rosemond, Jr.
CIP Cyber & Physical Security Analyst

July 18, 2024

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Upcoming Texas RE Events

July 30, 2024

Inverter-Based Resources

August 6, 2024

IBR Data Collection and Reports

August 28, 2024

Cyber & Physical Security Workshop

Upcoming ERO Enterprise Events

July 24, 2024

CMEP Conference

August 7, 2024

Protection System Workshop

August 13-15, 2024

Power Systems Security Conference

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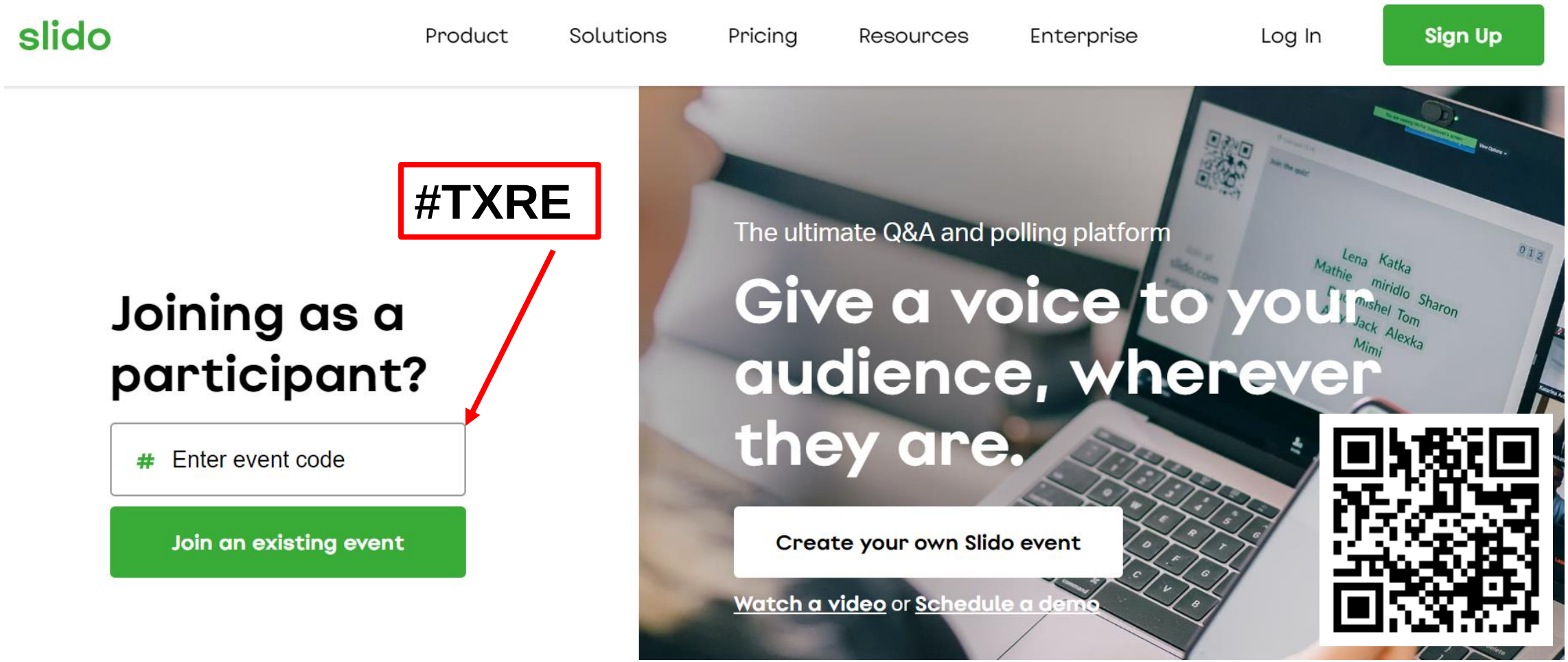
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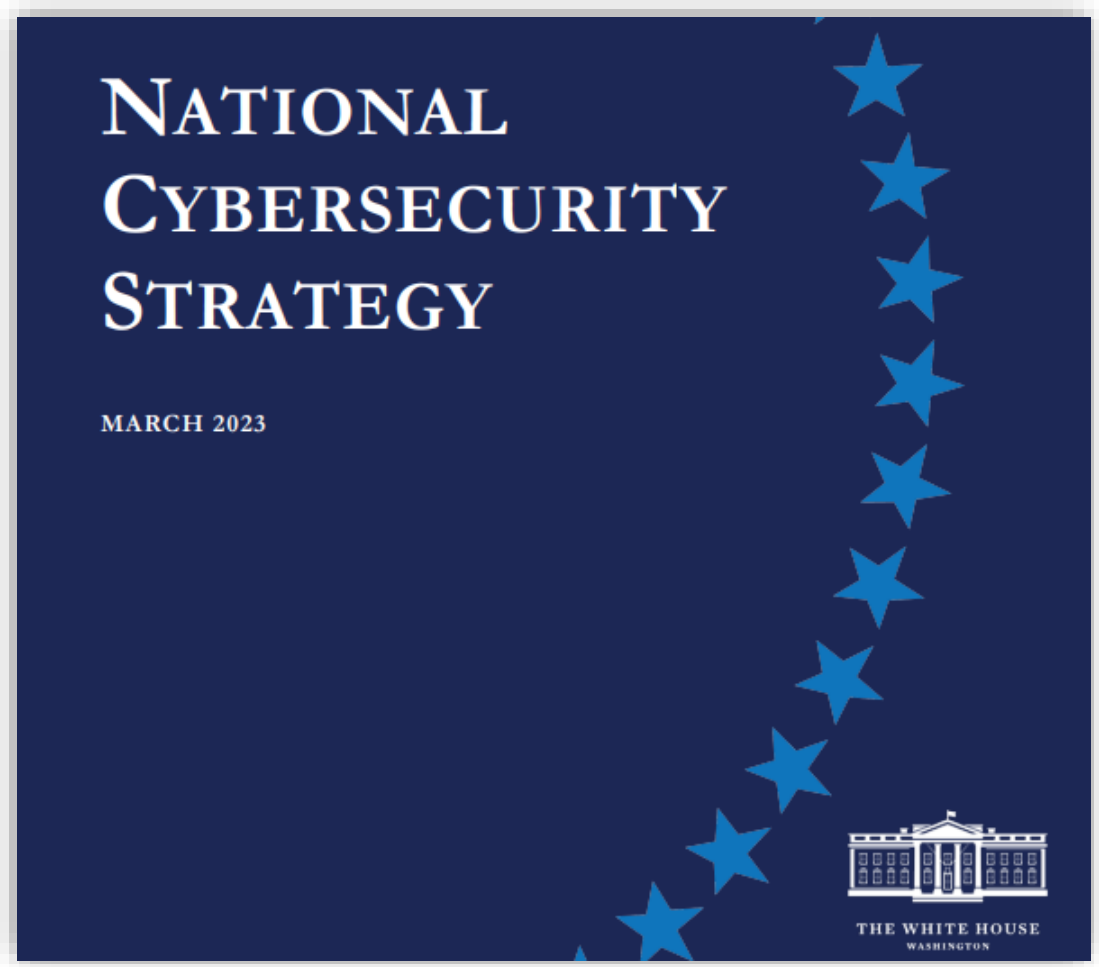
Agenda

- National Cybersecurity Strategy
- Understanding Zero Trust Architecture
- Concepts of Zero Trust
- How it Works
- Zero Trust Security Model
- Journey to Zero Trust
- CIP Standards

National Cybersecurity Strategy



- Defend Critical Infrastructure
- Disrupt and dismantle threat actors
- Shape market forces to drive security and resilience
- Invest in a resilient future
- Forge international partnerships to pursue shared goals

National Cybersecurity Strategy

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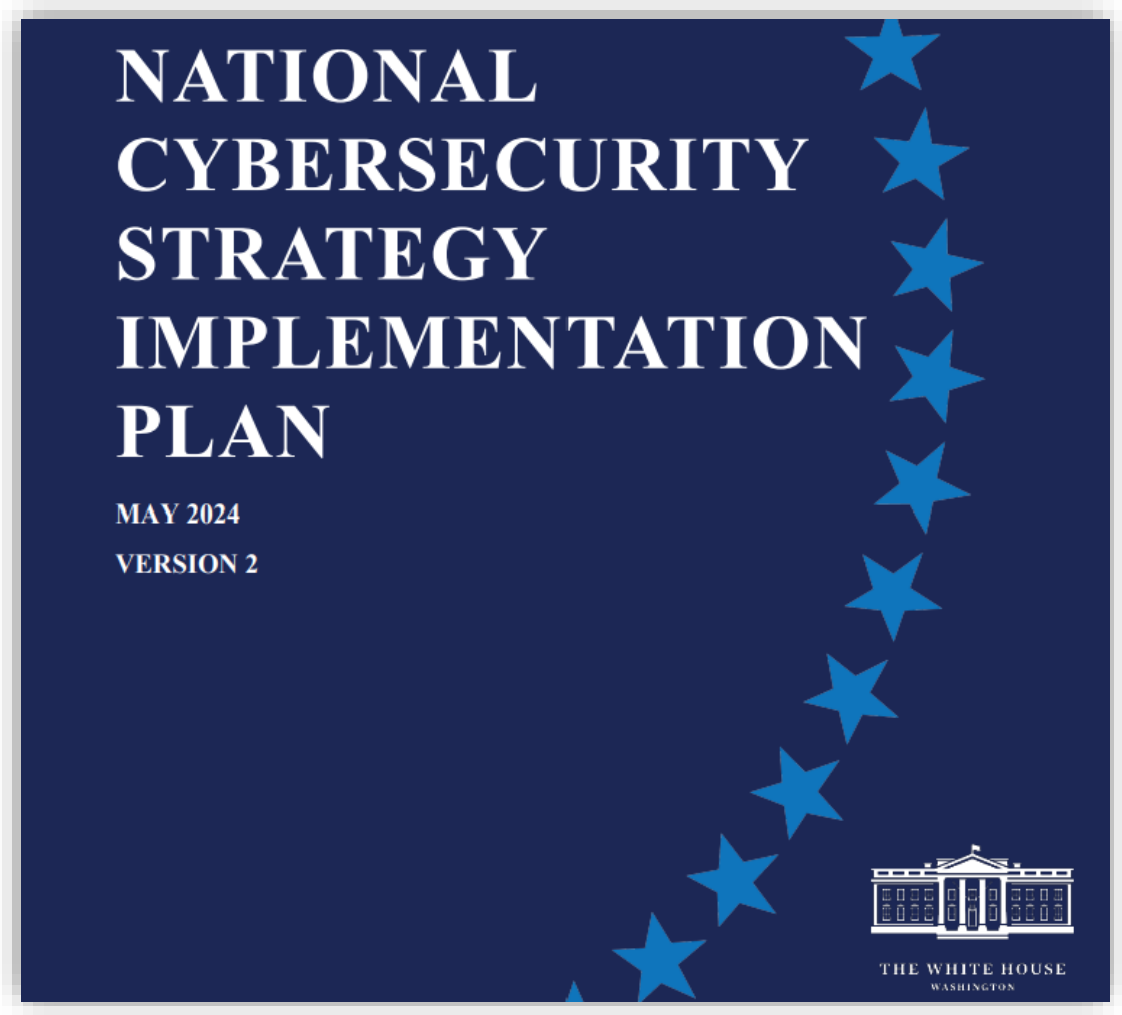

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Slido Question

What are some concepts of zero trust architecture?

Understanding Zero Trust Architecture

-Never trust, always verify

What is Zero Trust Architecture (ZTA)?

- Never trust, always verify
- All users and devices are potential threats
- End-to-end approach
- Need-to-know

Zero Trust Architecture Concepts

- Least Privilege
- Microsegmentation
- Multifactor Authentication
- Continuous Monitoring

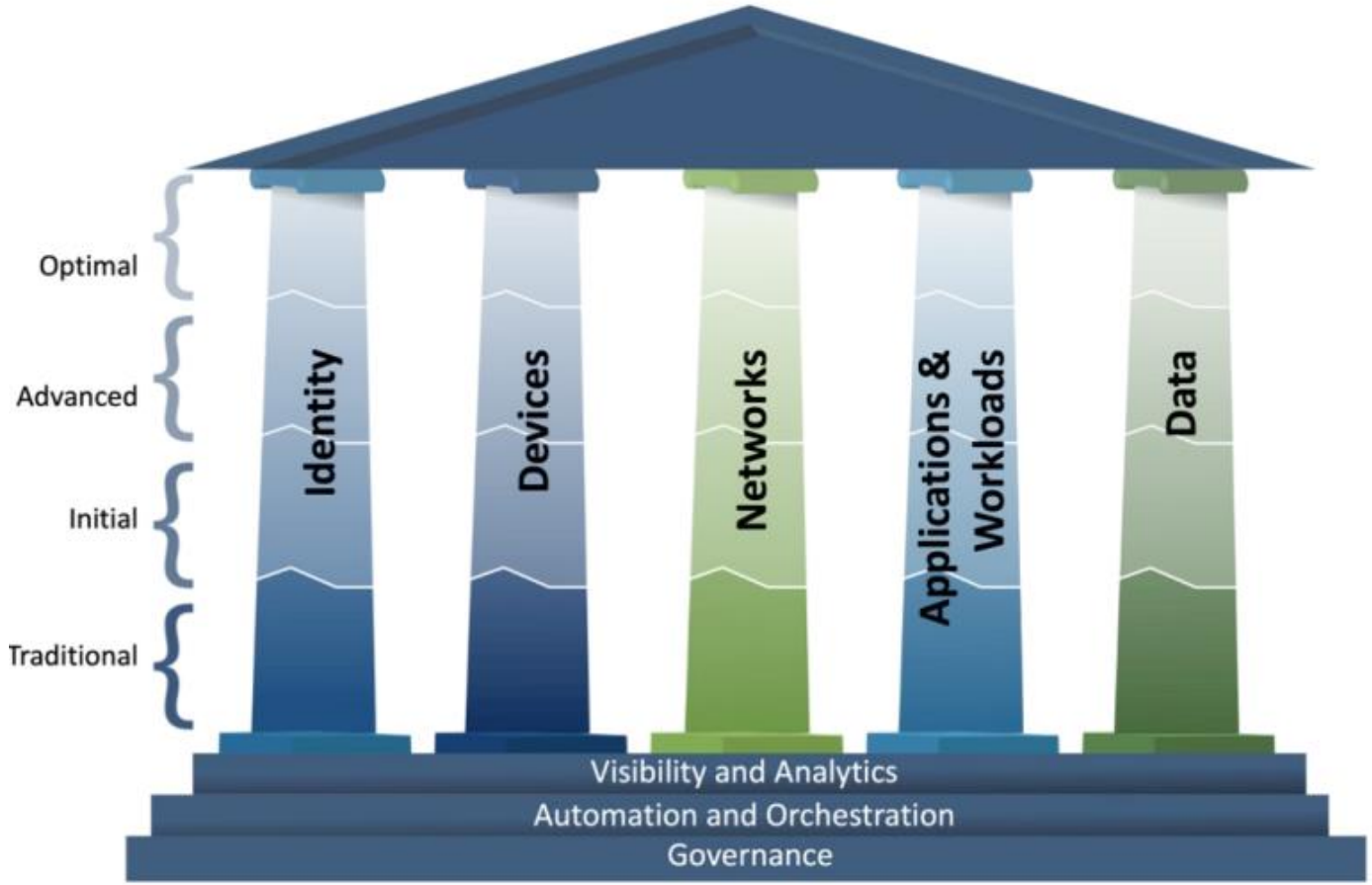
How it Works

*Zero trust architecture is not a single architecture, but a set of guiding principles for workflow, system designs and operations that can be used to improve the security posture of any classification or sensitivity level - **NIST SP 800-207***

NIST—Seven Tenets of Zero Trust

- All data sources and computing services are considered resources
- All communication is secured regardless of network location
- Access to individual enterprise resources is granted on a per-session basis
- Access to resources is determined by dynamic policy
- The enterprise monitors and measures the integrity and security posture of all owned and associated assets
- All resource authentication and authorization are dynamic and strictly enforced before access is allowed
- The enterprise collects as much information as possible about the current state of assets, network infrastructure, and communications, and uses it to improve its security posture

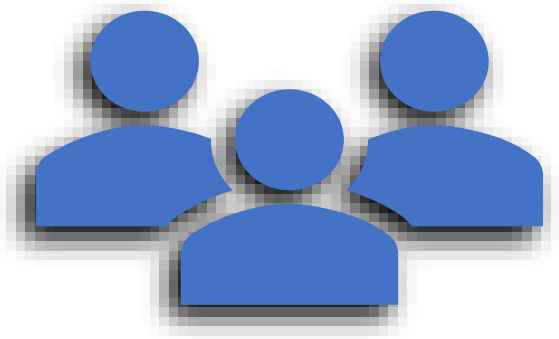
CISA Zero Trust Security Model



CISA Zero Trust Security Model

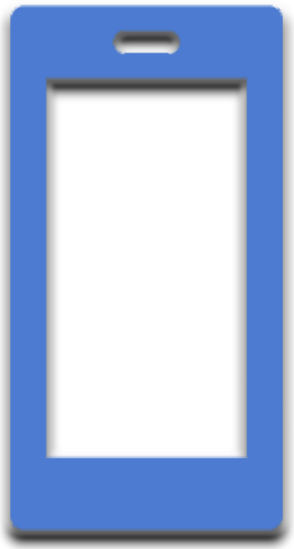
The Journey to Zero Trust: Users

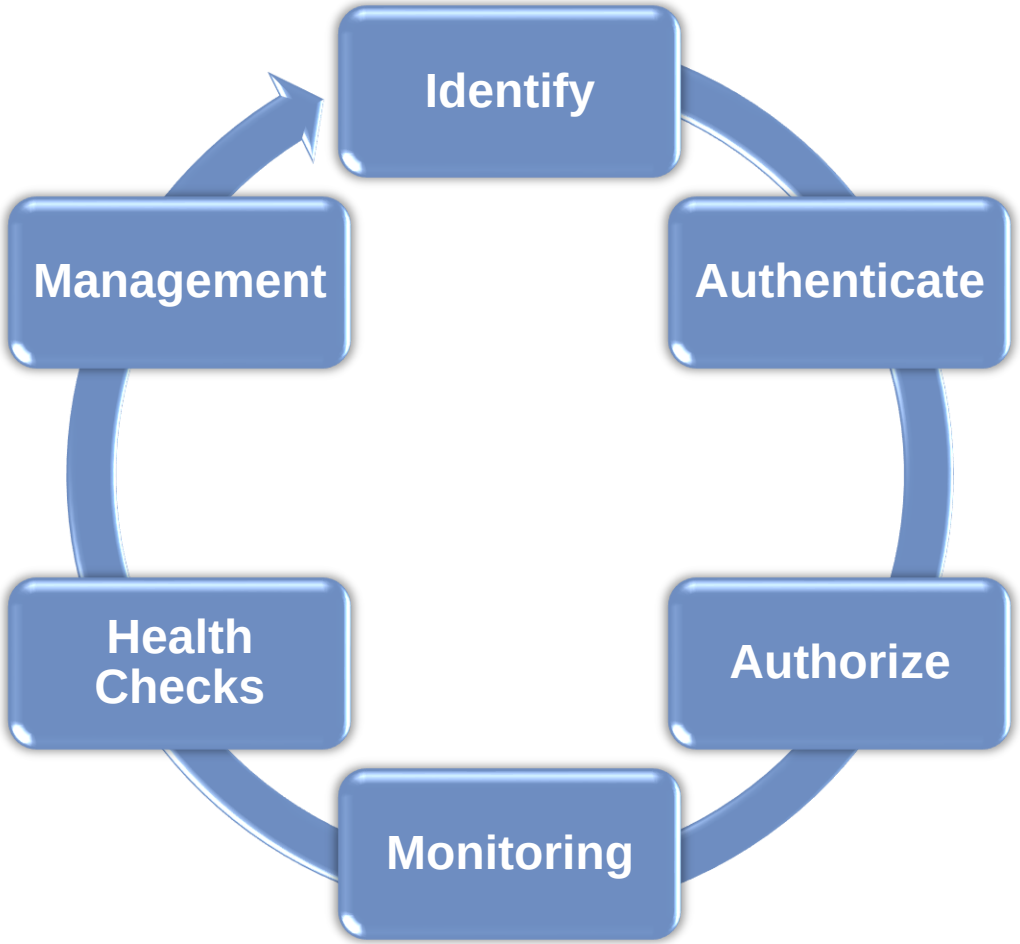
Users



The Journey to Zero Trust: Devices

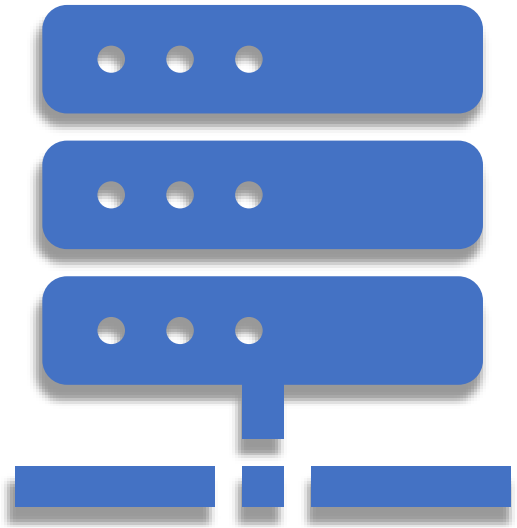
Devices





The Journey to Zero Trust: Network

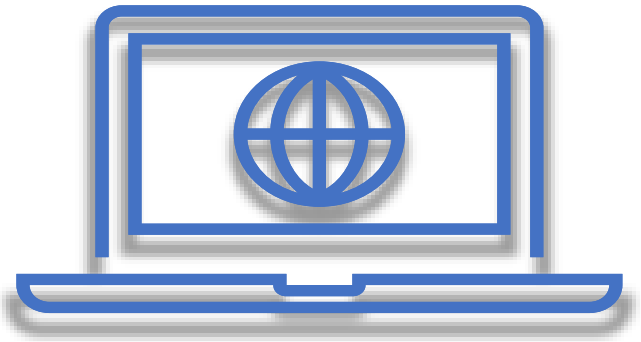
Network



- Segment
- Isolate
- Control

The Journey to Zero Trust: Applications

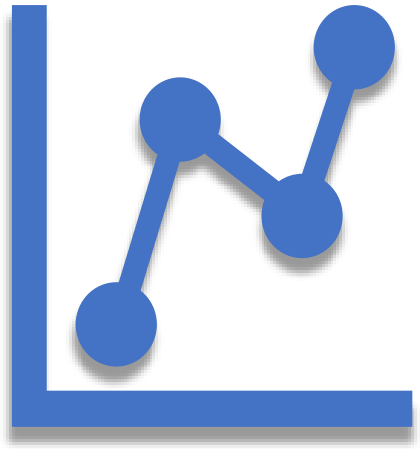
Applications



- Secure & Manage
- Task or Services
- Application Layer
- Containers
- Virtual Machines

The Journey to Zero Trust: Data

Data



- **Categorization**
- **Protection**

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Slido Question

What are some zero trust principles you can implement?

CIP Standards That Indirectly Align with Zero Trust

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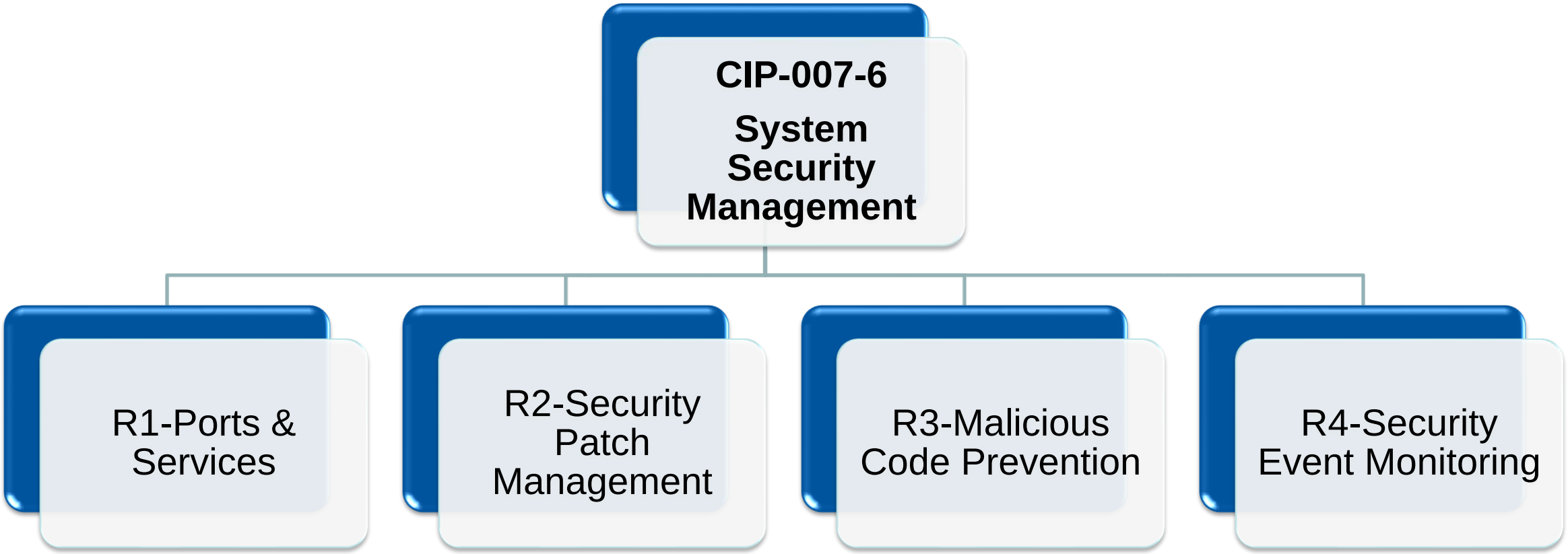
CIP-005-7

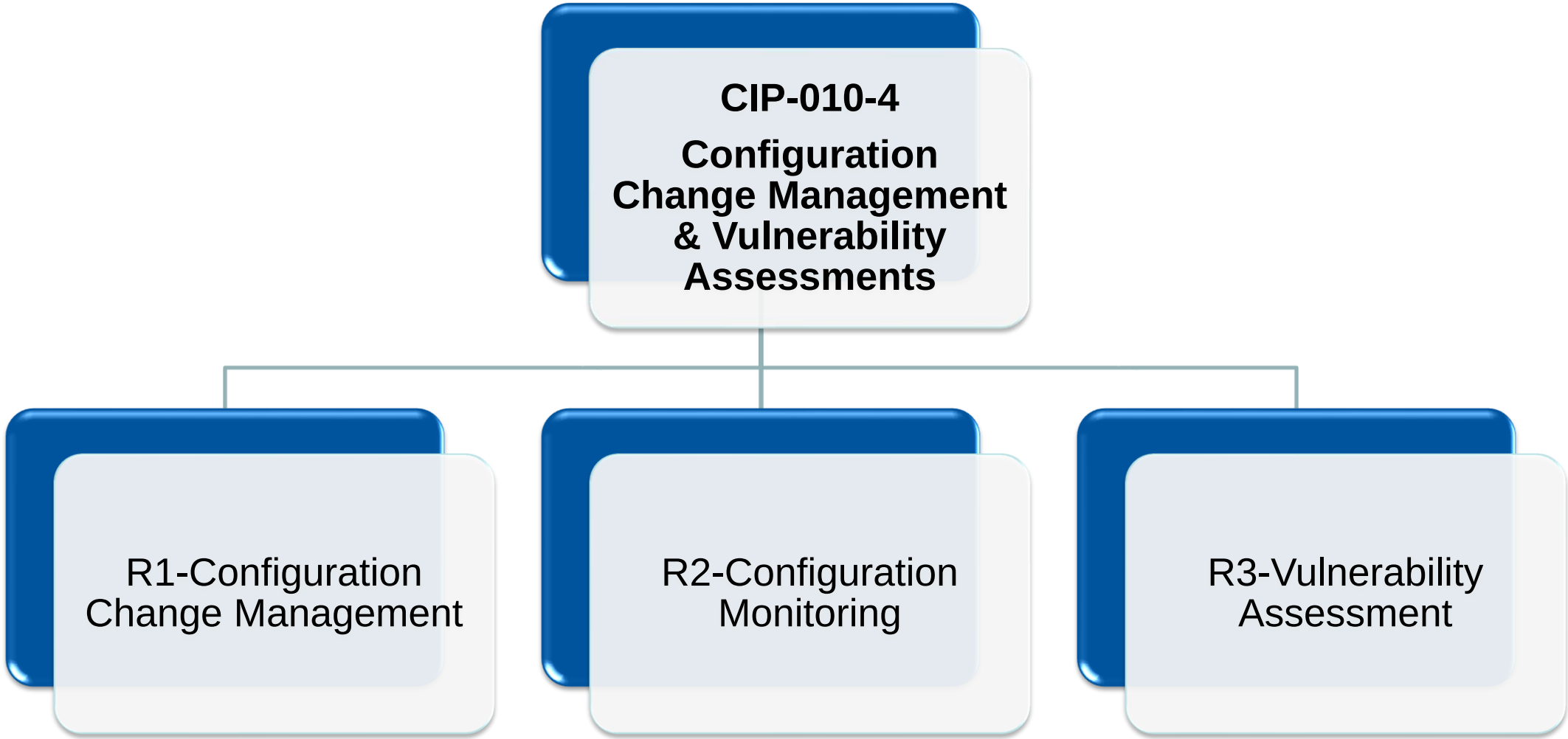
Electronic Security Perimeter

- R1-Electronic Security Perimeter
- R2-Remote Access Management
- R3-Vendor Remote Access Management for EACMS & PACS

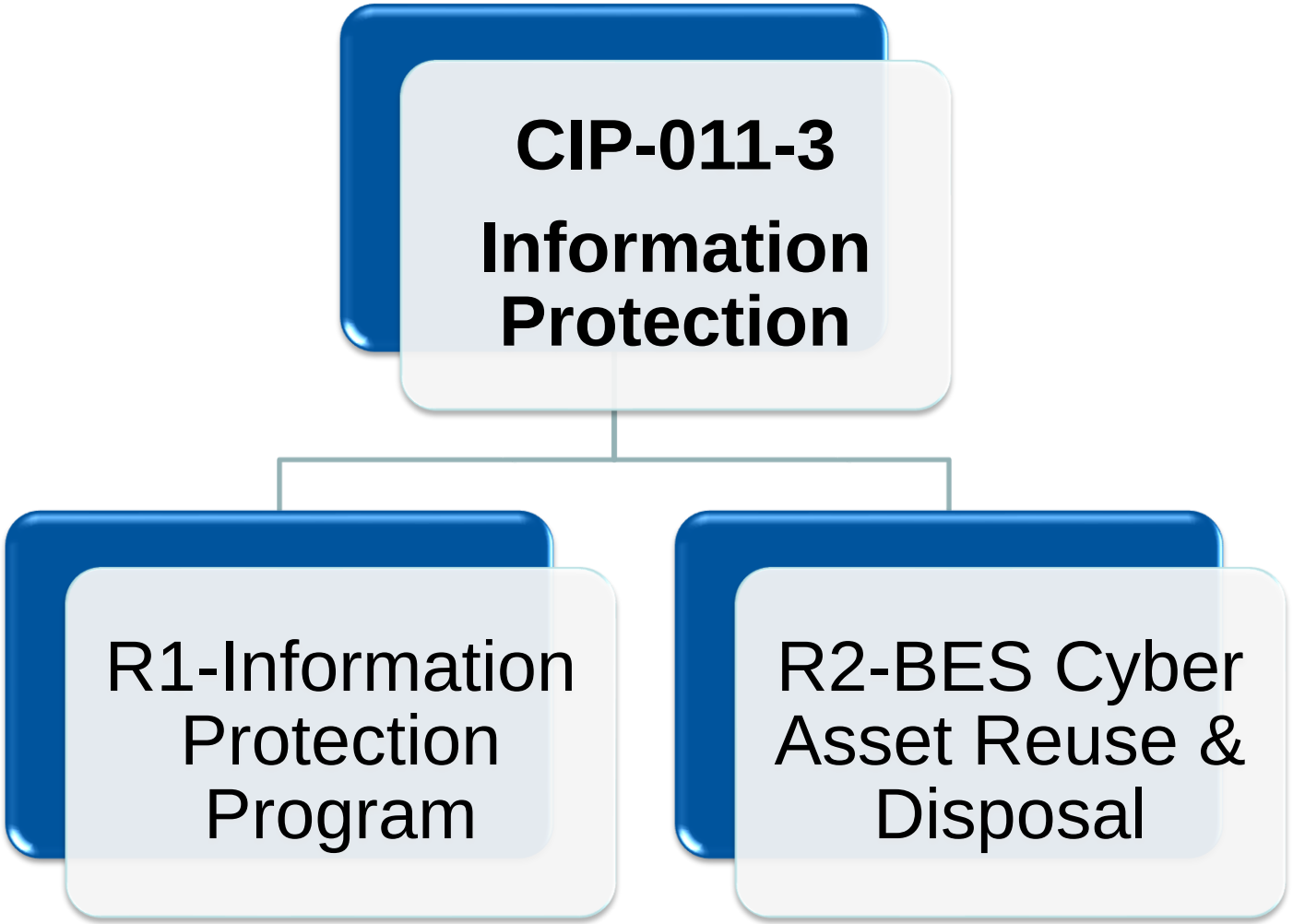
CIP Standards That Indirectly Align with Zero Trust



CIP Standards That Indirectly Align with Zero Trust



CIP Standards That Indirectly Align with Zero Trust



Resources

- **NIST SP 800-207**
  - Zero Trust Architecture (nist.gov)
  - Zero Trust Architecture - Glossary | CSRC (nist.gov)
- **National Cybersecurity Strategy**
  - National-Cybersecurity-Strategy-2023.pdf (whitehouse.gov)
- **National Cybersecurity Strategy Implementation Plan**
  - NCSIP-Version-2-FINAL-May-2024.pdf (whitehouse.gov)
- **CISA Zero Trust Security Model**
  - Zero Trust Maturity Model Version 2.0 (cisa.gov)

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Ensuring electric reliability for Texans