RSAC 2025 Conference

Many Voices.
One Community.

SESSION ID: NCS-T01

Modern Architectures: Mapping SASE to the Cyber Kill Chain

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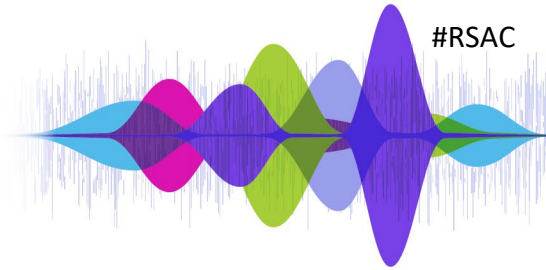

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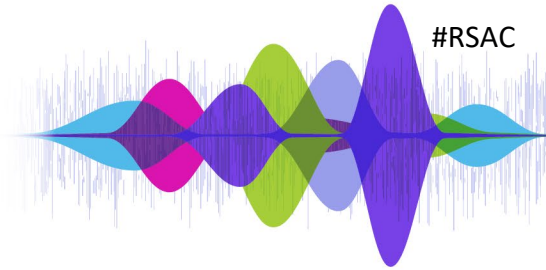
5.2M USD
21 Days
14K USD/min

Agenda



- Introduction & Relevance
- Historic Network Security Architecture VS Modern Cyber Security Challenges
- What is SASE & SSE?
- The Cyber Kill Chain & How SASE maps
- Different Approaches to SSE/SASE Architectures
- Conclusion & Why Frameworks Matter
- Apply

Ransomware: A Pervasive Threat

19

Average number of ransomware attacks, **every second,** in 2023 **

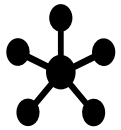
???%

Of organizations globally have experienced ransomware attacks

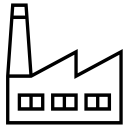
$1.82M

Average cost to remediate in 2023 *

Phishing, Spear Phishing (targeted with urgency)



Scanning (persistent, obfuscated, distributed)



Local access (USB drive, Wi-Fi)

Identity (AD, SaaS)

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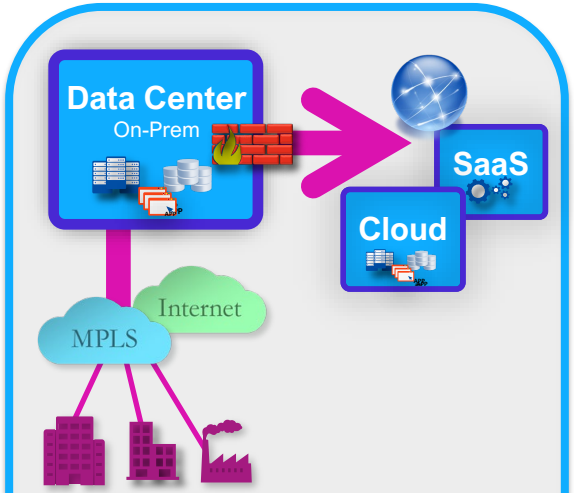
Historic Network Security vs. Modern Security Challenges

Progression of Network Security Architectures

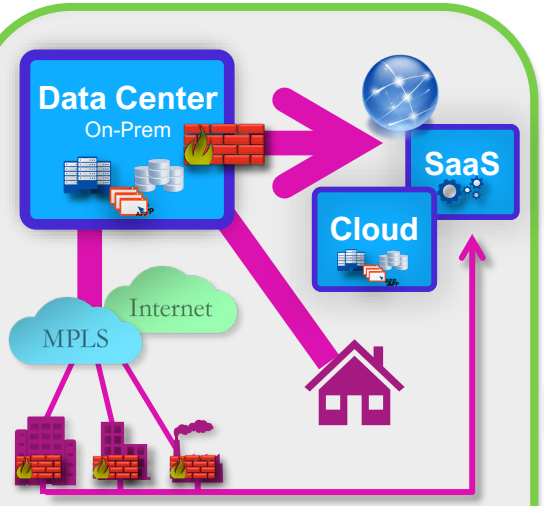


2000's

- **Efficacy:** Lack of Comprehensive Coverage
- **Efficiency:** Tool Sprawl

2006 AWS

2007 NGFW



Early 2010's

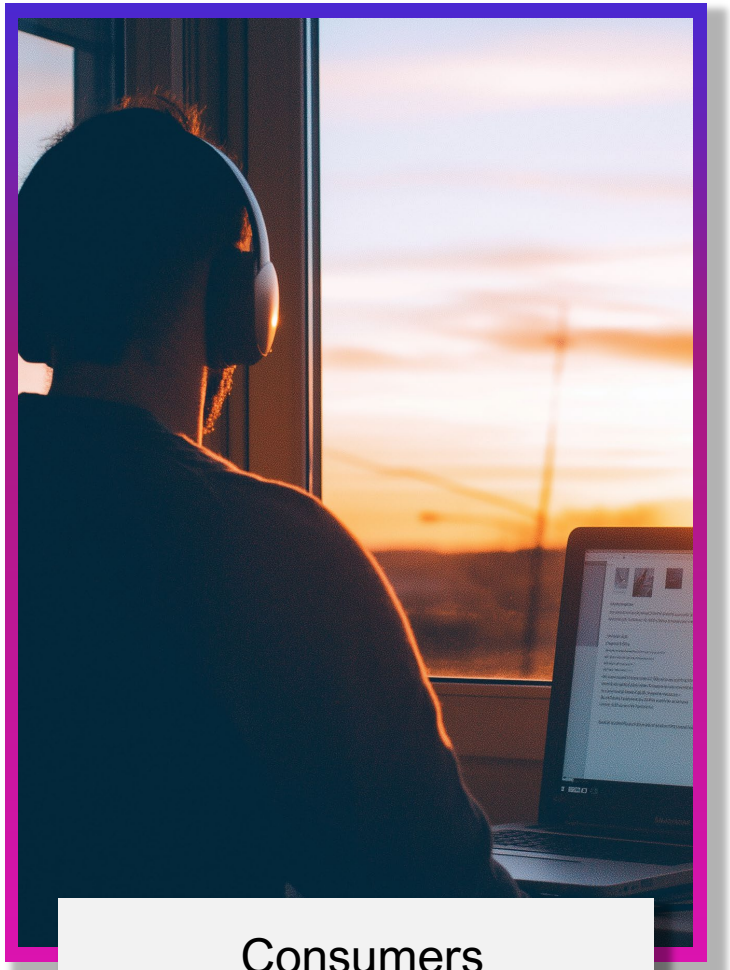
- **Efficacy:** Integration Complexity
- **Efficiency:** Resource Demands

2012 CASB

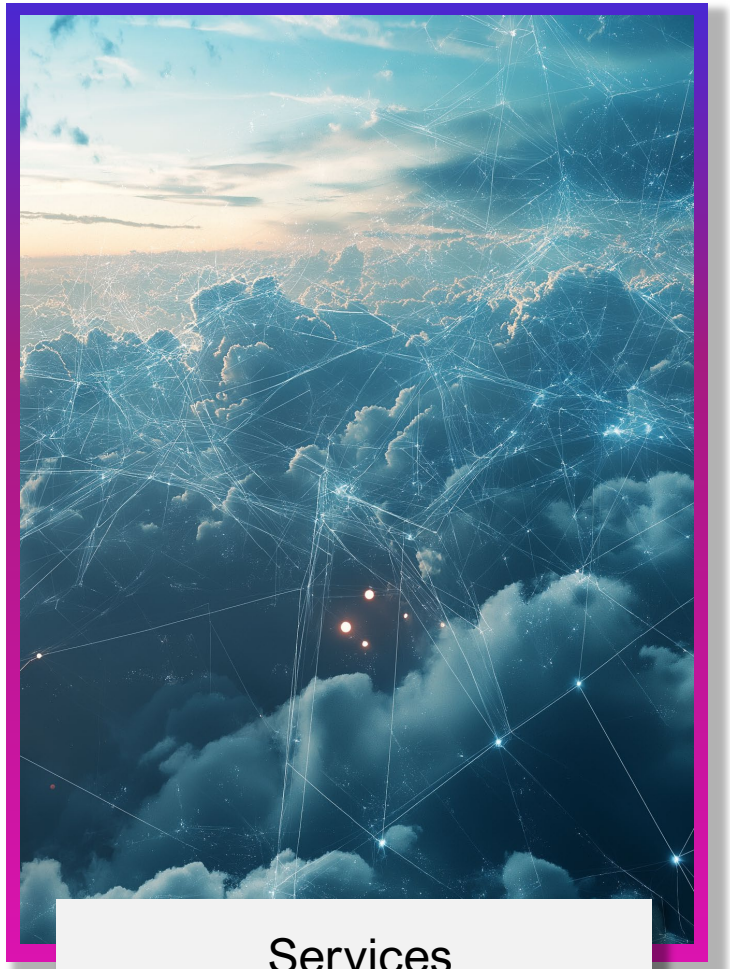
Today

As the needs of our organizations evolve, how do we adapt?

Everything is Everywhere



Consumers
(Users, Contractors, Headless Devices)



Services
(Applications, Data Storage, Internet)

Threats
(Insider Threats, Third-Party Threats, Lateral Movement)

Traditional Security Strategies do not effectively address these use cases

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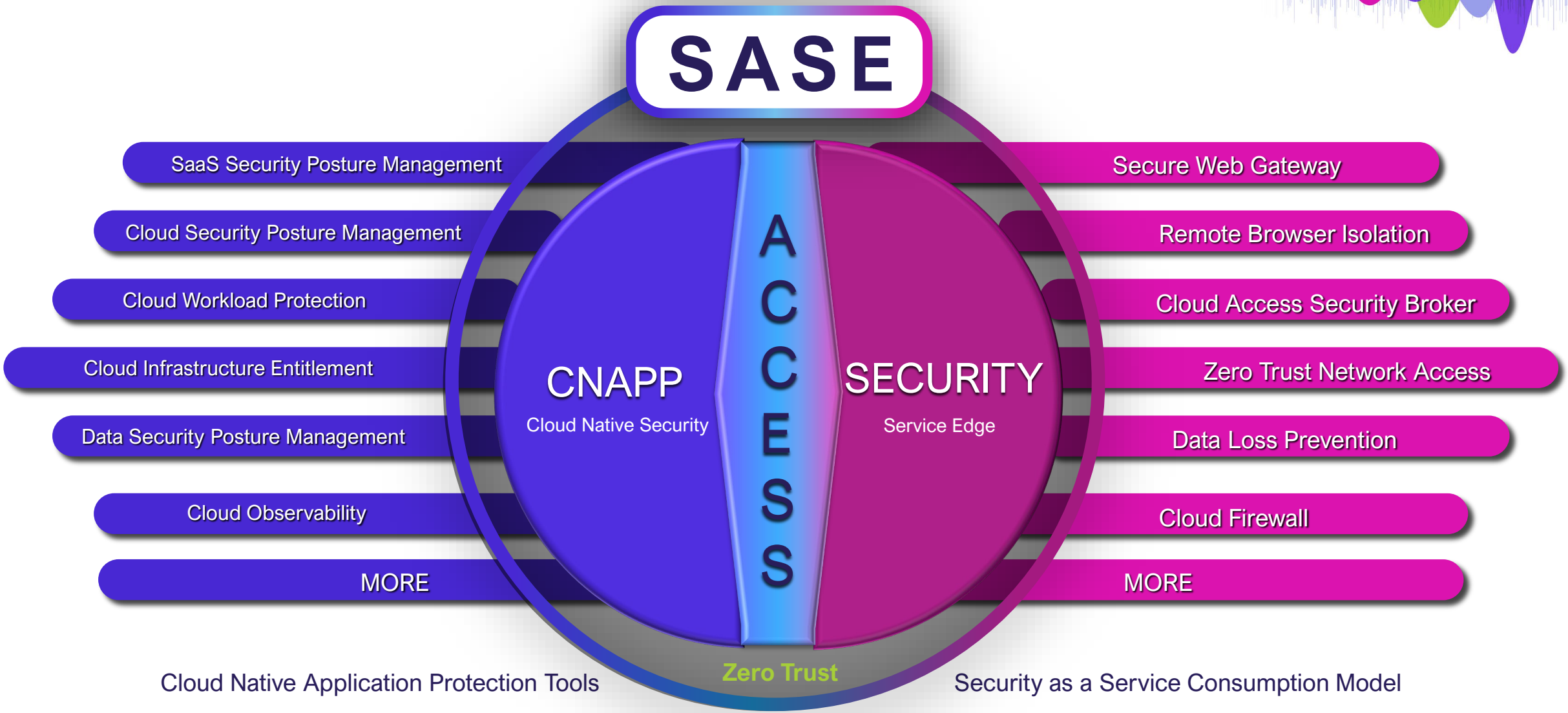
What is SASE?

Many Voices.
One Community.

Secure Access Service Edge



Cloud Native Application Protection Tools

Security as a Service Consumption Model

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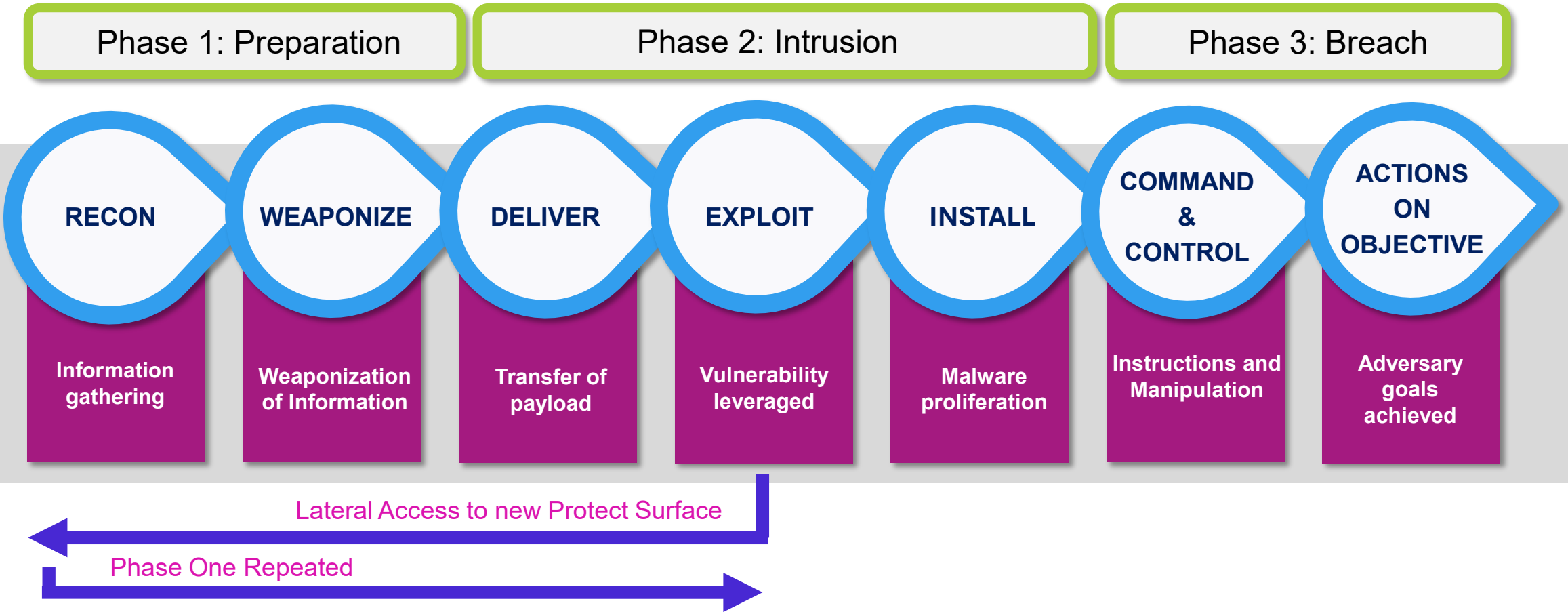
Cyber Kill Chain

Overview and Mapping Exercise

Many Voices.
One Community.

The Cyber Kill Chain: Attacker's View



Phase 1: Attacker's Perspective

Reconnaissance

We will add a decoy address to obfuscate:
-D <*decoy1*>[,<*decoy2*>][,ME]

We may also spoof our source address and port:

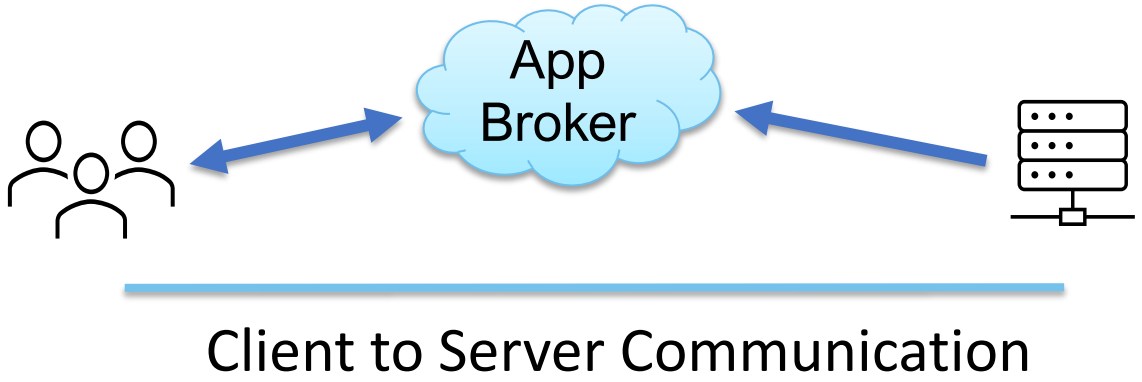
-S <*IP_Address*>
--source-port <*portnumber*>

- Scanning with obfuscation

```
[root@research scripts]# nmap -Pn --script vuln testphp.vulnweb.com -p 8443
Starting Nmap 7.70 ( https://nmap.org ) at 2019-10-25 11:09 -03
Nmap scan report for testphp.vulnweb.com (176.28.50.165)
Host is up (0.29s latency).
rDNS record for 176.28.50.165: rs202995.rs.hosteurope.de
```

Phase 1: Defender's Perspective

Reconnaissance



- ✓ Zero Trust Principles
- ✓ Proxy ZTNA: Inside-Out Connection *or*
- ✓ Network ZTNA: Ingress access managed by SSE provider (IP/DNS)

Phase 1: Attacker's Perspective

Weaponization

Sharing CVEs: (iSee857, 2025)

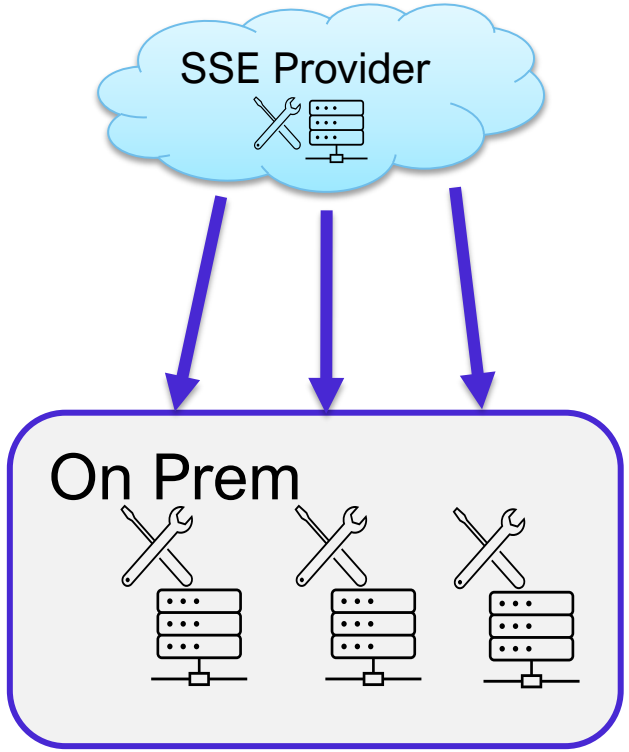
- CVE for web management UI

Phase 1 Preparation → Phase 2 Intrusion → Phase 3 Breach

Phase 1: Defender's Perspective

Weaponization

- ✓ Staying ahead of threats
  - ✓ Automated management & patching
- ✓ Secure 3rd party access
  - ✓ Agent *or* Browser



Phase 1 Preparation → Phase 2 Intrusion → Phase 3 Breach

Phase 2: Attacker's Perspective

Delivery &

Exploit

Delivery:

- PHP Script Injection authentication bypass
- Chain CVEs together to gain admin access

Exploit:

- Modify logging/alerting
- Setup persistent access (tunnel)
- Repeat phase 1 from new vantage point
  - AD recon > exploit
  - Vulnerable Hypervisor

Phase 2: Defender's Perspective

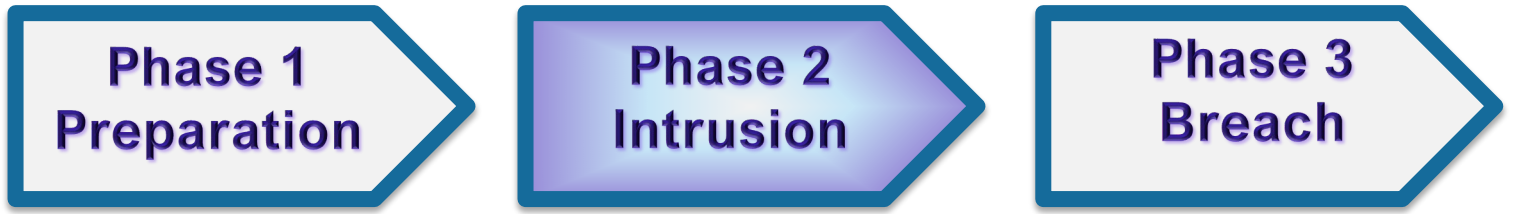
Delivery & Exploit

Delivery:

- ✓ Behavior Monitoring
- ✓ Web App Security
  - ✓ OWASP Top 10
  - ✓ Cloud Firewall (IPS)
- ✓ Remote Browser Isolation

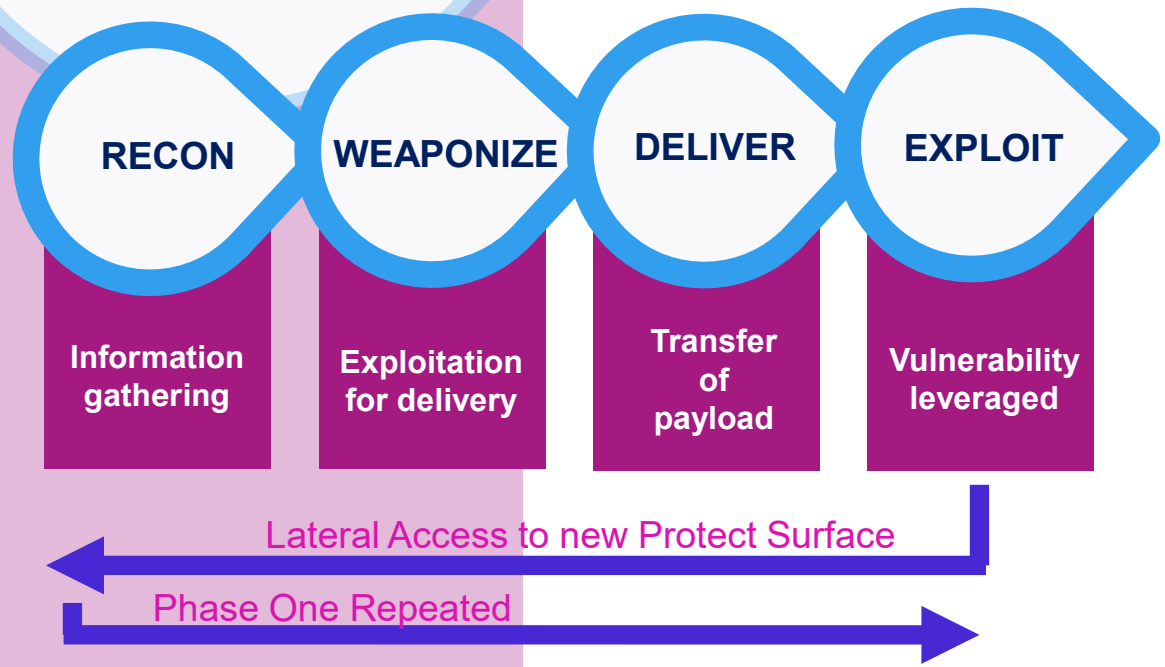
Exploit:

- ✓ SSE provider logging and auditing
- ✓ Centralized Observability
  - ✓ Integration with SIEM/SOAR
- ✓ No "low hanging fruit"



Phase 2: Attacker's Perspective

Exploit (Continued)

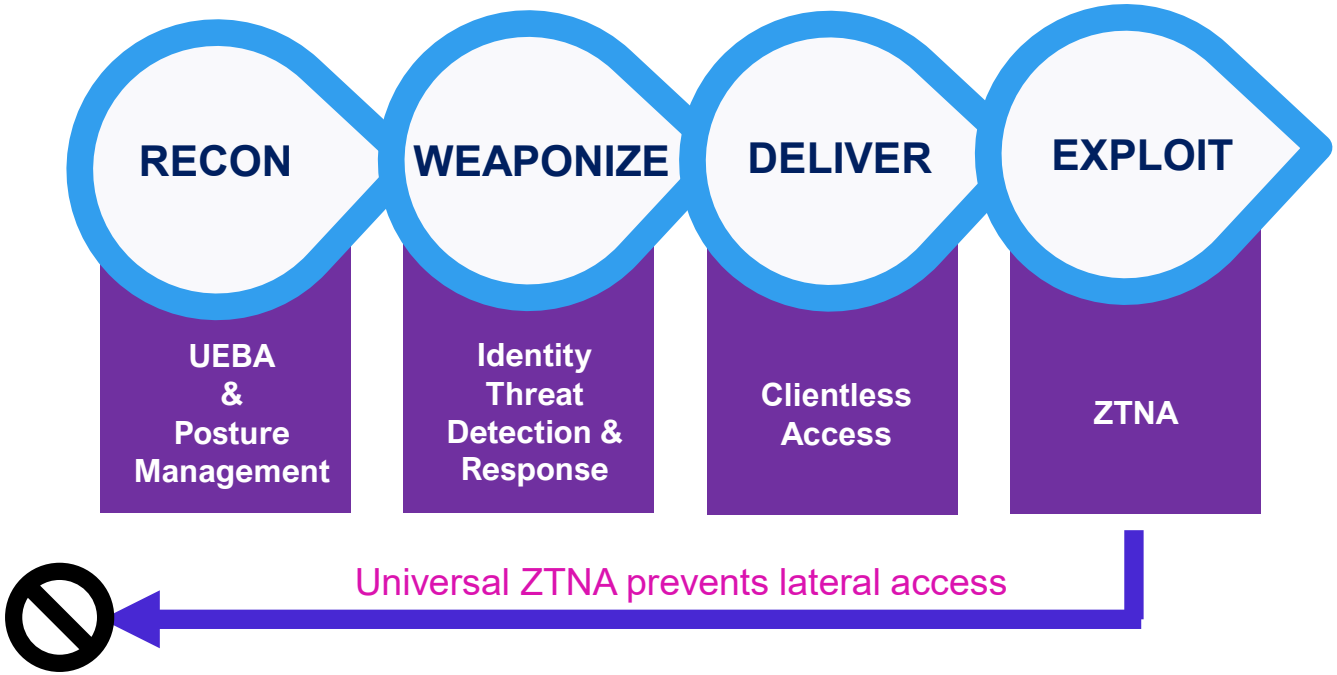


- Phase 1 repeats
- Identity-based recon
  - Misconfiguration in ADCS
  - Kerberos "roasting" attack
    - Privilege escalation to create ESX Admins group (CVE-2024-37085)
      - Hypervisor admin access

Phase 2: Defender's Perspective

Exploit (Continued)

- ✓ Policies based on Identity
- ✓ Universal ZTNA
  - ✓ Always On
  - ✓ Stop Lateral Movement
  - ✓ Least Privilege Access

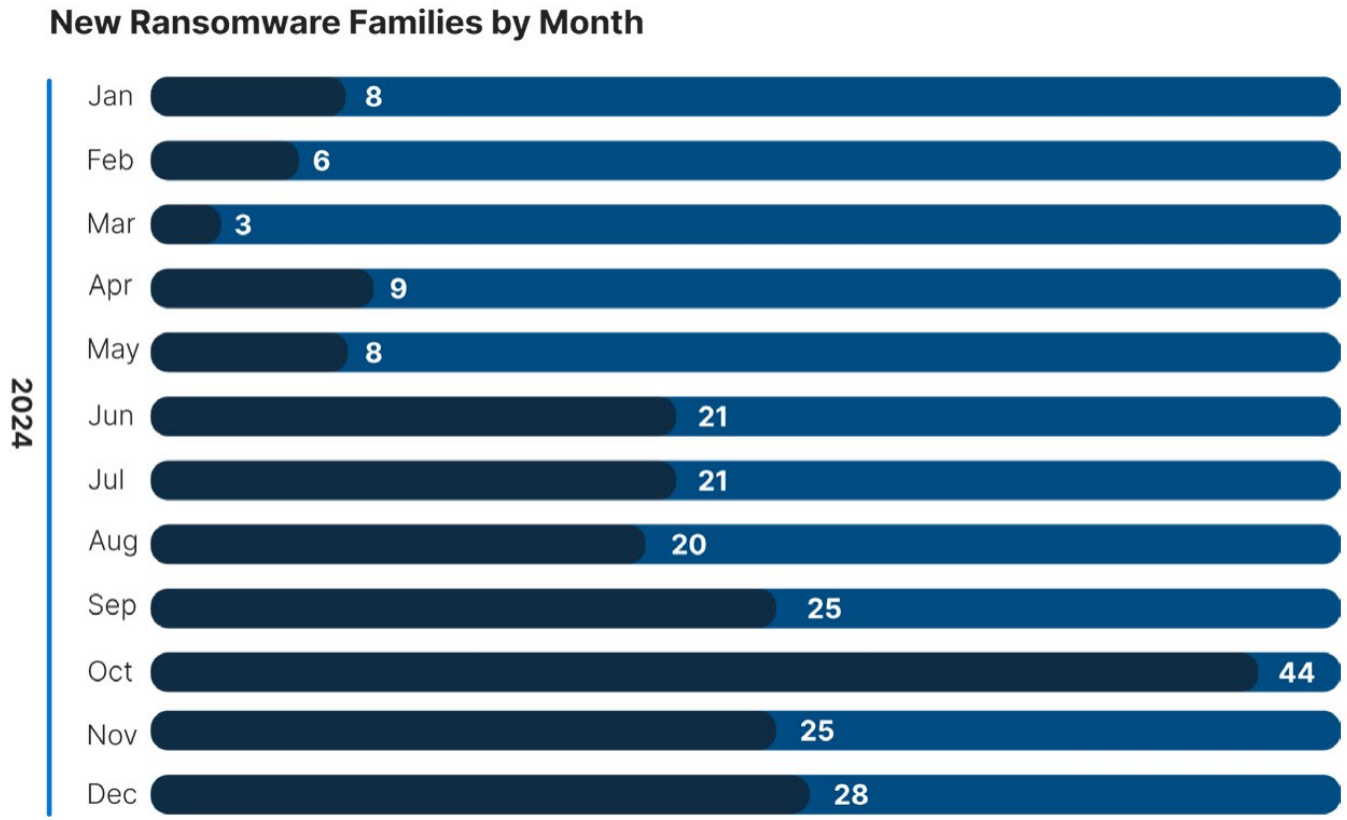


Phase 1 Preparation → Phase 2 Intrusion → Phase 3 Breach

Phase 2: Attacker's Perspective

Installation

- Leveraging Ransomware as a Service
  - Lockbit 3.0 builder



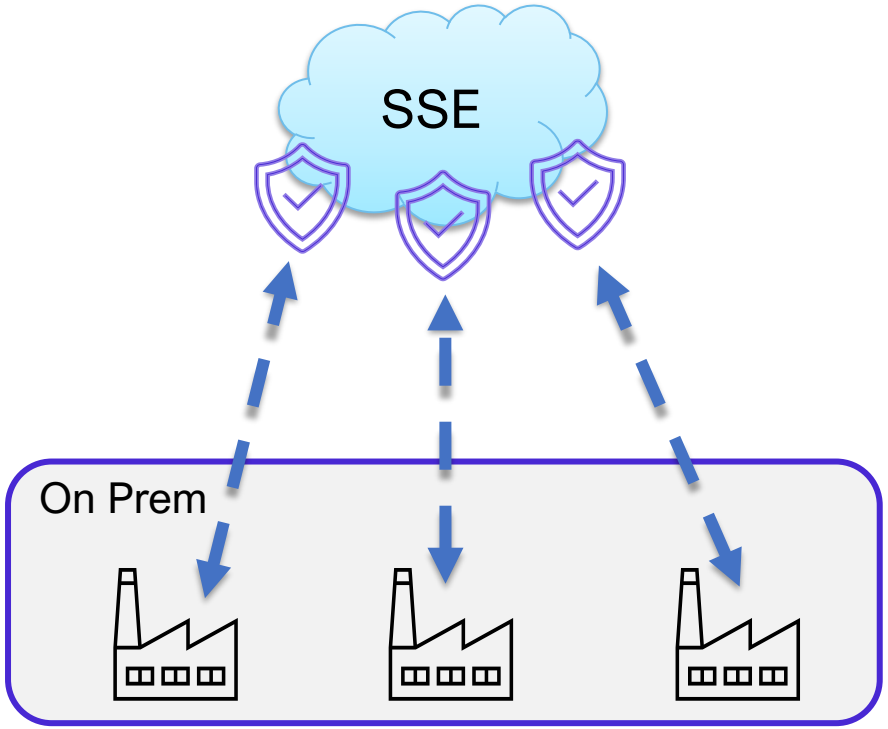
(Recorded Future, 2025)

Phase 1 Preparation → Phase 2 Intrusion → Phase 3 Breach

Phase 2: Defender's Perspective

Installation

- ✓ SWG with Malware Sandboxing
- ✓ Applying Zero Trust to Non-humans
- ✓ Integrations with Endpoint Monitoring and Protection tools



Phase 1 Preparation → Phase 2 Intrusion → Phase 3 Breach

Phase 3: Attacker's Perspective

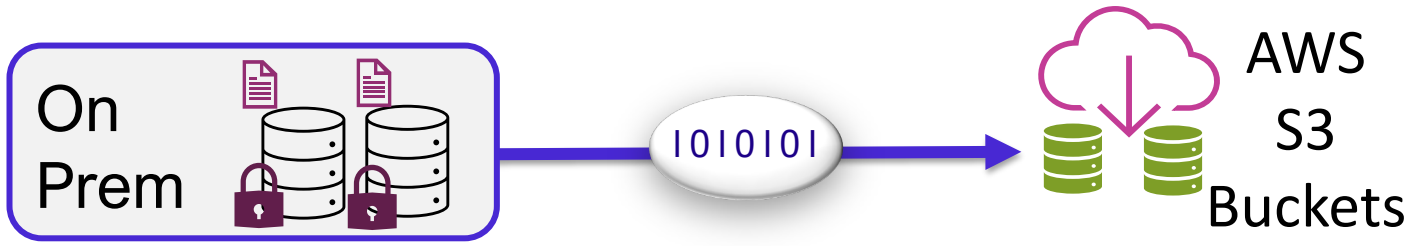
C2 & Actions on Objectives

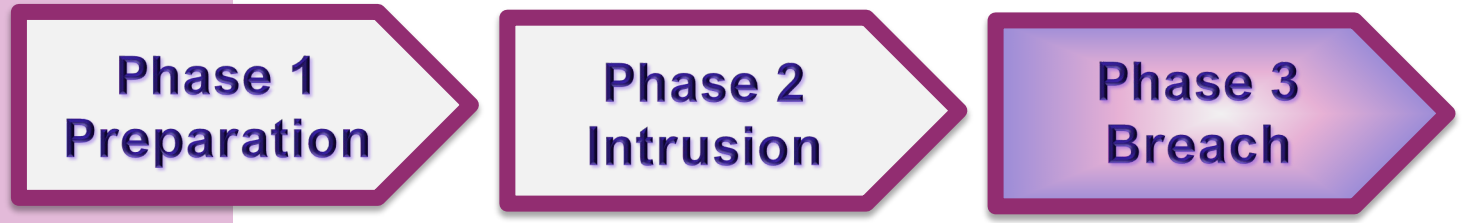
Command and Control (C2):

- Instructions and Payloads sent for exfiltration to S3 buckets
- Instructions and payload sent to encrypt and ransom

Actions on Objectives:

- Data exfiltration completed
- Encrypt and ransom





Phase 3: Defender's Perspective

C2 & Actions on Objectives

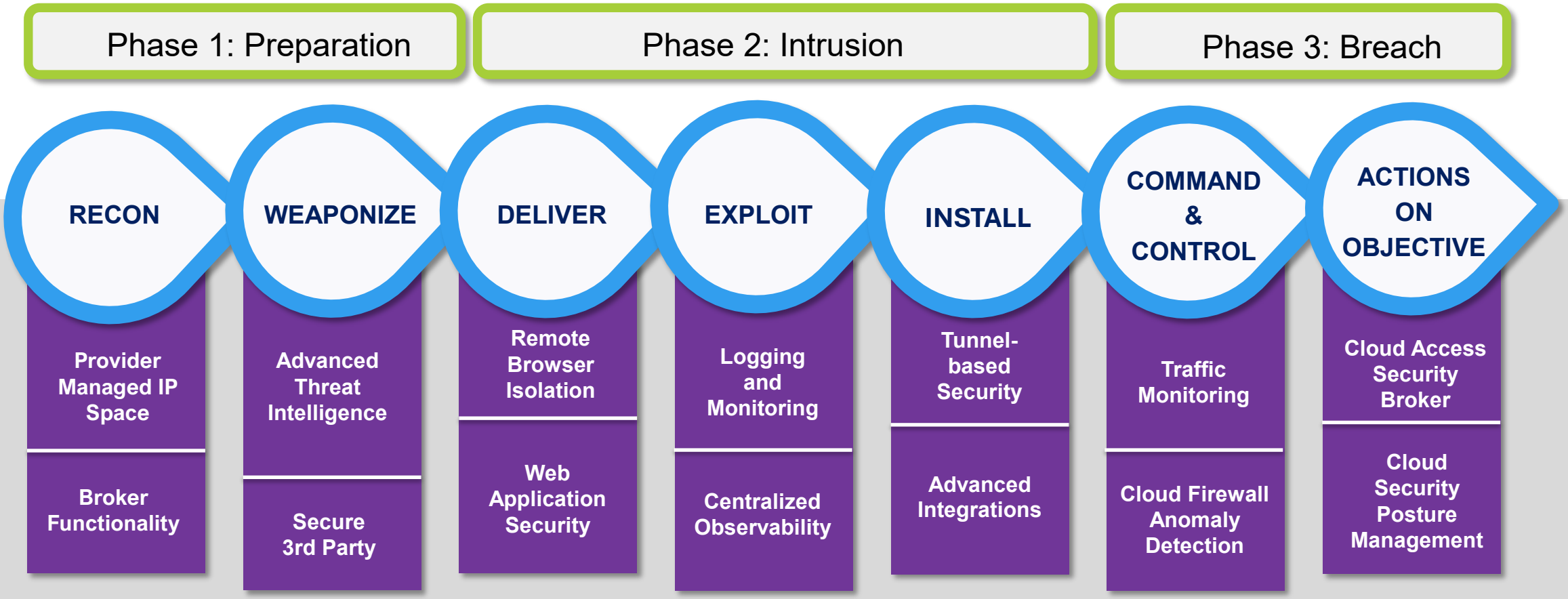
Command and Control (C2):

- ✓ Traffic Decryption at Scale
- ✓ Cloud Firewall
- ✓ Anomaly Detection

Actions on Objectives:

- ✓ Cloud Access Security Broker (CASB)
  - ✓ Data Loss Prevention (DLP)
- ✓ Cloud Security Posture Management
  - ✓ Posture Checking
  - ✓ Alerting
  - ✓ Auditing

The Cyber Kill Chain: Defender's View



From a **single**, **cloud delivered**, **zero trust**, policy enforcement point

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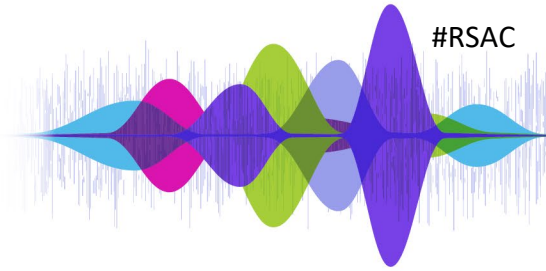
Different Approaches to SSE/SASE Architecture

Network, Proxy, Multi-Vendor, Single Vendor, Unified

Many Voices.
One Community.

Network vs. Proxy ZTNA

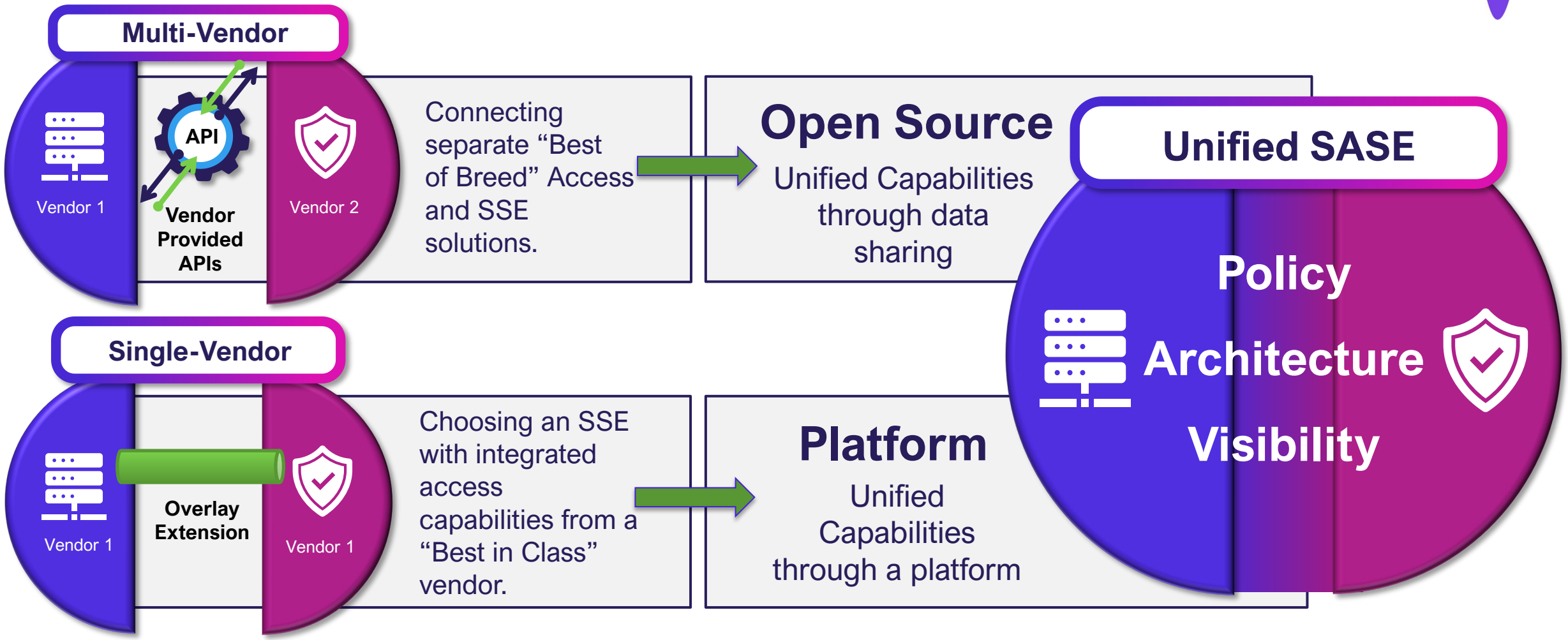


Network	Proxy
Tunnel Based Configuration	App Based Configuration
Dedicated Infrastructure	Shared Infrastructure
Inbound And Outbound Connectivity	Outbound Only Connectivity
Any App Any Port Support	App Support Considerations
Flexible Traffic Engineering	Proxy Managed Traffic
Lateral Movement Risk	Improper Usage Risk

VS

*Today's modern architecture is moving towards a full hybrid approach.

SASE Models & Vision



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Conclusion

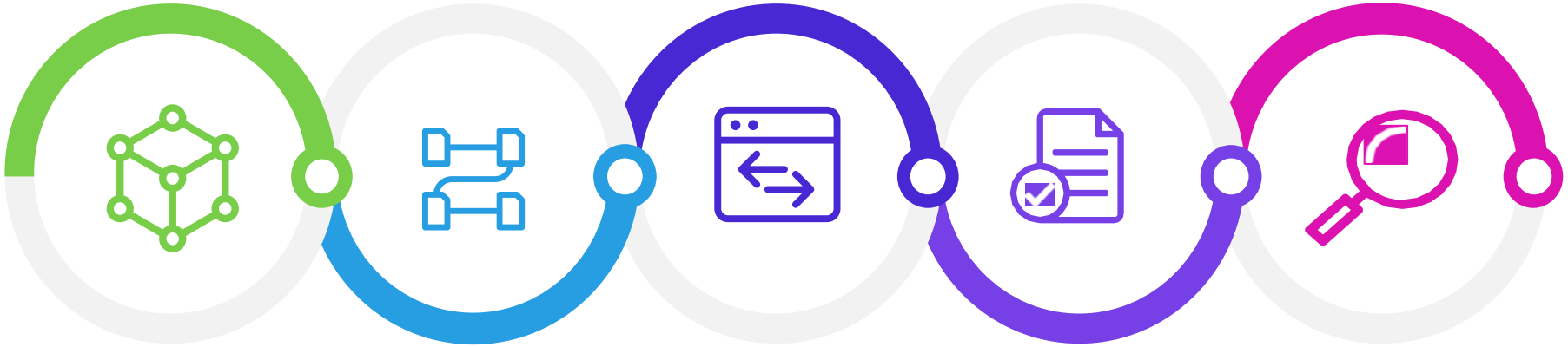
Why Frameworks Matter

Many Voices.
One Community.

Zero Trust Tactics: A Phased Approach

Map
Transaction Flows

Create Zero Trust
Policy



Define Protect
Surface

Build a Zero Trust
Architecture

Monitor and Maintain
the Environment

Apply What You Have Learned Today

Next Week

- Begin to identify protect surfaces
- Create common vocabulary
- Identify tools for Red Teaming
- Chose a framework to map business outcomes

3 Month Goal

- Have a roadmap for use-case adoption covering tactical and strategic milestones
- Begin evaluating security solutions that meet your requirements to transition and transform

6 Months & Beyond

- Begin implementing the candidate solution monitoring progress of each use-case aligned to the roadmap
- Ensure integrations map to unified observability strategies
- Expand strategy to additional protect surfaces

Regularly scheduled meetings for Governance Council to assess gaps

Tabletop/Cyber Range exercises, board education, policy reviews, use case mapping

Foundational Elements Throughout

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Q&A

Reach out to us at:

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https://www.wwt.com/profile/lucas-skipper/bio

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