AIRHEADS meetup

aruba
a Hewlett Packard Enterprise company

IntroSpect
User and Entity Behavior Analytics (UEBA)

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20/12/2018 İstanbul

#ArubaAirheads

INTROSPECT UEBA
User and Entity Behavior Analytics

Uses advanced behavioral analytics
to discover and understand
hidden threats and attacks
already inside the infrastructure

KEY FEATURES

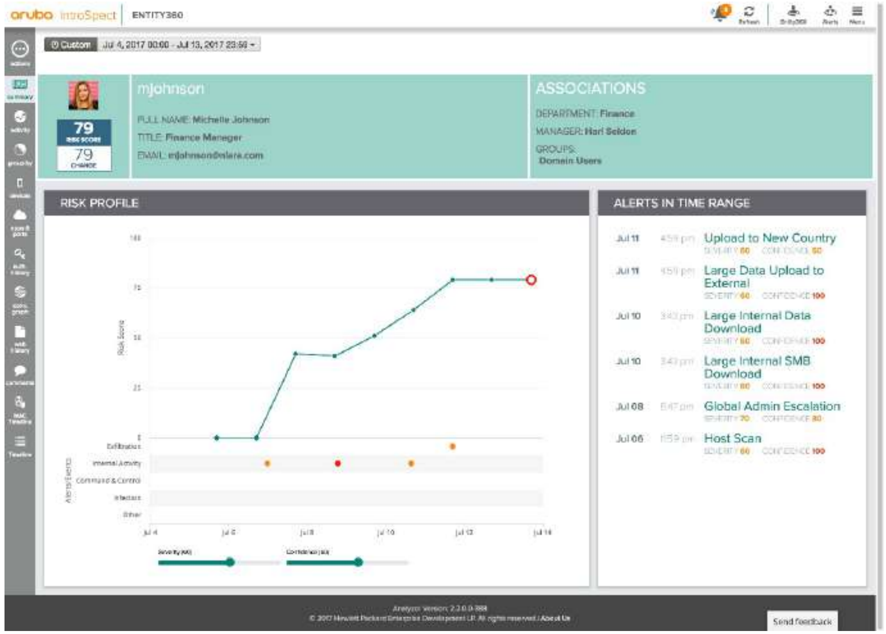
Continuous behavior monitoring

AI-powered attack detection

Threat prioritization

Rapid incident investigation

Multi-vendor integrations



mjohnson

FULL NAME: Michelle Johnson

TITLE: Finance Manager

EMAIL: mjohnson@niara.com

ASSOCIATIONS

DEPARTMENT: Finance

MANAGER: Hari Seldon

GROUPS:
Domain Users

ALERTS IN TIME RANGE

Jul 11	4:59 pm	Upload to New Country SEVERITY 60 CONFIDENCE 60
Jul 11	4:59 pm	Large Data Upload to External SEVERITY 60 CONFIDENCE 100
Jul 10	3:43 pm	Large Internal Data Download SEVERITY 60 CONFIDENCE 100
Jul 10	3:43 pm	Large Internal SMB Download SEVERITY 60 CONFIDENCE 100
Jul 08	5:47 pm	Global Admin Escalation SEVERITY 70 CONFIDENCE 80
Jul 06	1:59 pm	Host Scan SEVERITY 60 CONFIDENCE 100

Analyzer Version: 2.2.0.0-388
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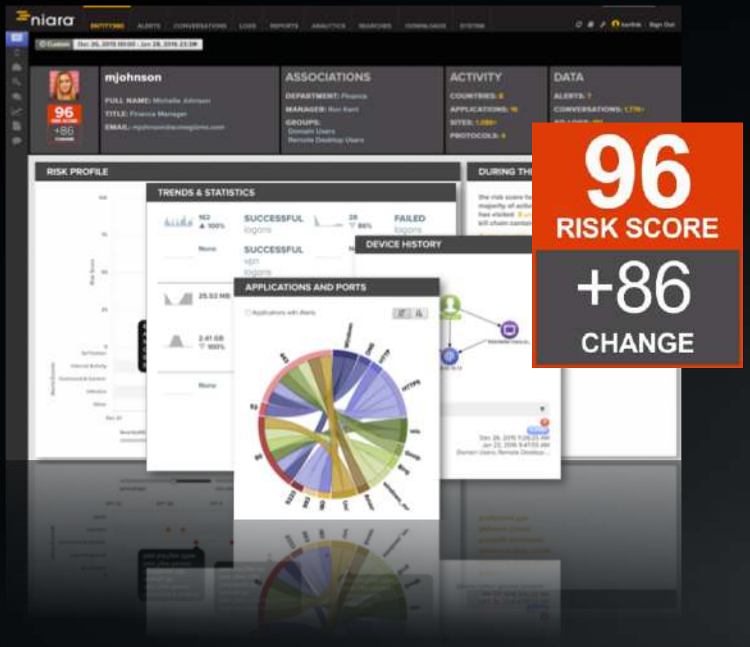
MACHINE LEARNING TO
SECURE THE ENTERPRISE FROM THE INSIDE



IntroSpect

Machine-learned user and entity
behavioral analytics for enterprise security

Visibility

Monitoring

Policy
Enforcement

CLEARPASS
POLICY MANAGER

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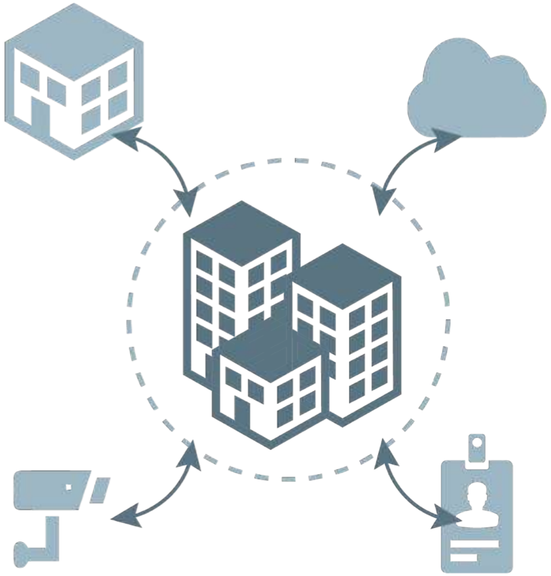
atmosphere
LOCAL » 2017

New Attack Environment: No Walls, New Threats

ATTACKERS

ARE QUICKLY INNOVATING & ADAPTING



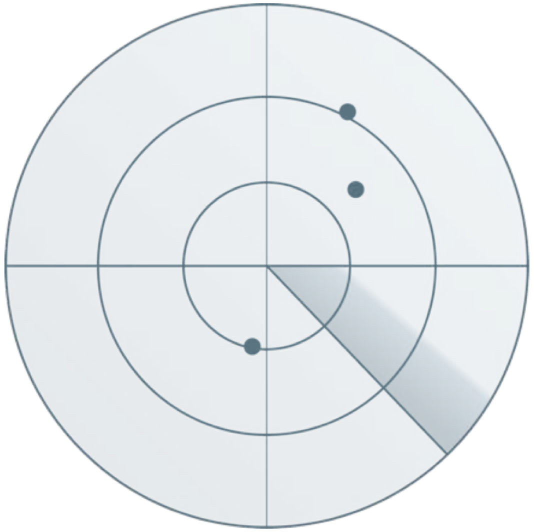
BATTLEFIELD

WITH IOT AND CLOUD, SECURITY IS BORDERLESS

Current Security Defenses Falling Short

CURRENT PREVENTION & DETECTION
NOT STOPPING TARGETED ATTACKS

+



MANAGEMENT SYSTEMS
NOT KEEPING UP

IntroSpect Addresses Two Key Security Challenges

ATTACKS AND RISKY BEHAVIORS

on the inside

One of the main goals of external adversaries is to gain access to legitimate internal credentials to advance their assault.

EFFICIENCY AND EFFECTIVENESS

of the security team

80% of these breaches are more likely to take months and years to detect rather than weeks or less

Source: Verizon 2017 Data Breach Investigations Report

Attacks on the Inside Utilizing Legitimate Credentials

COMPROMISED

40 million credit cards were stolen from Target’s severs

STOLEN CREDENTIALS

MALICIOUS

Edward Snowden stole more than 1.7 million classified documents

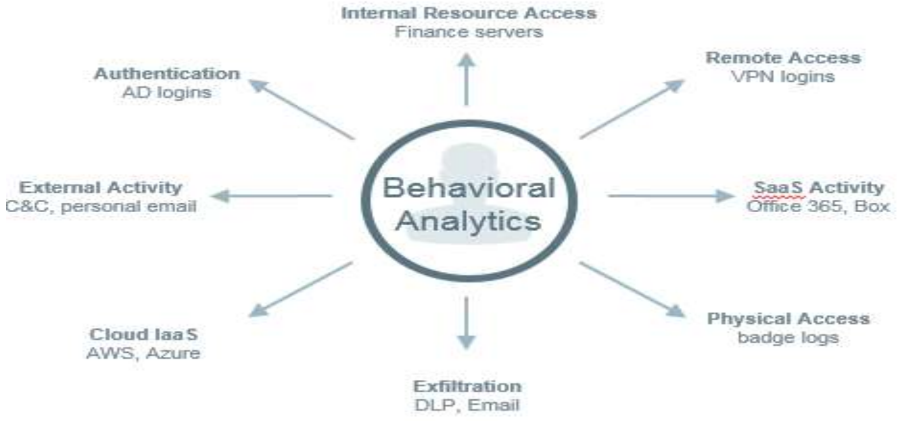
INTENDED TO LEAK INFORMATION

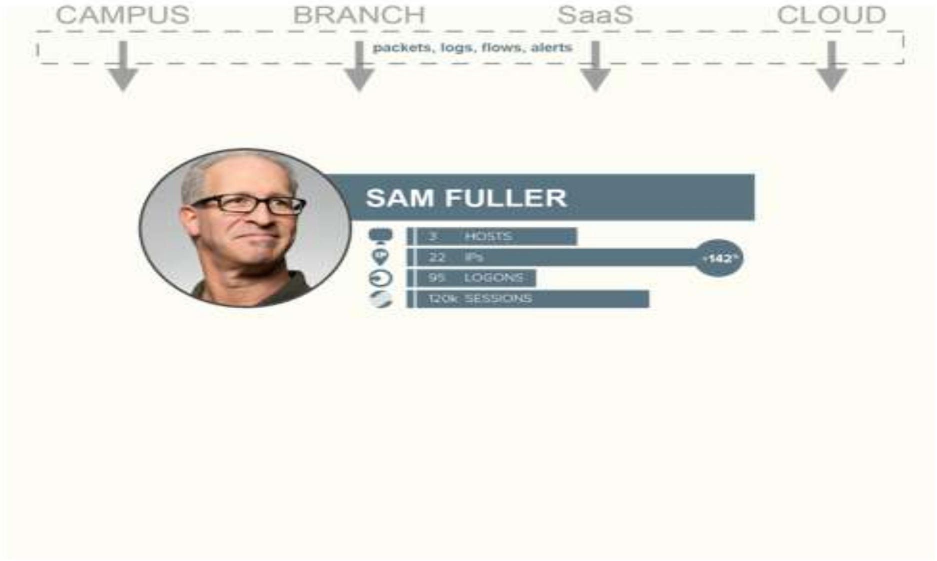
NEGLIGENT

DDoS attack from 10M+ hacked home devices took down major websites

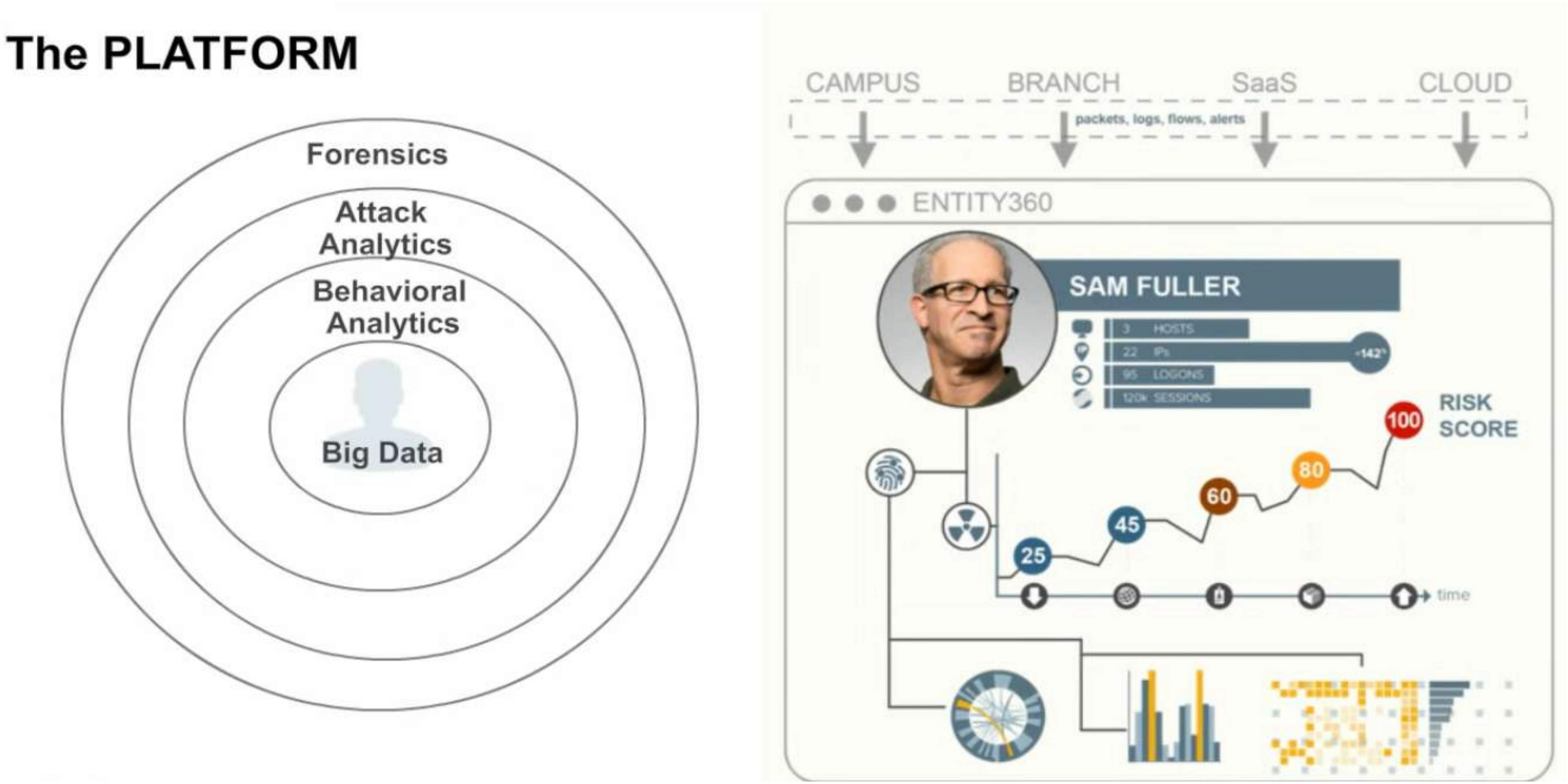
ALL USED THE SAME PASSWORD

Behavior – Many Different Dimensions



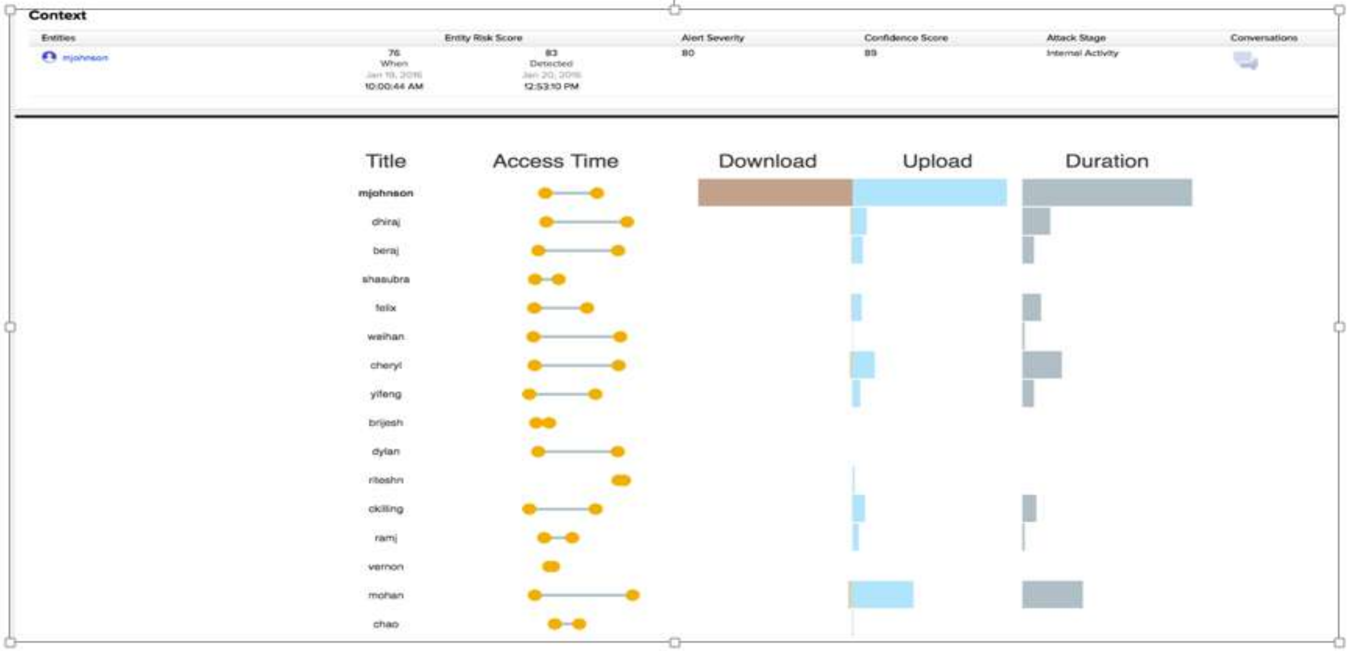


- IntroSpect can aggregate and analyze everything from network packets to general IT logs to third party alerts, our machine learning models have a complete view of user or device behavior
- build **behavioral “baselines”** for all entities



The heart of this value proposition is **IntroSpect's Entity360** profile

Peer Baseline Anomaly

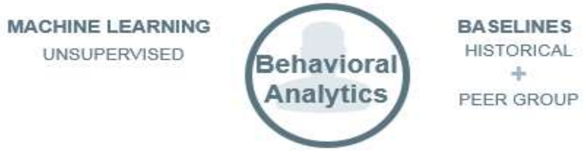


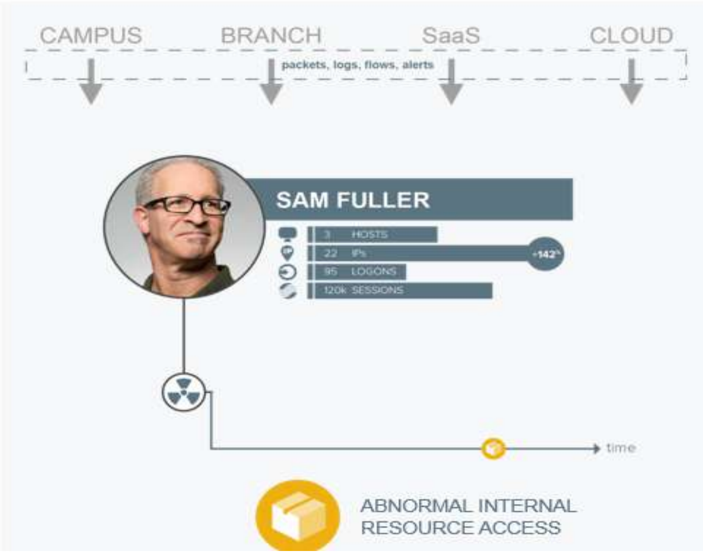
Context

Entities	Entity Risk Score		Alert Severity	Confidence Score	Attack Stage	Conversations
mjohnson	76 When Jan 19, 2016 10:00:44 AM	83 Detected Jan 20, 2016 12:53:10 PM	80	89	Internal Activity	

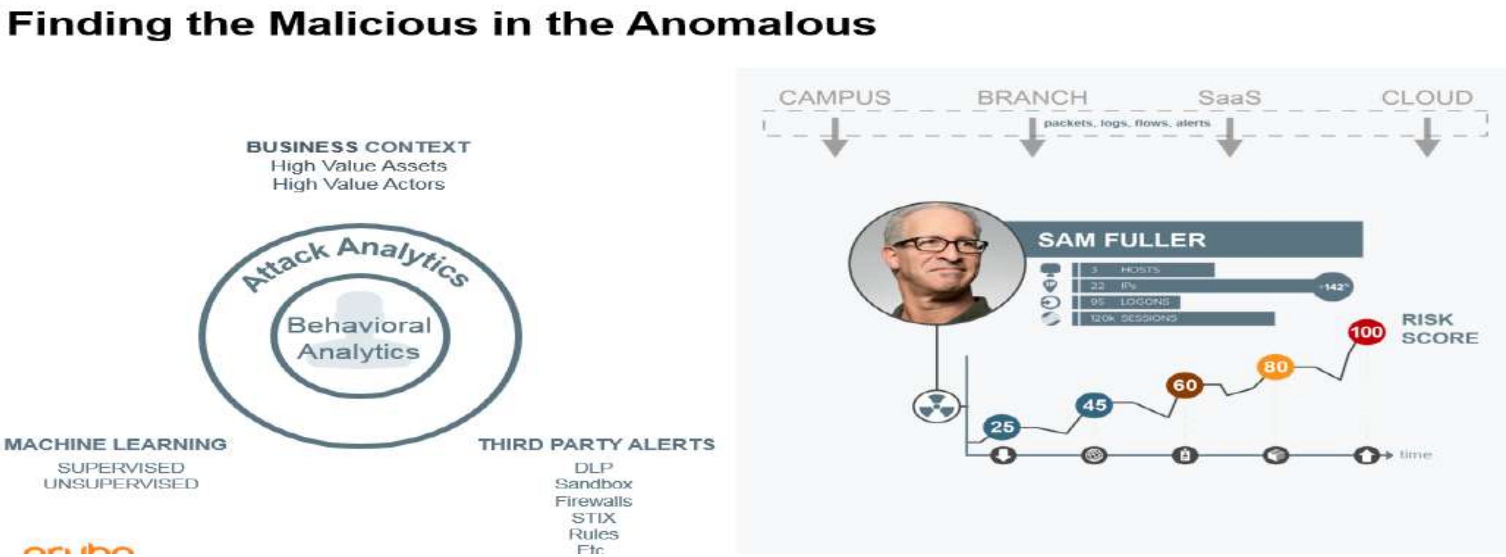
No doubt about it. That’s 100% anomalous behavior

Basics of Behavioral Analytics





behavioral anomaly detection is known as **Unsupervised Machine Learning**



Finding the Malicious in the Anomalous

BUSINESS CONTEXT
High Value Assets
High Value Actors

Attack Analytics

Behavioral Analytics

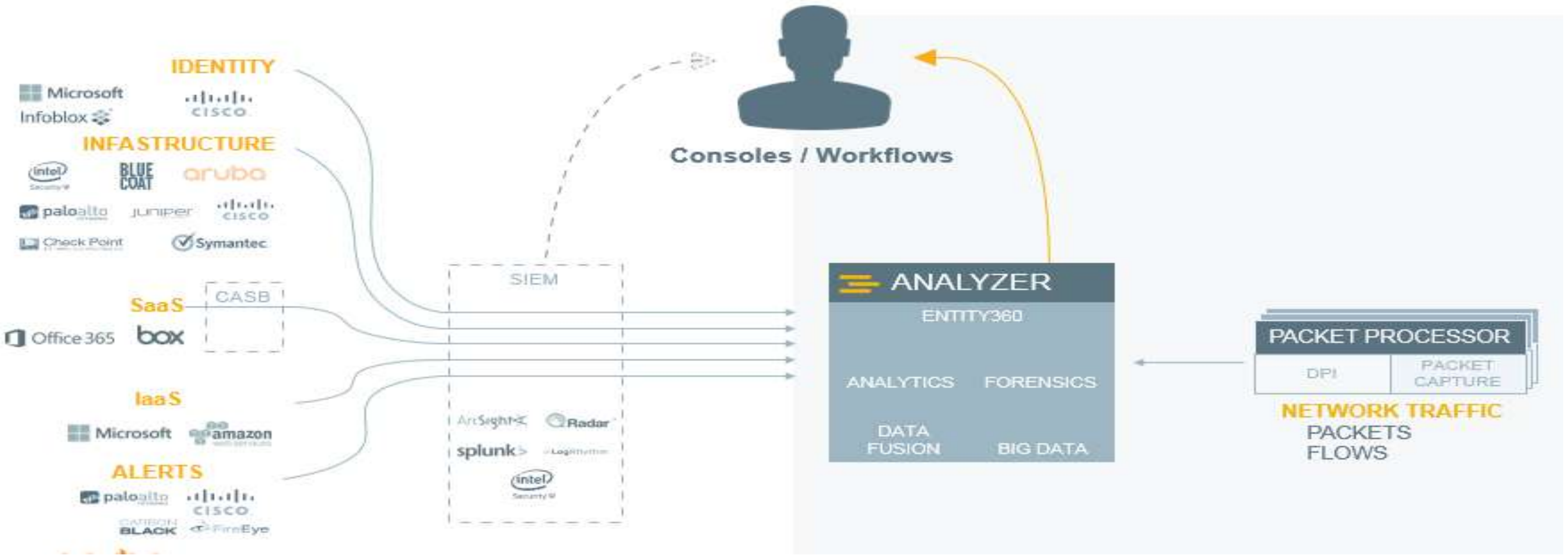
MACHINE LEARNING
SUPERVISED
UNSUPERVISED

THIRD PARTY ALERTS
DLP
Sandbox
Firewalls
STIX
Rules
Etc

How do you know if the behavior is malicious?

Supervised Machine Learning

SOLUTION – INTEGRATED WITH SECURITY ECOSYSTEM



Point #1: consumes exhaust data

Point #2: SIEM/log management.

Point #3: can be deployed on site or in the cloud

Deployment Scenarios

Analyzer Deployment Options

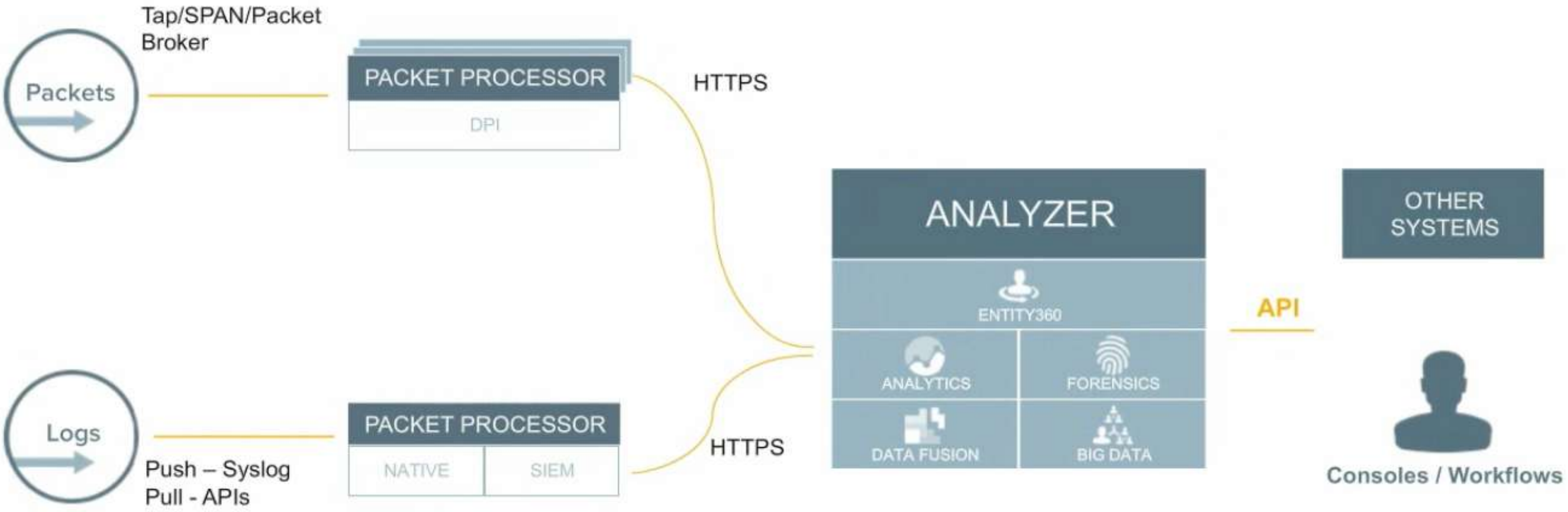
2RU Appliance

1RU Scale Out

Public/Hybrid Cloud
(AWS VPC)

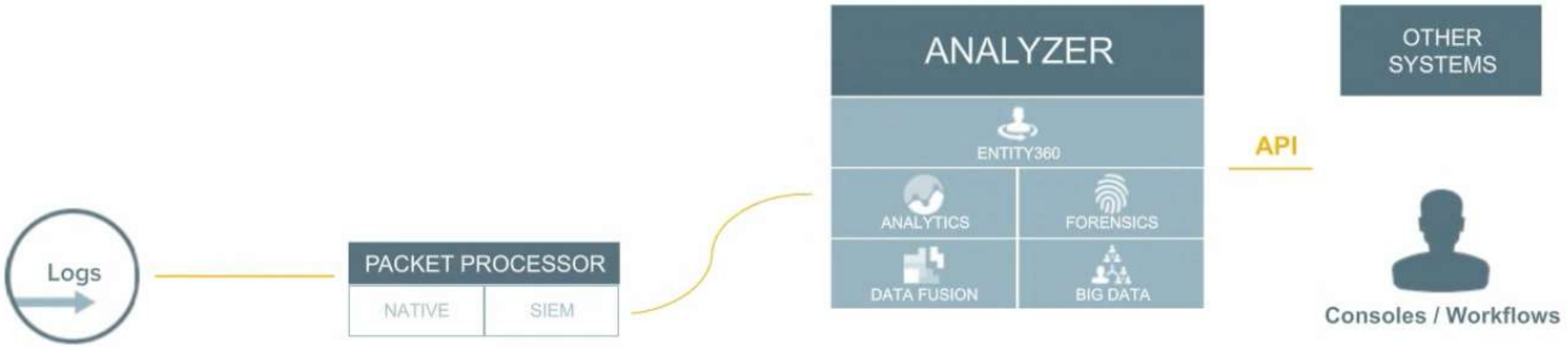
DEPLOYMENT SCENARIOS

Analyzer in Data Center or Cloud
Packet Processor on Prem



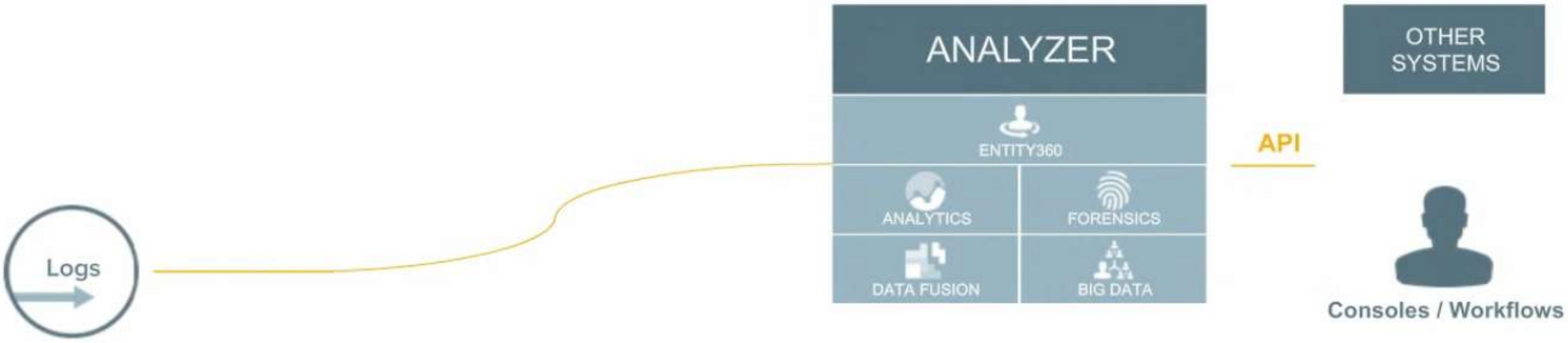
DEPLOYMENT SCENARIOS

Analyzer in Data Center or Cloud



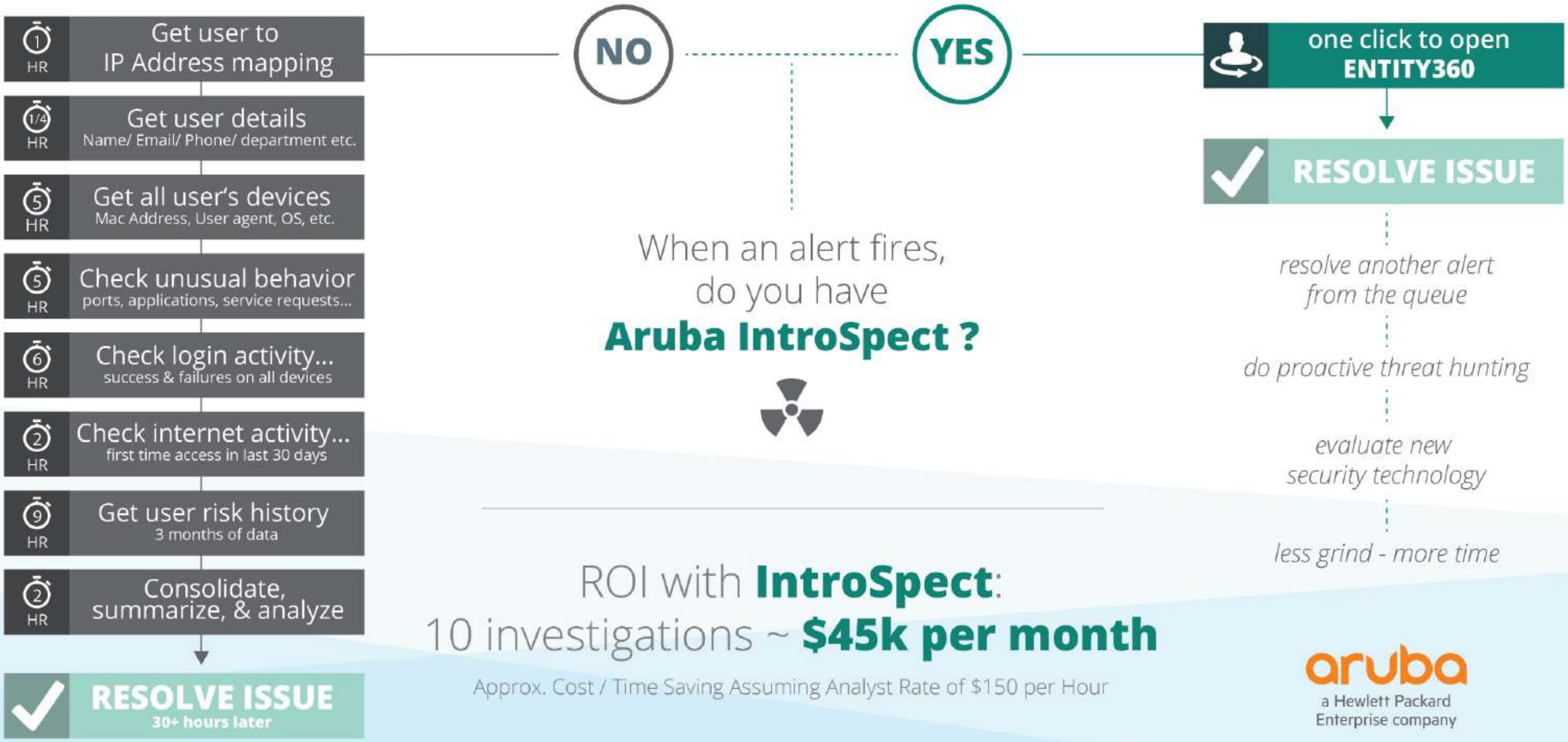
DEPLOYMENT SCENARIOS

Analyzer On Prem



HOW TO INVESTIGATE AN ALERT

brought to you by Aruba, a Hewlett Packard Enterprise company



1 HR — Get user to IP Address mapping

1/4 HR — Get user details
Name/ Email/ Phone/ department etc.

5 HR — Get all user's devices
Mac Address, User agent, OS, etc.

5 HR — Check unusual behavior
ports, applications, service requests...

6 HR — Check login activity...
success & failures on all devices

2 HR — Check internet activity...
first time access in last 30 days

9 HR — Get user risk history
3 months of data

2 HR — Consolidate, summarize, & analyze

✓ **RESOLVE ISSUE**
30+ hours later

NO

YES

When an alert fires,
do you have
Aruba IntroSpect ?

one click to open
ENTITY360

✓ **RESOLVE ISSUE**

resolve another alert
from the queue

do proactive threat hunting

evaluate new
security technology

less grind - more time

ROI with **IntroSpect**:
10 investigations ~ **$45k per month**

Approx. Cost / Time Saving Assuming Analyst Rate of $150 per Hour

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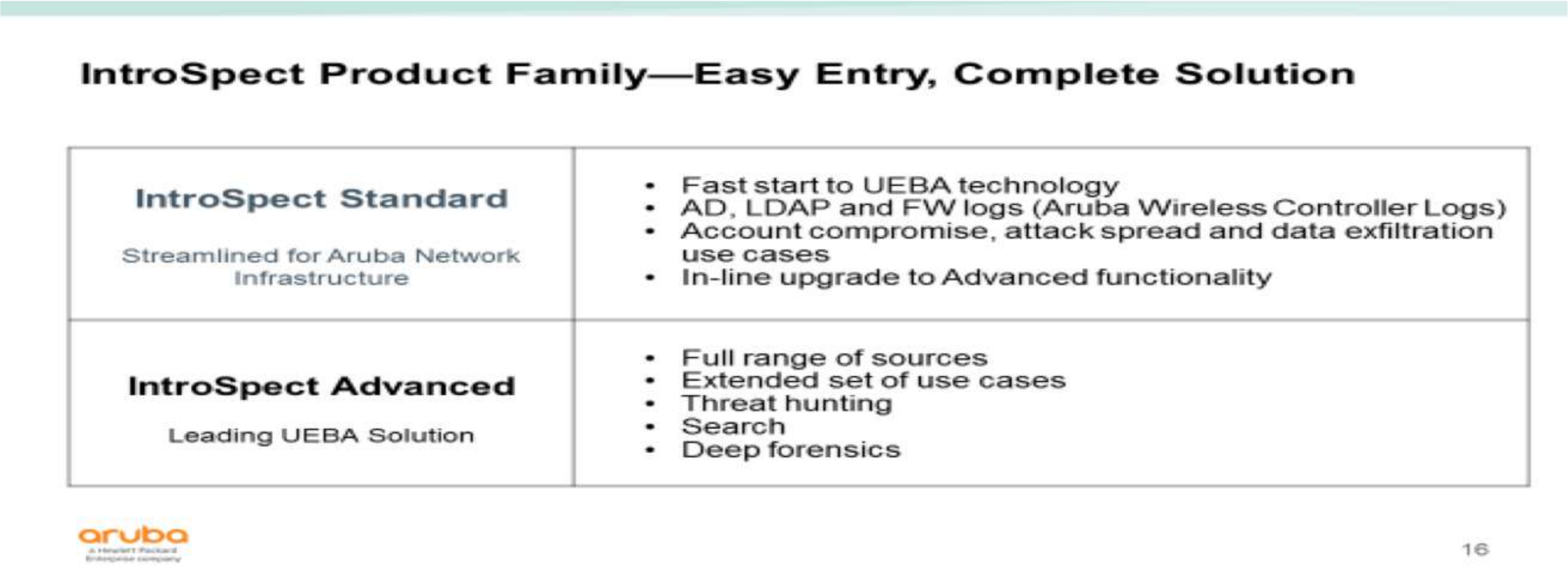

IntroSpect Product Family—Easy Entry, Complete Solution

IntroSpect Standard Streamlined for Aruba Network Infrastructure	• Fast start to UEBA technology • AD, LDAP and FW logs (Aruba Wireless Controller Logs) • Account compromise, attack spread and data exfiltration use cases • In-line upgrade to Advanced functionality
IntroSpect Advanced Leading UEBA Solution	• Full range of sources • Extended set of use cases • Threat hunting • Search • Deep forensics

Differentiation

Comprehensive visibility	• Packets, flows, logs • No blind spots
Most extensive attack analytics	• 100+ supervised and unsupervised machine learning models • Adaptive learning • Extensible models (new use cases, data sources) • Business context in risk score
Accelerated Investigations and Response	• Integrated forensics • Seamless ClearPass integration
Deployment ease	• Flexible: on-premise or cloud • Ingest data natively or from SIEM, log management, packet broker solutions
Quick Start, Enterprise Scale	• Standard Edition tuned for Aruba networks • Tens of data sources, hundreds of behavioral models across tens of thousands of users

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IntroSpect Summary

Diverse Data Sources

FOR

Analytics + Forensics

SUPPORTING

Attack Detection + Incident Investigation

ALL IN A

Self-Contained Solution + Open Platform

AVAILABLE

Streamlined for Aruba Networks + Scaled for Enterprise UEBA

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ClearPass Integration

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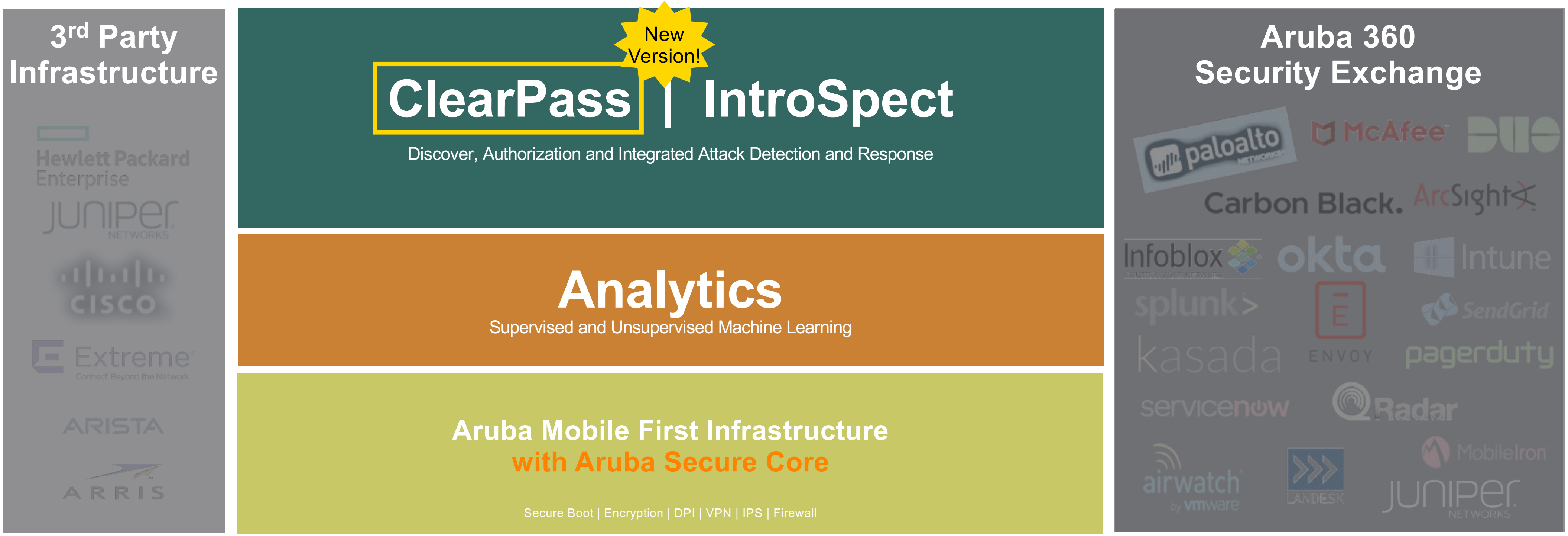
INTRODUCING THE ARUBA 360 SECURE FABRIC

Open, Analytics-driven Security for the Mobile, Cloud, and IoT Era



3rd Party Infrastructure

New Version!

ClearPass | IntroSpect

Discover, Authorization and Integrated Attack Detection and Response

Analytics

Supervised and Unsupervised Machine Learning

Aruba Mobile First Infrastructure
with Aruba Secure Core

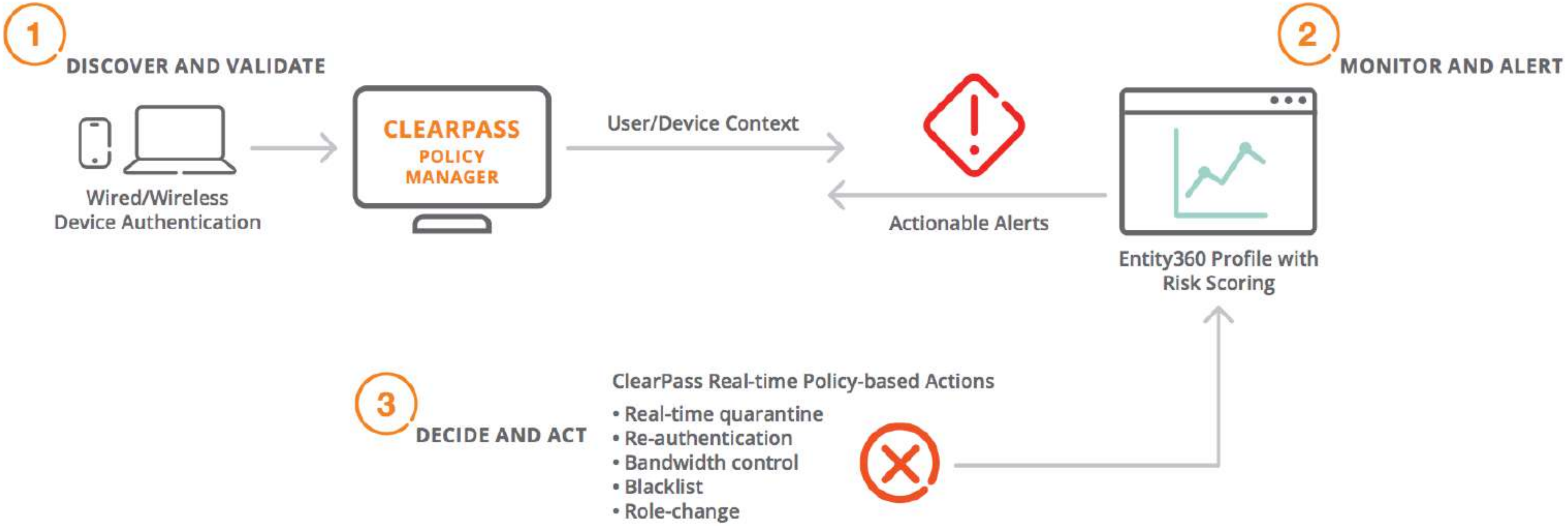
Secure Boot | Encryption | DPI | VPN | IPS | Firewall

Aruba 360 Security Exchange

360° active cyber protection and secure access
from the edge, to the core, to the cloud—for any network

360° PROTECTION

CLEARPASS + UEBA



1 DISCOVER AND VALIDATE

Wired/Wireless Device Authentication

CLEARPASS POLICY MANAGER

User/Device Context

Actionable Alerts

2 MONITOR AND ALERT

Entity360 Profile with Risk Scoring

3 DECIDE AND ACT

ClearPass Real-time Policy-based Actions

- Real-time quarantine
- Re-authentication
- Bandwidth control
- Blacklist
- Role-change

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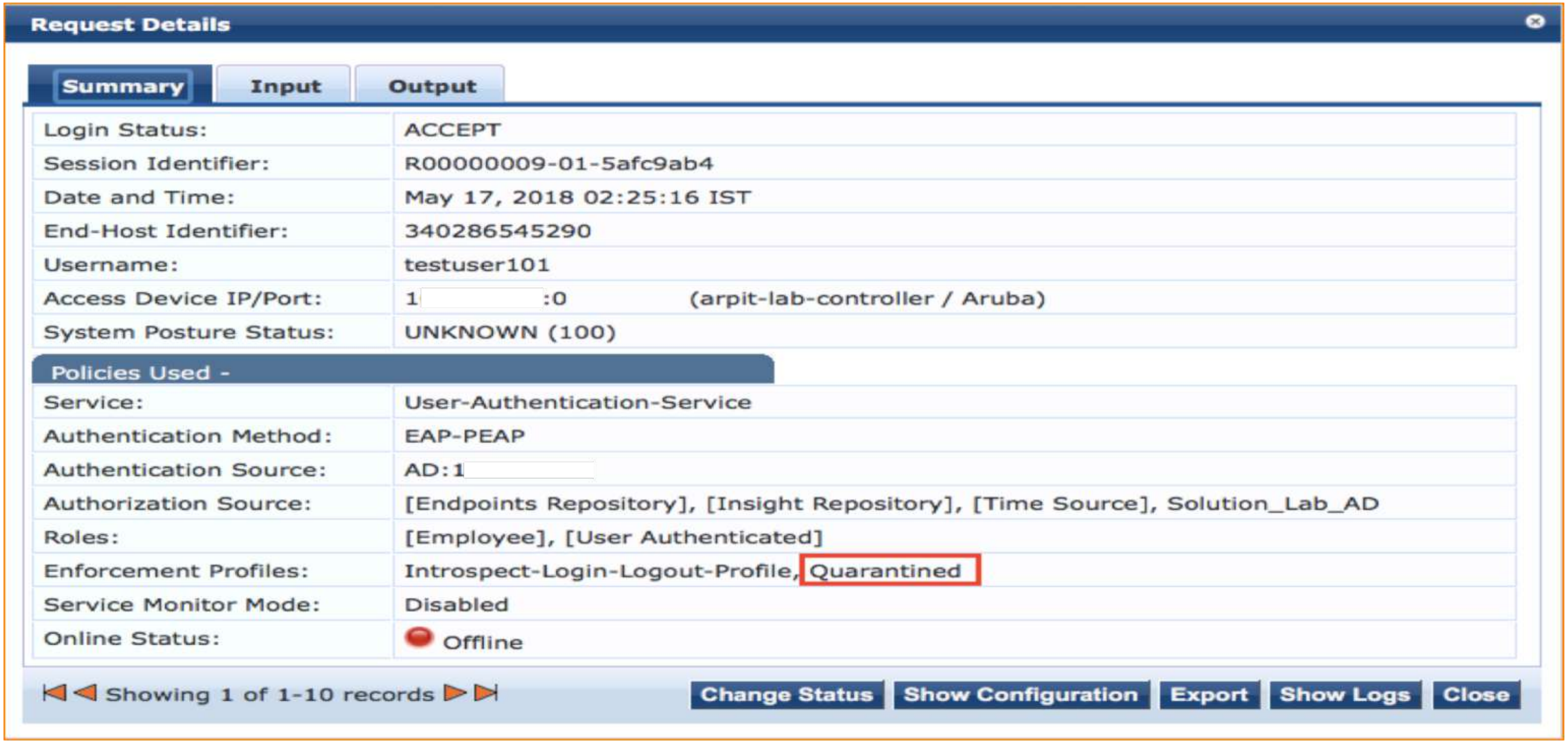
Access Tracker result



Request Details

Login Status:	ACCEPT
Session Identifier:	R00000009-01-5afc9ab4
Date and Time:	May 17, 2018 02:25:16 IST
End-Host Identifier:	340286545290
Username:	testuser101
Access Device IP/Port:	1[redacted]:0 (arpit-lab-controller / Aruba)
System Posture Status:	UNKNOWN (100)
Policies Used -	
Service:	User-Authentication-Service
Authentication Method:	EAP-PEAP
Authentication Source:	AD:1[redacted]
Authorization Source:	[Endpoints Repository], [Insight Repository], [Time Source], Solution_Lab_AD
Roles:	[Employee], [User Authenticated]
Enforcement Profiles:	Introspect-Login-Logout-Profile, Quarantined
Service Monitor Mode:	Disabled
Online Status:	● Offline

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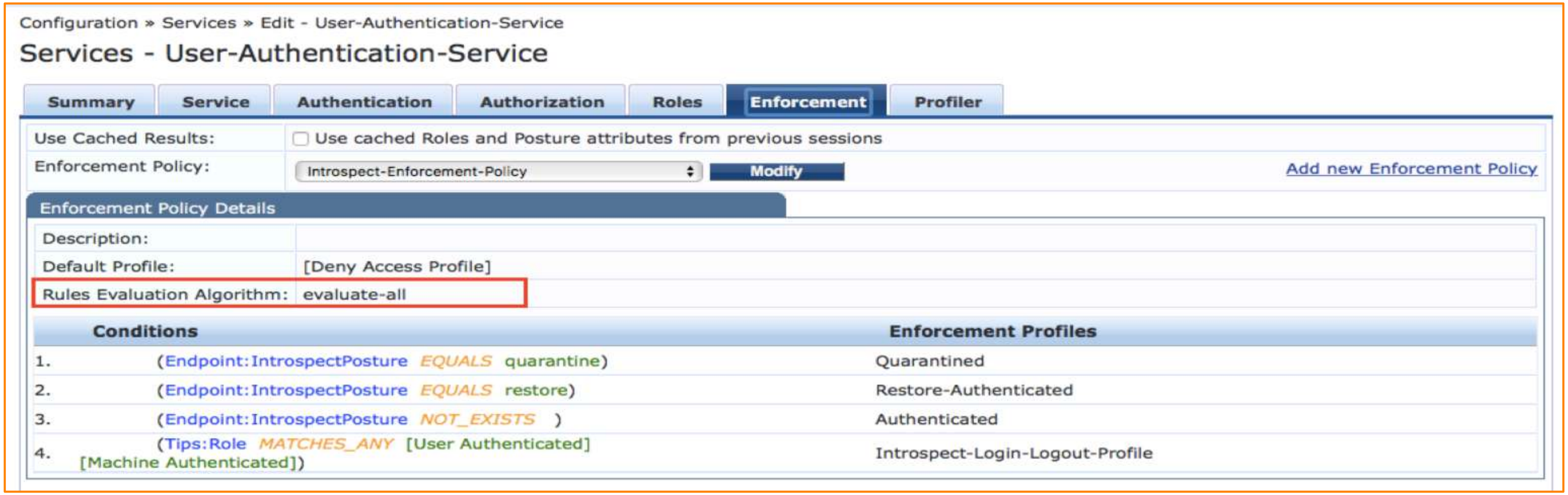
Enforcement Policy for RADIUS-based Authentication Service



Configuration » Services » Edit - User-Authentication-Service

Services - User-Authentication-Service

Use Cached Results:	□ Use cached Roles and Posture attributes from previous sessions
Enforcement Policy:	Introspect-Enforcement-Policy

Enforcement Policy Details

Description:	
Default Profile:	[Deny Access Profile]
Rules Evaluation Algorithm:	evaluate-all

	Conditions	Enforcement Profiles
1.	(Endpoint:IntrospectPosture EQUALS quarantine)	Quarantined
2.	(Endpoint:IntrospectPosture EQUALS restore)	Restore-Authenticated
3.	(Endpoint:IntrospectPosture NOT_EXISTS)	Authenticated
4.	(Tips:Role MATCHES_ANY [User Authenticated] [Machine Authenticated])	Introspect-Login-Logout-Profile

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Thank You