



aruba
a Hewlett Packard
Enterprise company

SECURE FROM THE INSIDE

JungMoo Park (박정무)
Aruba Korea Category Manager

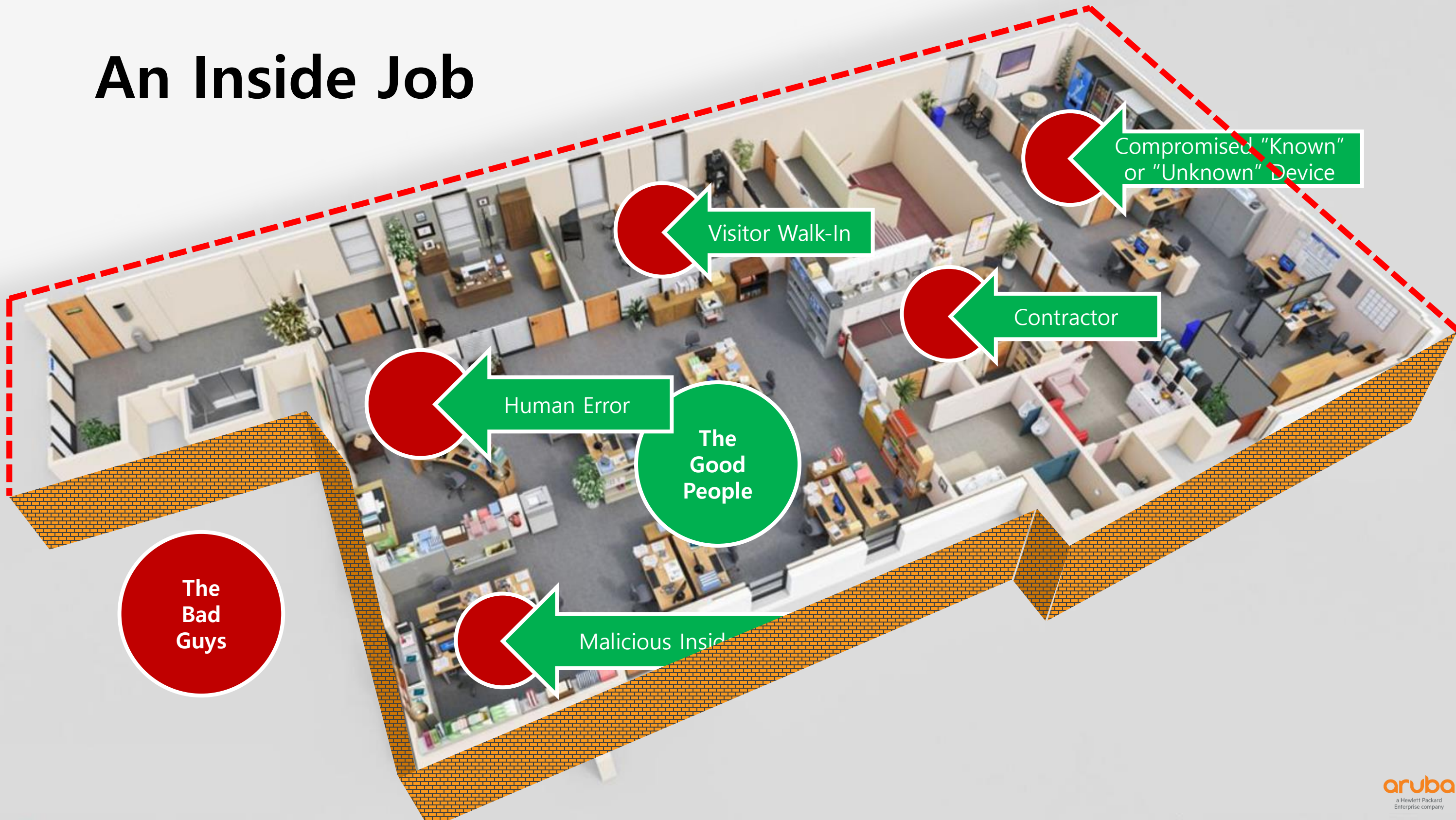
"Stranger Danger"



The Good People

The Bad Guys

An Inside Job



The Bad Guys

Human Error

The Good People

Malicious Insider

Visitor Walk-In

Contractor

Compromised "Known" or "Unknown" Device

VANISHING PERIMETERS



모호한
경계

80%

Of advanced attacks
use valid credentials

복잡한
공격방식

8 Weeks

Average gestation
period of typical attacks

취약한
IoT

84%

Of those who've deployed
IoT have been breached

SECURING THE EDGE

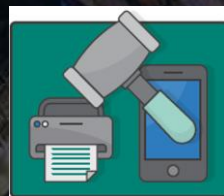
Our project: Insider Threat **Detection** and **Protection**

Identify



네트워크에 연결된
사용자 및 단말을
확인/프로파일링 후에
인증 실시

Protect



사용자, 단말, 연결
방식과 관계 없이
정확한 액세스 정책
적용

Detect



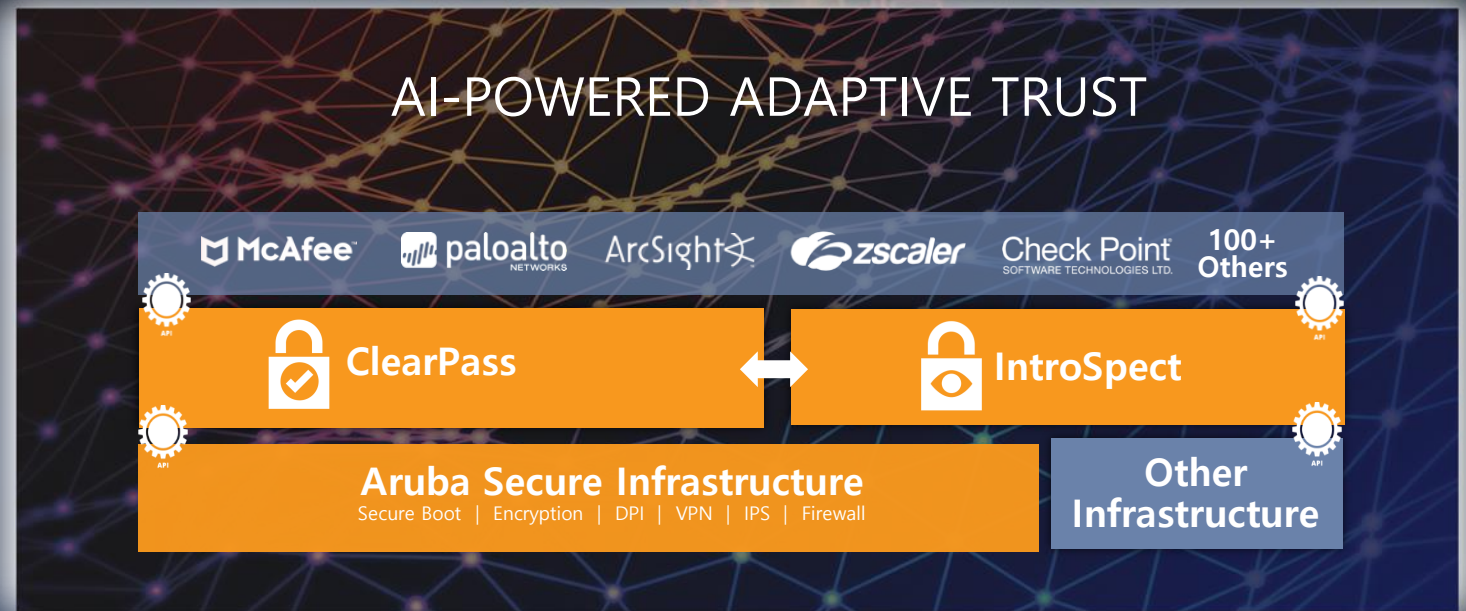
숨겨진 위협과 이미
인프라 내부의 침입한
공격을 발견 및 확인

Respond



외부 3rd party
시스템까지 확장되는
Dynamic 정책 제어 및
위험 제거

ARUBA 360 SECURE FABRIC



정책 자동화

지속적 모니터링

CONTROLLER/
GATEWAY



Dynamic
Segmentation



CLEARPASS

UEBA

INTROSPECT



TODAY'S TALK TRACK AND DEMOS

Securing from the Inside and at the Edge

Wi-Fi 6: Amazing Edge Experience

WPA3: New Standard For Wi-Fi Security

Secure Network Edge with Dynamic Segmentation

UEBA: Beyond the Hype Of Machine Learning

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WHAT ARE WE ANNOUNCING?

특별한 **EDGE EXPERINENCE**을
위한 스마트 혁신



802.11ax
액세스 포인트

WPA3 &
Wi-Fi Enhanced Open



802.11ax-Ready
PoE 스위치

802.3bt



NetInsight
AI 기반의
자동화 및 성능 개선

Green AP

ARUBA WI-FI 6 (802.11AX)

EXPERIENCE THE DIFFERENCE.

WiFi
WPA3



Bluetooth 5 및
Zigbee 내장

510 Series
802.11ax



Aruba 2930M
Switch 802.3bt

Wi-Fi 성능 향상
(최대 단말당
4배 이상
Throughput)

상시 연결 보장

최첨단
Wi-Fi Security

IoT를 위한
칩셋 내장

지능형 전력
관리

On-prem &
클라우드 관리

EXTENDING CONNECTIVITY FOR IOT, WEARABLES AND TAGS



```
"sensors": {  
  "battery": 95,  
  "temperatureC": 21.6,  
  "humidity": 55,  
  "voltage": 2.95,  
  "illumination": 450,  
  "CO": 300,  
  "motion": false,  
  "accelerometer": {  
    "x": 0.34,  
    "y": 0.001,  
    "z": -1.002  
  },  
  "CO2": 10000,  
  "VOC": 300,  
  "resistance": 10.05,  
  "pressure": 1025,  
  "alarm": ["smoke", "fire"],  
  "contact": [  
    {  
      "id": 0,  
      "state": "open"  
    }  
  ]  
}
```

IT STARTS WITH HEALTHY RF

ClientMatch

Band Steering
Client Steering
Load Balancing

aruba

AirMatch

Channel Assignment
Bandwidth Adjustment
Power Adjustment

OPTIMIZE USER EXPERIENCE

ADAPTIVE

CONTINUOUS LEARNING | CLOSED LOOP CONTROL



NETINSIGHT



WI-FI GOES
GREEN

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WI-FI SECURITY CHALLENGES

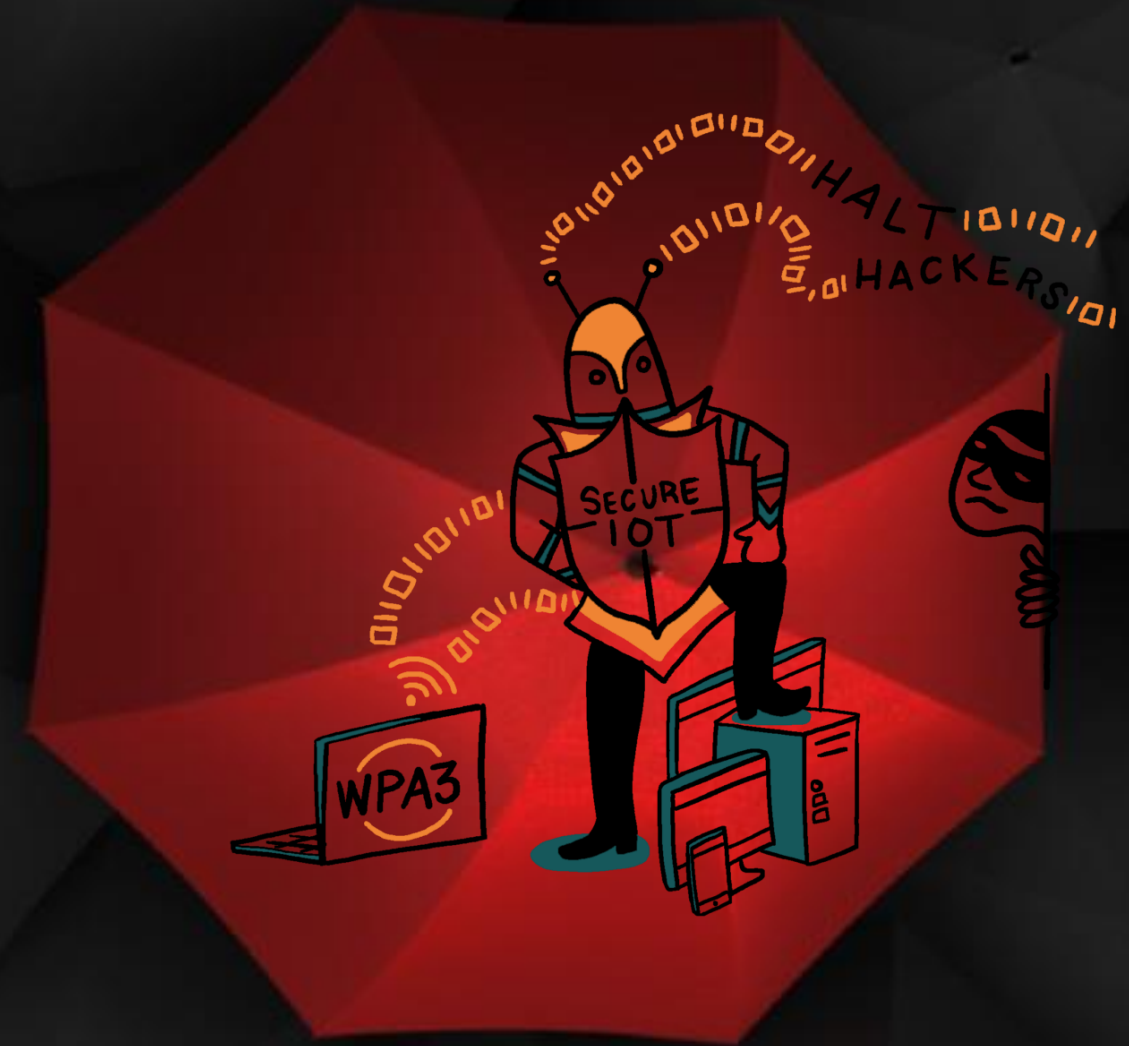
15년 이상 된 취약하고 어려운
Wi-Fi 보안 **WPA2**

Solution: WPA3

"WPA3 closes these gaps and evolves Wi-Fi security for the next decade!" Dan Harkins

WPA3-Personal

**STRONG SECURITY
FROM WEAK PASSWORDS**



WPA2-PSK is replaced by **SAE**
(802.11-2016, section 12.4)



WPA3-Enterprise SUITE B/CNSA

네트워크 전체에
보안 프로토콜을 일관되게 적용

192bit 암호화 알고리즘으로
민감한 데이터를 강력하게 보호*
(RADIUS서버의 EAP 서버 구성요소 업데이트 필요)



Enhanced Open: NO MORE CLEARTEXT

Opportunistic Wireless Encryption (OWE)

OWE는 사용자에게 미 인증 데이터 암호화를 제공



WiFi
WPA3



WPA3: ENHANCED SECURITY CERTIFICATION

PMF is mandatory for all of WPA3, including Enhanced Open (OWE)
Certificate chain validation is mandatory for WPA3-Enterprise

Provisioning WLAN in AOS 8.4 with WPA3 Security

New WLAN

General VLANs Security Access

More Secure

Enterprise

Personal

Open

Less Secure

Key management:

- ✓ WPA-3 Enterprise
- WPA3-Enterprise (Suite B)
- WPA-2 Enterprise
- WPA Enterprise

Auth servers:

+

Reauth interval: 1440 min. ▾

Machine authentication:

Blacklisting:

New WLAN

General VLANs Security Access

More Secure

Enterprise

Personal

Open

Less Secure

Key management:

- ✓ WPA-3 Personal
- WPA-2 Personal
- WPA2-mPSK
- WPA Personal

Passphrase:

Retype:

MAC authentication: Disabled ▾

Blacklisting: Disabled ▾

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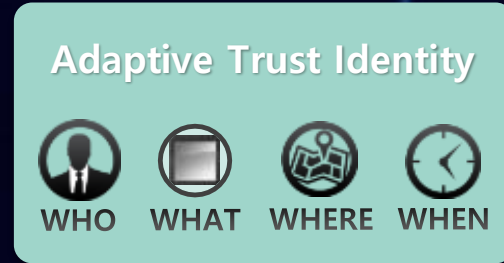
CONTEXT-AWARE, NETWORK-DRIVEN **SECURE ACCESS**



Security and Usability Coordination



Who: **Bob**
Group: **Faculty**
Device: **Personal iPad**
Location: **Room 104**
Time: **9am, Monday**
Compliance: **Healthy**
Mac Address: **X**
IP Address: **Y**



ClearPass



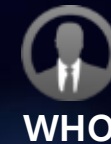
AD/LDAP



WHO



EMM/MDM



WHO



WHAT



WHERE



WHEN



Update Enforcement Device (LAN/WAN/VPN)



Update Firewall



Update Web Proxy / Filter



Logon to Applications (SSO)



Update EMM/MDM

DYNAMIC SEGMENTATION



ClearPass

사용자 및 단말



Corp



BYOD



IOT



Guest

액세스 스위치



액세스 포인트



모빌리티 컨트롤러 클러스터

애플리케이션 및 도착지

Office 365



Academic Records



n0tma1ware .biz



AirGroup



DELIVERED USING DYNAMIC SEGMENTATION



POLICY DEFINITION POINT



POLICY ENFORCEMENT POINT

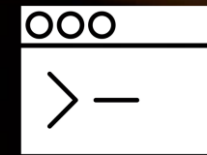
DYNAMIC SEGMENTATION USE CASES



네트워크 방식과 관계 없이
통일된 경험 제공



애플리케이션
맞춤형 정책 적용



동적 및 프로그래밍 방식의
보안 작업

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IntroSpect Addresses Two Key Security Challenges



내부에서 발생하는
공격과 위협적인 행동

외부 공격자의 주 목표는 합법적인 자격증명을
이용하여 공격을 진행하는 것



보안 팀의
효율성과 효과성

이러한 위반 건수의 80%는
탐지하는데 몇 개월 이상이 걸릴 수
있음

Source: Verizon 2017 Data Breach Investigations Report

AI-POWERED SECURITY

내부 네트워크 환경을 위한 머신러닝 엔진



Aruba IntroSpect

사용자와 단말의 행동을 머신러닝을 이용하여 학습 및 분석하여 기업의 보안을 강화



가시성



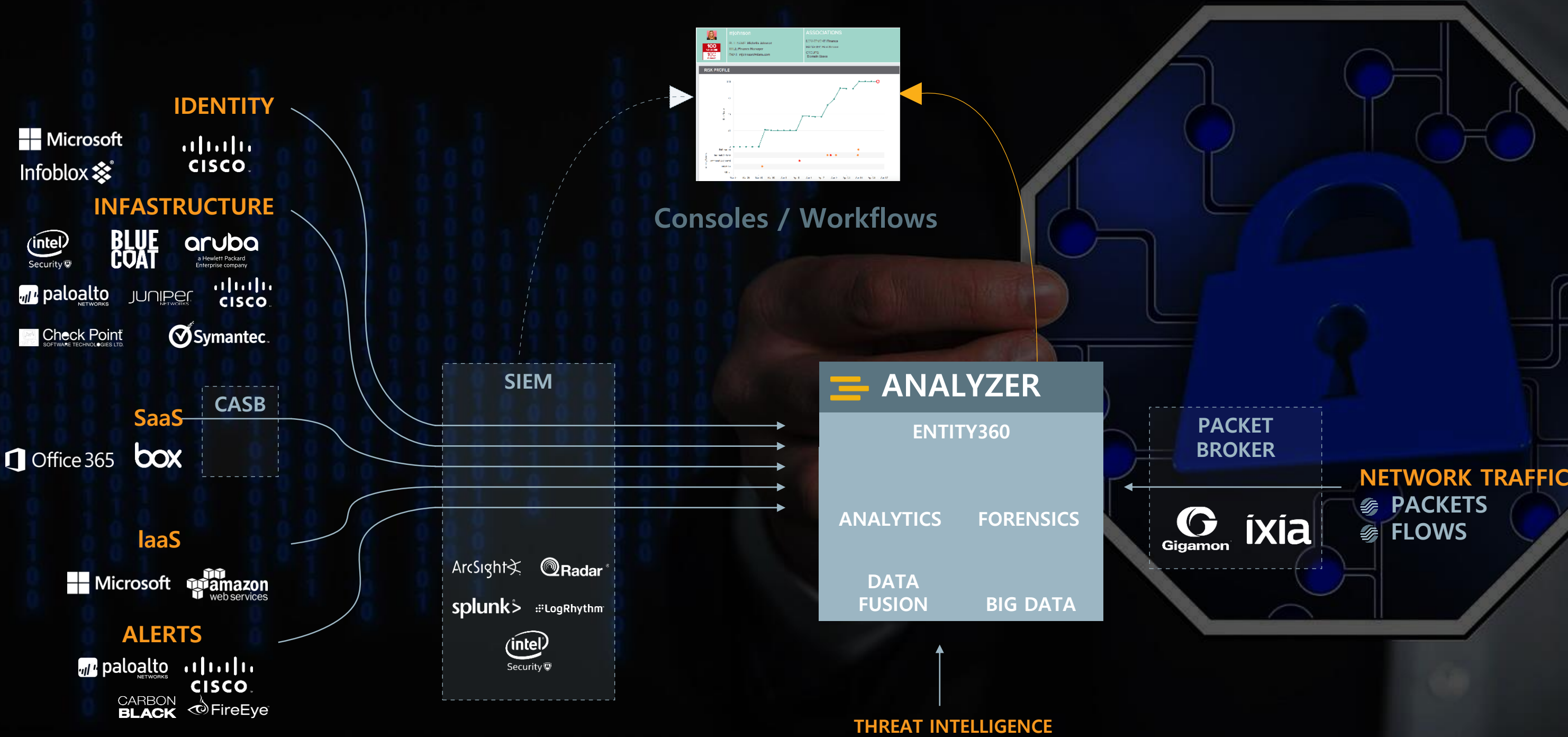
모니터링



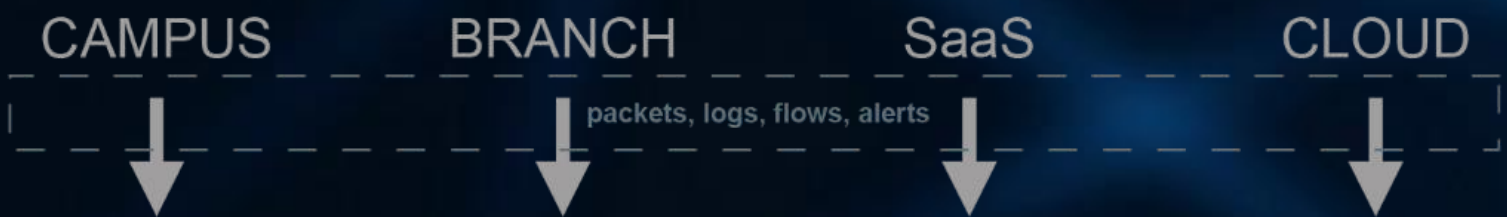
정책 적용

CLEARPASS
POLICY MANAGER

SOLUTION - AT A GLANCE



INTROSPECT ADVANCED ANALYTICS AND FORENSICS



- Packets
- Flows
- Logs
- Alerts



MACHINE LEARNING
SUPERVISED
UNSUPERVISED



ENTITY360

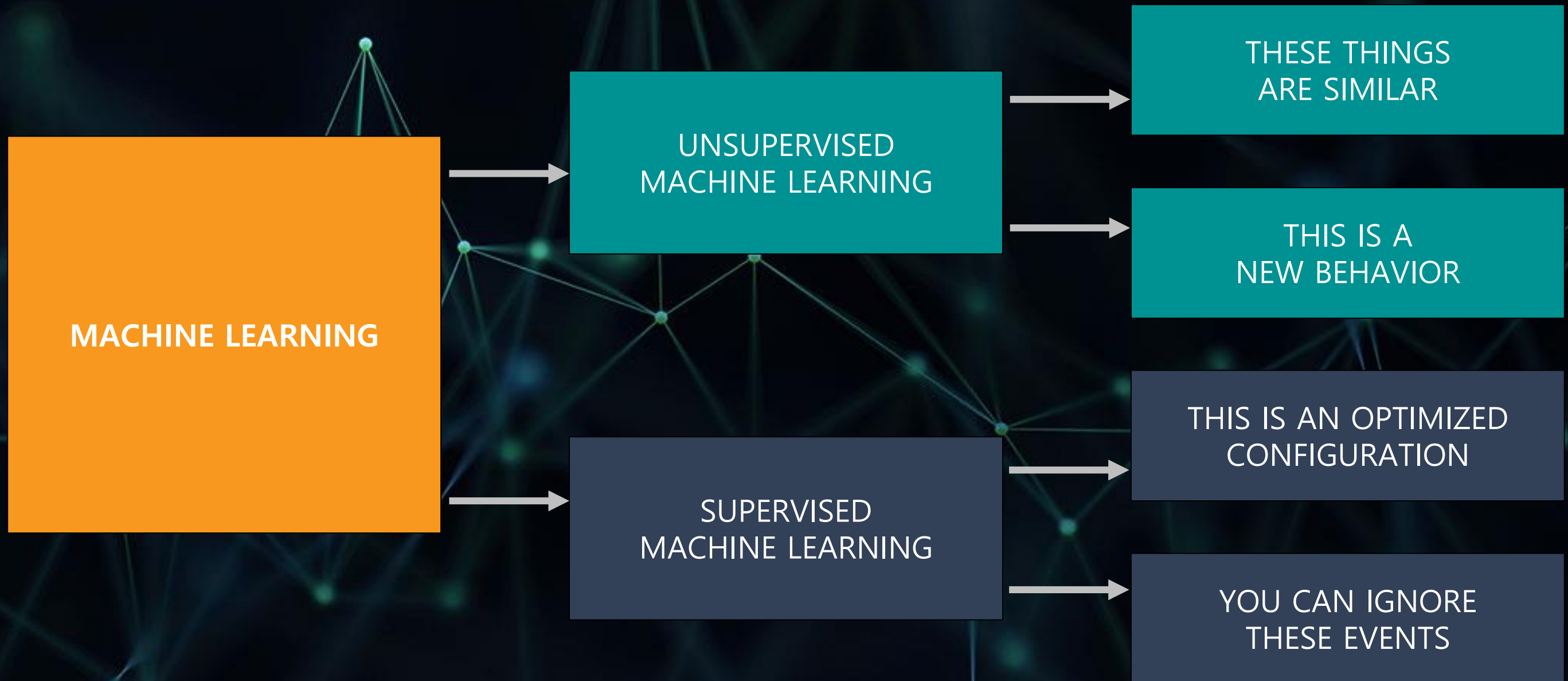
SAM FULLER

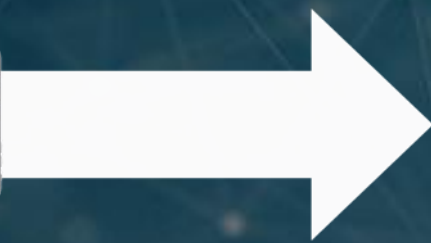
- 3 HOSTS
- 22 IPs (+142*)
- 95 LOGONS
- 120k SESSIONS

100 RISK SCORE

time

Machine Learning

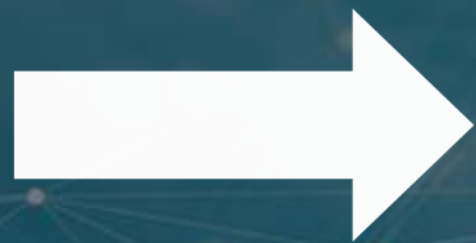
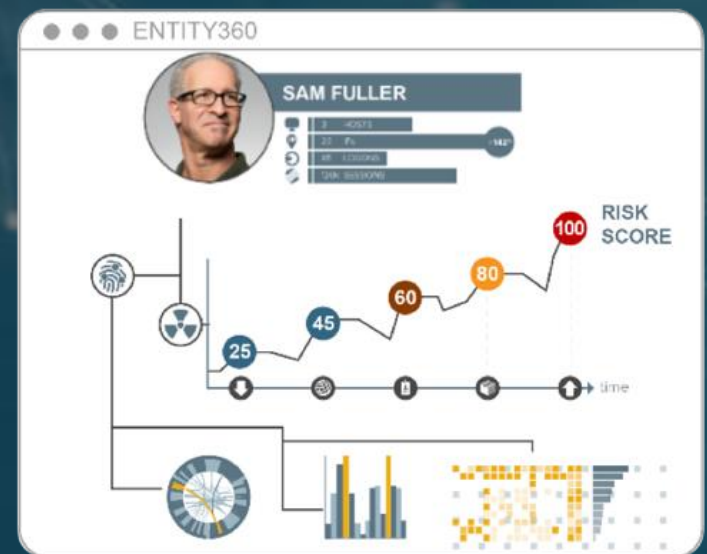




ANALYZER

ENTITY 360

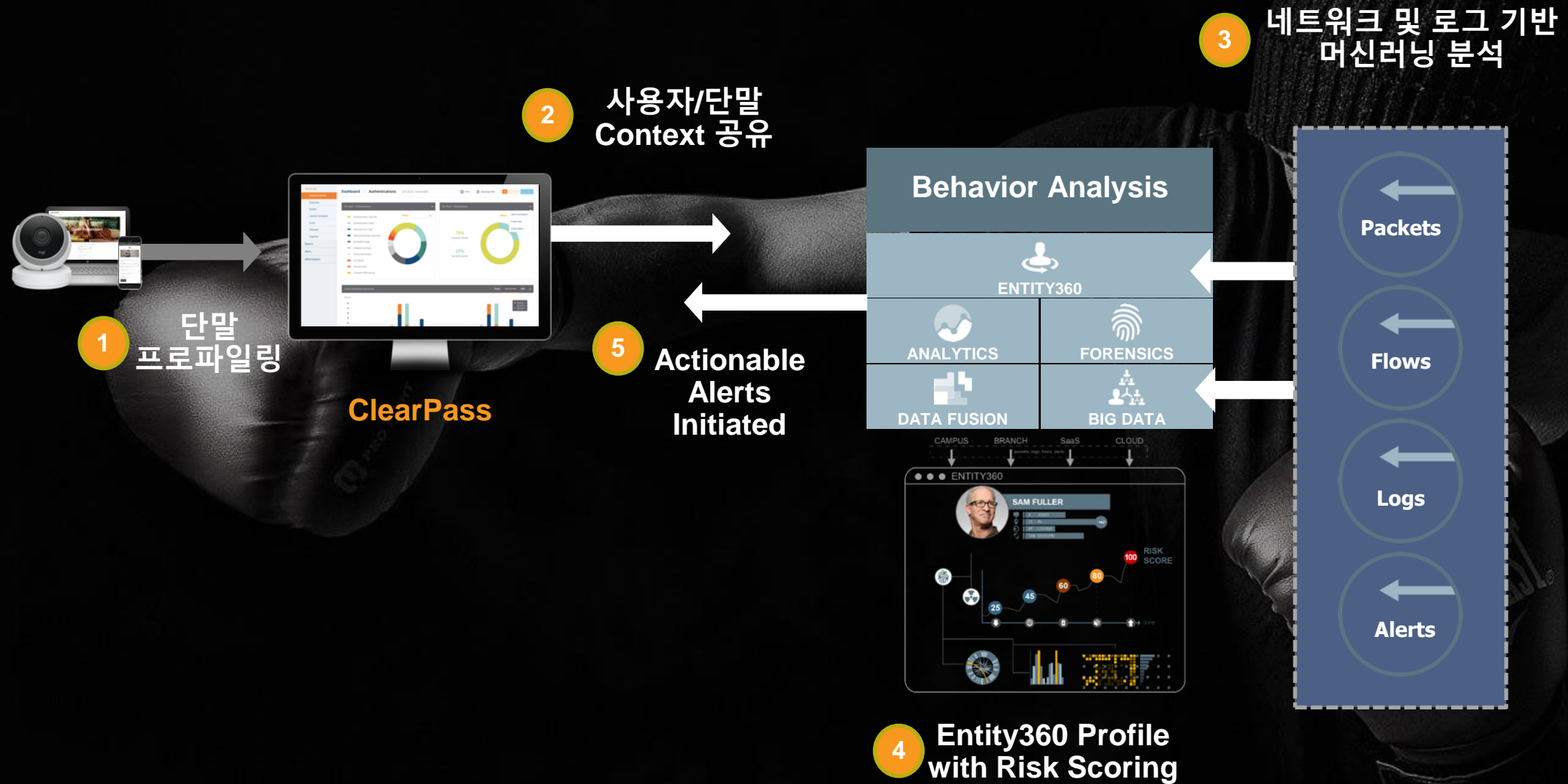
- ANALYTICS
- FORENSICS
- DATA FUSION
- BIG DATA



96
RISK SCORE

+86
CHANGE

ClearPass + IntroSpect = 360 Protection





TODAY'S EVOLVING SECURITY CHALLENGES

COMPLETE SOFTWARE-DEFINED CAMPUS

FOR SECURE MOBILE, CLOUD, AND IOT

빠르게
문제 원인 파악



네트워크 운영 및 통합 제어



현 상황에 대한
즉각적인 가시화

액세스

SLA 제공



자산

단말

코어



Aruba 8400

WHY CUSTOMERS CHOOSE ARUBA

“Customer First, Customer Last” 문화



신뢰 할 수 있는
혁신자
변화를 두려워 않는 마인드



수천개의
파트너

Mobile-First Architecture



어떤 위치/환경과 관계
없는 단일 아키텍처
제공



개방형,
멀티벤더

포괄적인 네트워킹 포트폴리오



Market Leading,
Enterprise-Class
유무선 통합 포트폴리오



보안 선도
포괄적인 정책 및 행위
분석, 트래픽 분류를 통한
보안 강화



완벽한 내부
위치 기반
서비스

Global Reach and Go-to-Market,
Fortune 100 Customer Base backed by


Hewlett Packard
Enterprise





THANK YOU!

aruba

a Hewlett Packard
Enterprise company