



# Securing IP on Cloud

By

Satish Govindappa,  
Sunderarajan Mohan and  
Robert Lefferts

July, 12<sup>th</sup> 2023



# Overview

## Introduction

(Importance of securing IP)

- Synopsys IP portfolio
- What we secure ?
- Importance of IP in chip design.
- IP Protection and Exclusivity
- IP licensing and revenue generation
- IP as Strategic Asset

## Threats

(List of threats and resulting risks)

- Counterfeit IP
- Reverse Engineering
- Supply Chain Attacks
- Design infiltration
- Unauthorized Access
- Data Breaches
- Insider Threats
- Compliance and Legal concerns

## Challenges

(What we need to solve the problem)

- Shared responsibility model
- Data security and Privacy
- Vendor Lock-in
- Data Governance and Compliance
- Trust and Control

## Strategy

(Find the right path)

- Comprehensive IP Asset Management
- Strong legal framework and IPR protection
- Robust cybersecurity measures
- Supply Chain Integrity

## Solution

(How did we do)

- Solution 1: Data Layer : Tri-secrets
- Introduction
- Problem Statement
- Solution
- Solution 2 : Infra Layer : Domain-Protect
- Introduction
- Problem Statement
- Solution
- Solution 3 : Application Layer
- Introduction
- Problem Statement
- Solution

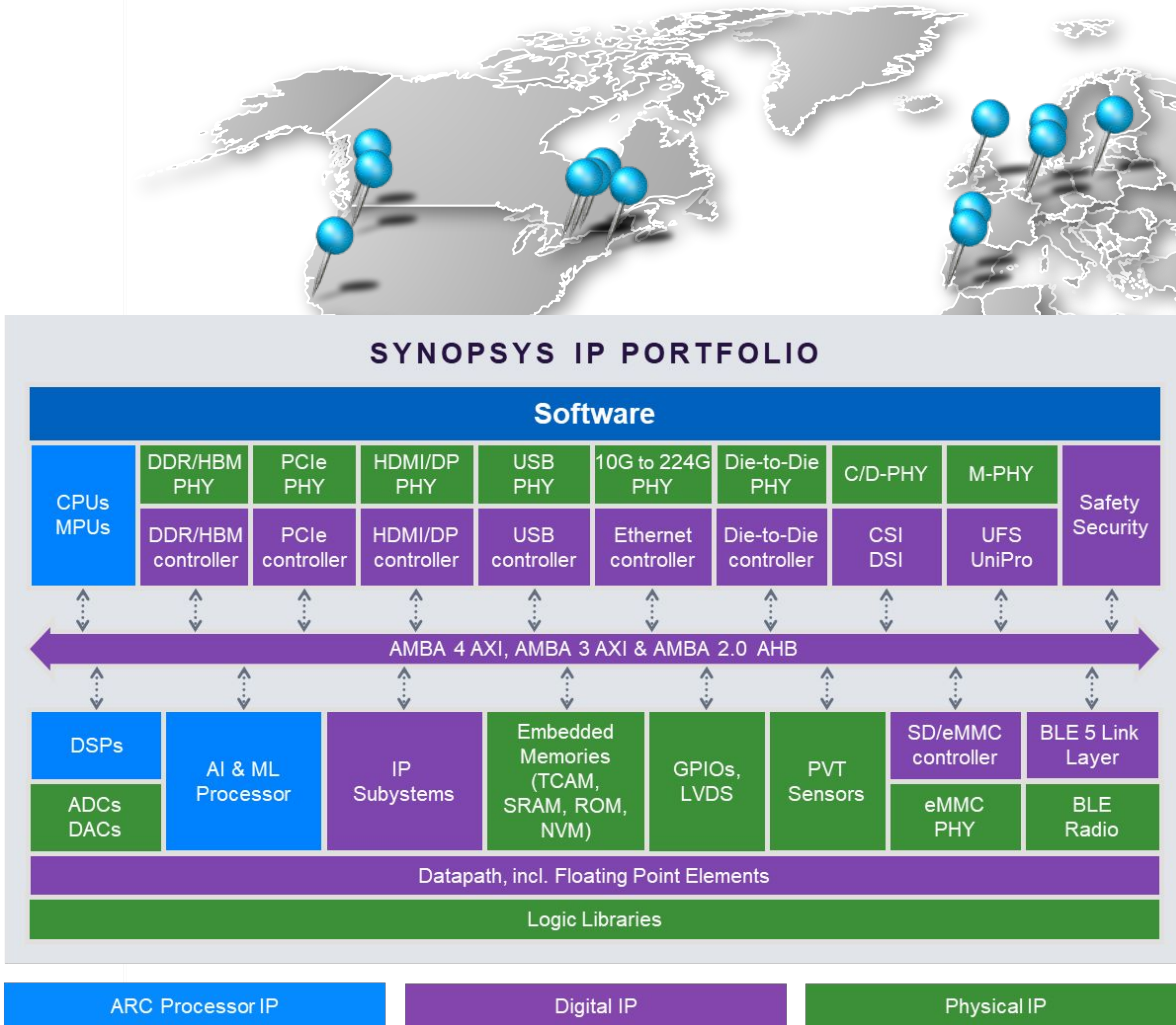
## Recommendation

(What is our recommended and why)

- Secure cloud adoption – 7 pillars of success.
- Protecting Intellectual Property – A shared responsibility
- Investing in comprehensive IP protection strategy



# Synopsys IP Portfolio



## Broad Portfolio

Physical IP, Digital IP and ARC  
Process IP  
>6,000 engineers  
> 20 sites  
> Parallel work on over 50  
processes

# What we secure ?

## Our Assets



### On Premise

- More than 200,000 CPUs
- More than 10 PB storage



### On Cloud

- Peak use up to 100,000 CPUs
- Multiple cloud vendors
- Automations to leverage low-cost spot cpu's

## Our Controls?

- Separate clouds for separate foundries
- Access management
  - NDAs required
  - Limited-time access duration – manager approval
  - Foundry pre-approval for sensitive technologies
  - Comprehensive security training
  - No compute-farm access without passing security quizzes



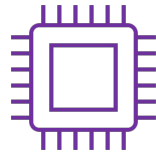
- Encryption of foundry technology
- Secure cluster that prevent unauthorized access





# Importance of securing IP

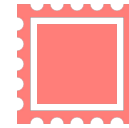
## Introduction



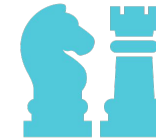
IP in Chip design



IP protection  
and Exclusivity



IP licensing



IP as Strategic Asset



Competitive Edge



Revenue Generation




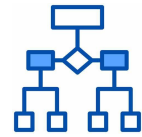

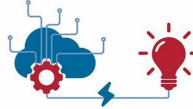

All images are by Unknown Author is licensed under creative commons

## Details

- What is IP and why protect
- Inventions and designs
- Acknowledge hard work
- Research development and Investment
- Contribution to company success
- Leverage secure partnerships
- Value of IP Assets
- IP licensing is a win win situation



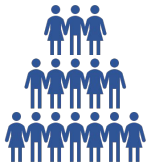




# Threats

Threats	 Supply chain attacks	 Reverse Engineering	 Insider threat	 Design Infiltration
	 Unauthorized Access	 Data Breaches	 Compliance and legal concerns	

Details	<ul style="list-style-type: none"><li>• Unauthorized access by malicious actors</li><li>• Inadequate misconfigurations</li><li>• Black market and unethical competitors</li><li>• Reputation damage</li><li>• Financial loss</li></ul>	<ul style="list-style-type: none"><li>• Lack of control and transparency</li></ul>
---------	--	--



# Challenges

Challenges	 Shared responsibility model	 Data security and Privacy	 Data sovereignty and Jurisdiction	 Compliance
	 Performance and Latency			

Details	<ul style="list-style-type: none"><li>• Ownership of Infrastructure and data</li><li>• Data Migration</li><li>• Law of the land</li><li>• Different industry, different obligation</li></ul>	<ul style="list-style-type: none"><li>• Internet connectivity and rapid data transfer</li><li>• Performance requirements of chip design workflows</li></ul>
---------	--	---



# Strategy

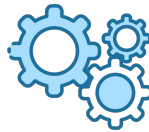
## Strategy

Find the right path

- IP Asset Classification and Risk Assessments
- Cloud Provider Evaluation and Selection
- Multilayered Security Controls
- Ongoing monitoring and Incident response
- Cloud security posture management
- Application security posture management
- Data security
- Host security
- Education and training

## Benefits

What are the benefits



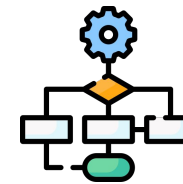
Enhanced focus and  
resource allocation



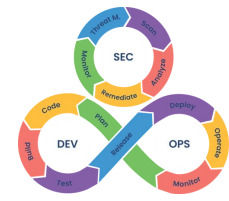
Strong foundation  
for Security



Comprehensive protection



Proactive threat  
management



Strengthening Supply Chain

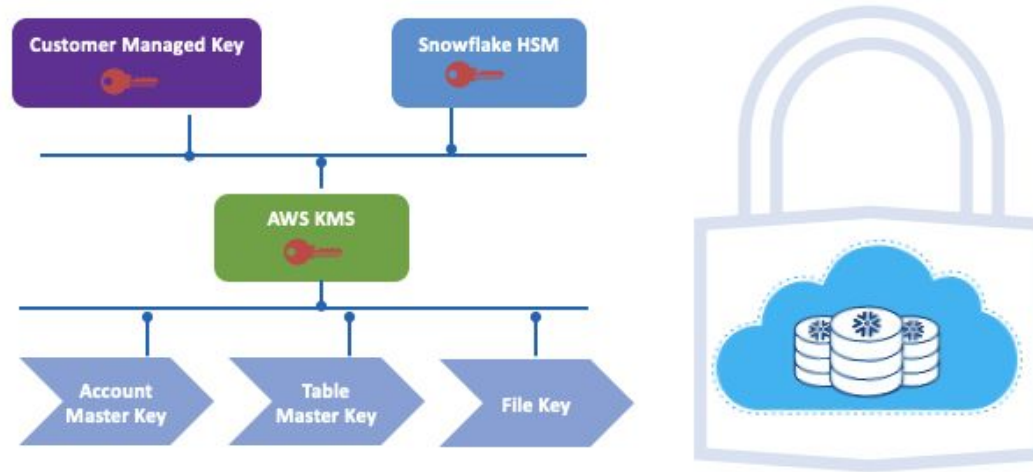




# Solution 1 : IP protection at data layer

## Solution

How did we do ?



## Benefits

What are the benefits



Data ownership



Protection against  
data breach



Enhanced Confidentiality  
of IP Assets



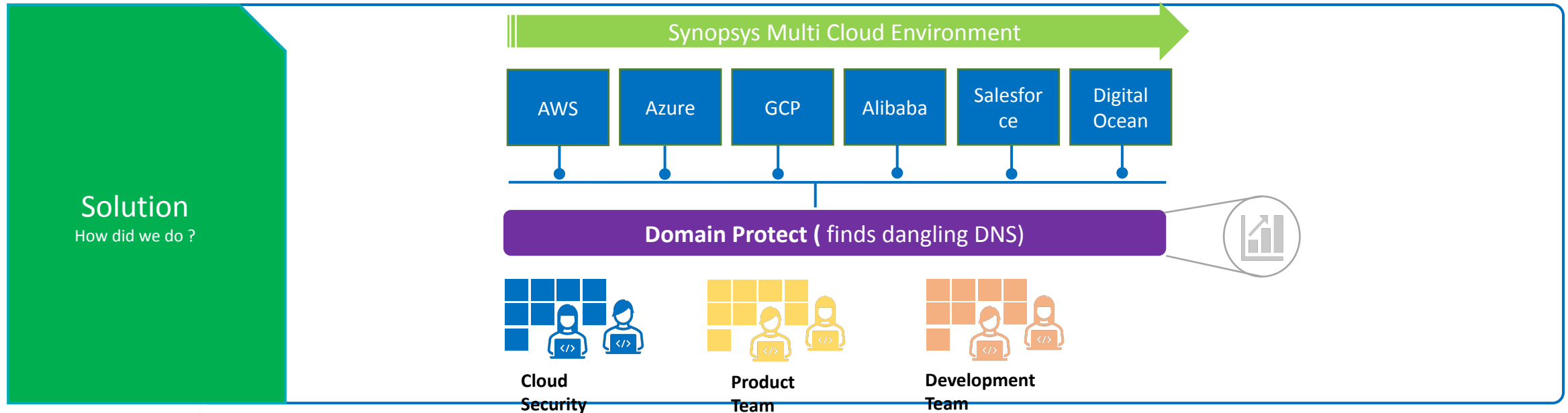
Stake holder  
confidence



Compliance



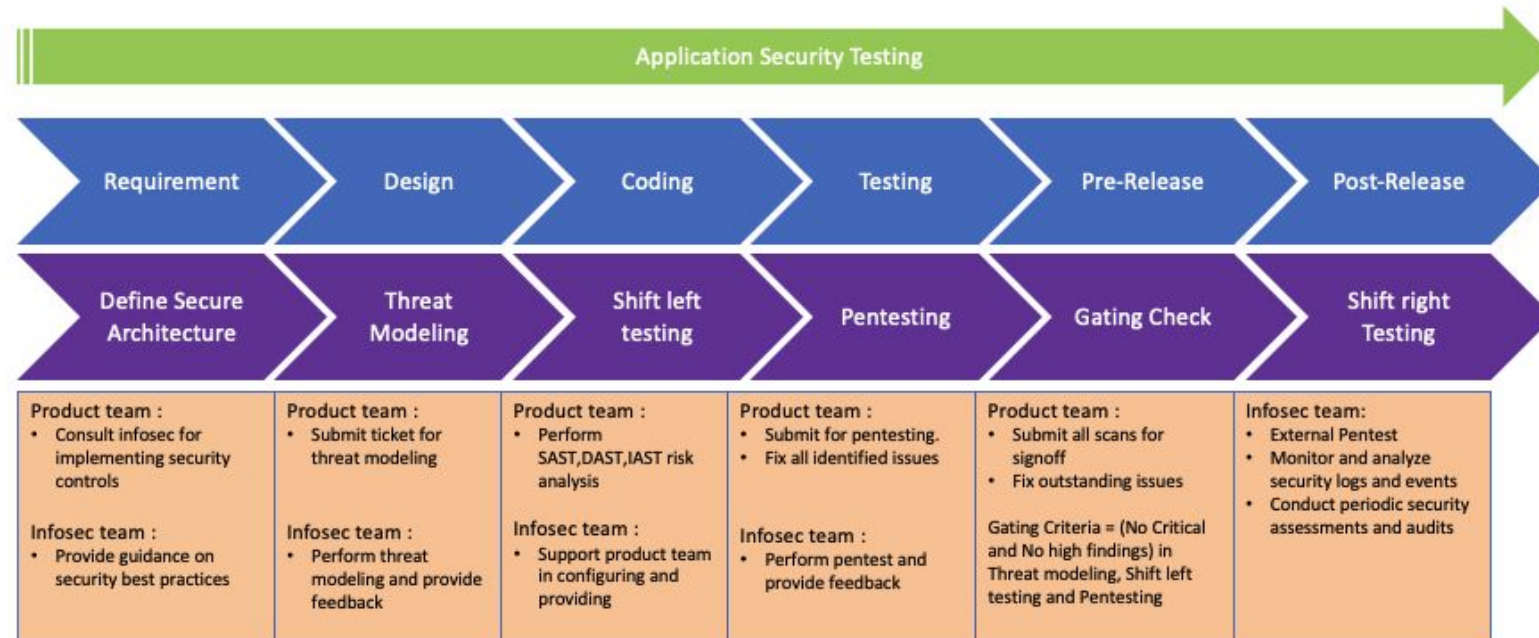
# Solution 2 : IP protection by host security



# Solution 3 : IP protection at application layer

## Solution

How did we do ?



## Benefits

What are the benefits



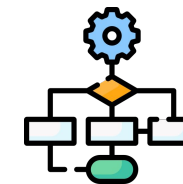
Protection against attacks



Build Digital Trust



Compliance with Regulations

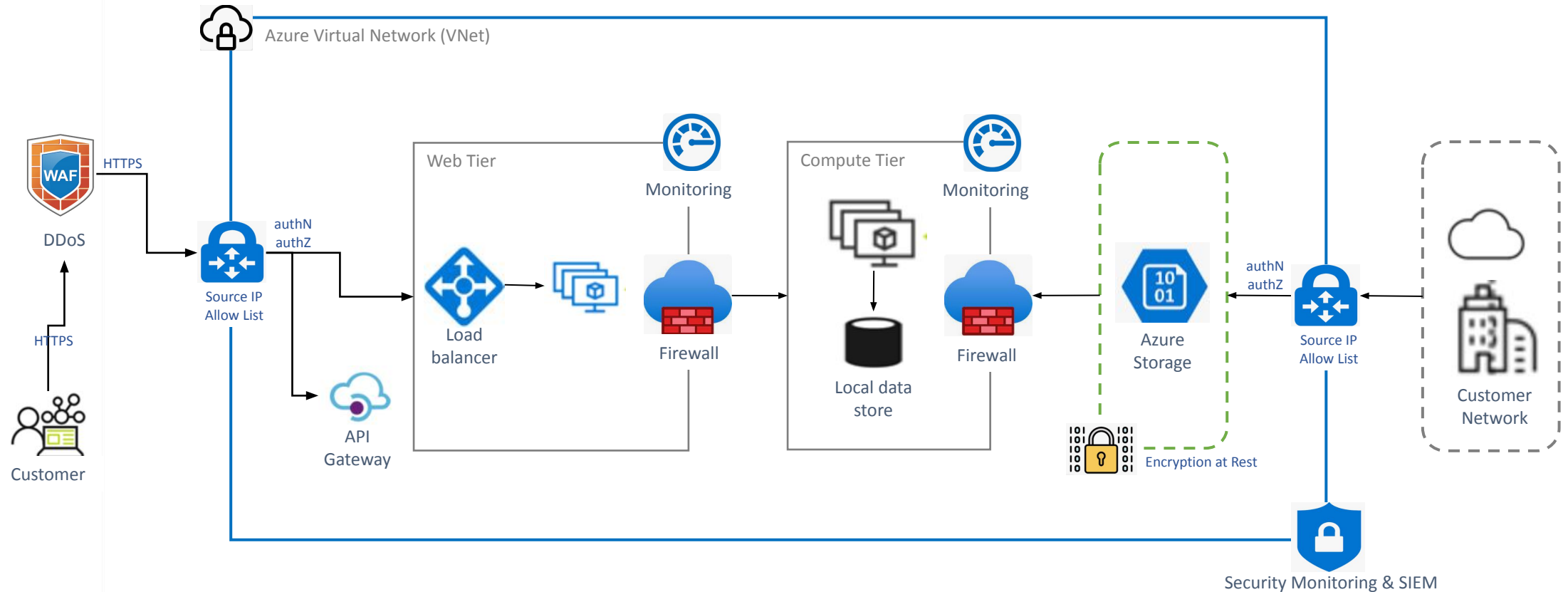


Business Continuity

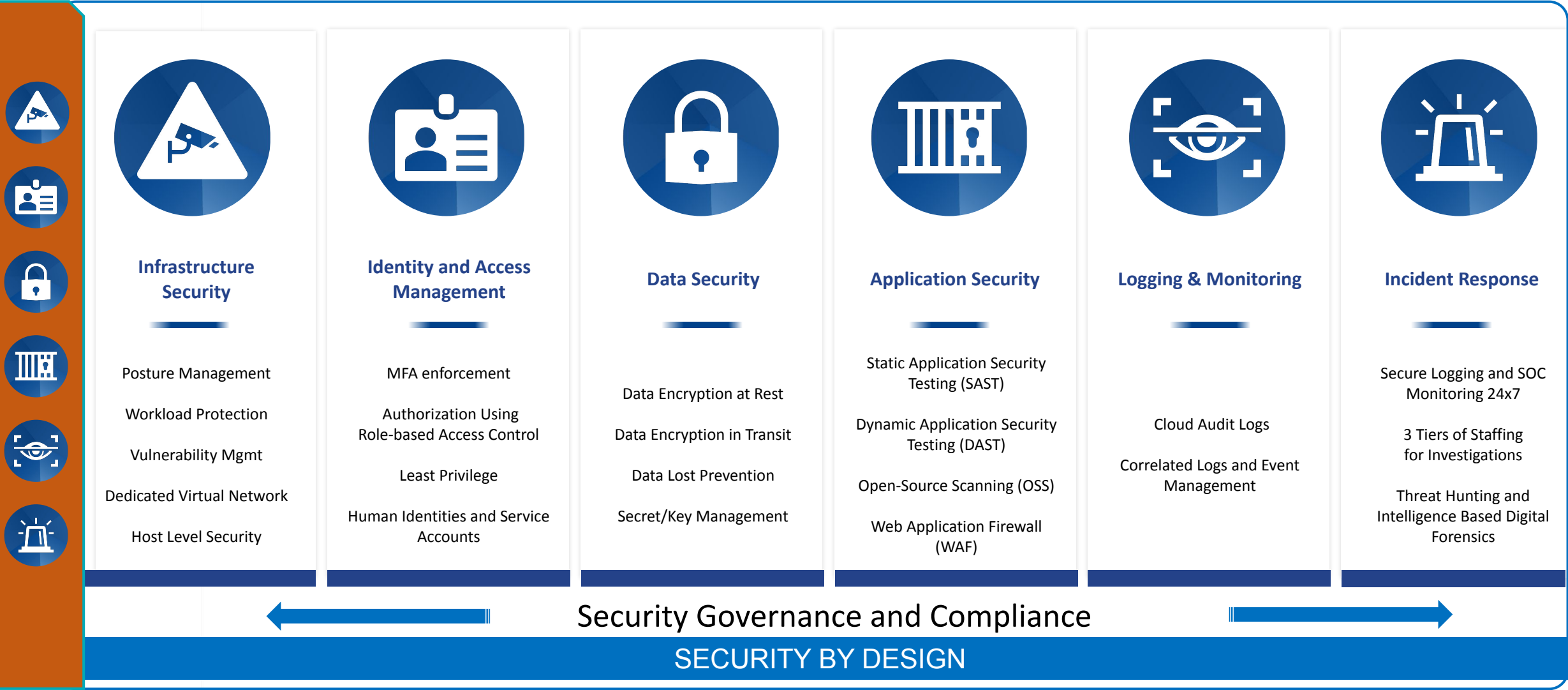


Secure Development Culture

# Solution 3 : IP protection at application layer



# Secure cloud adoption – 7 Pillars for success







# Thank You

**JULY 9-13, 2023**

**MOSCONE WEST CENTER  
SAN FRANCISCO, CA, USA**

