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How to manage evolving Cyber-Threats on evolving ICT infrastructure

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MD for CEE Region

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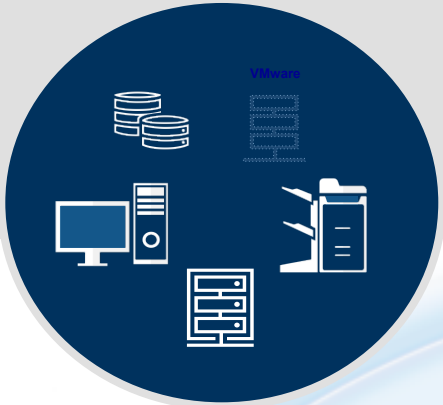
ICT Assets and Apps are everywhere…



On Premise **Endpoints** **Cloud**

1 average ICT Asset = 20 Software components

1 average ICT Asset = 333 Security Datapoints for Risk & Compliance

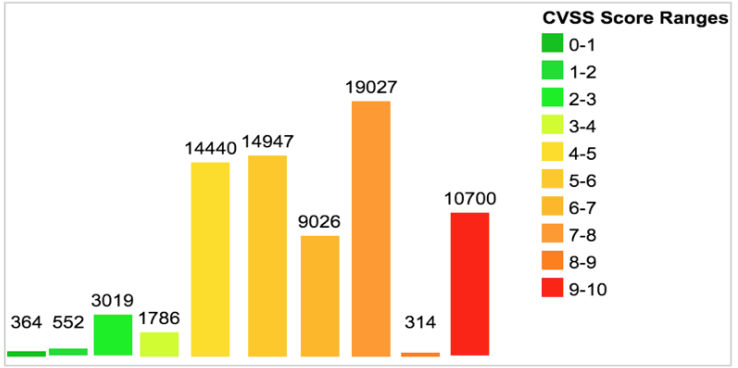
Vulnerabilities are growing and aging...

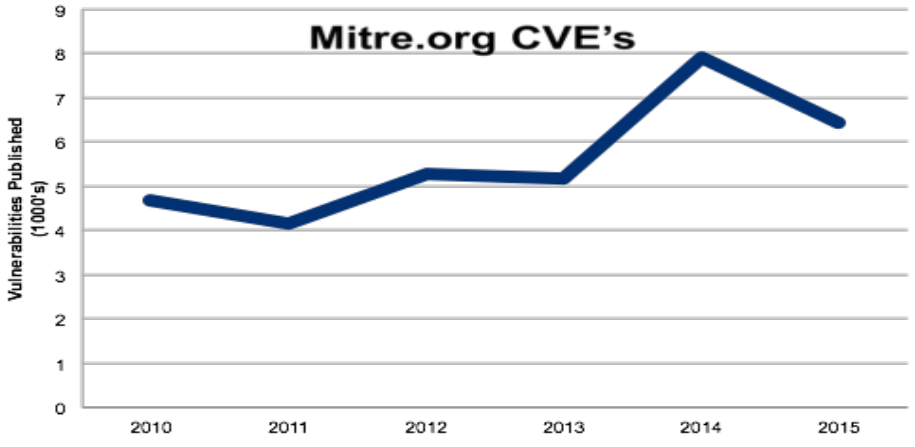
Distribution of all vulnerabilities by CVSS Scores

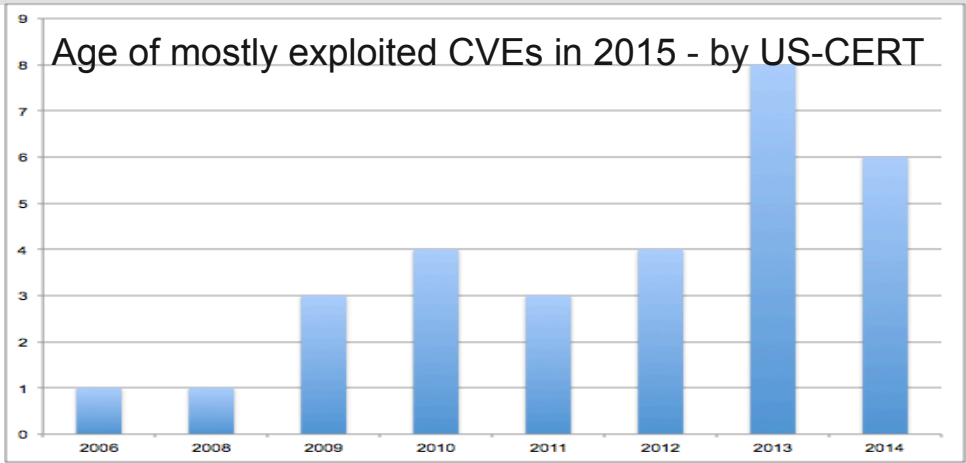
CVSS Score	Number Of Vulnerabilities	Percentage
0-1	364	0.50
1-2	552	0.70
2-3	3019	4.10
3-4	1786	2.40
4-5	14440	19.50
5-6	14947	20.20
6-7	9026	12.20
7-8	19027	25.70
8-9	314	0.40
9-10	10700	14.40
Total	74175	

Weighted Average CVSS Score: **6.8**

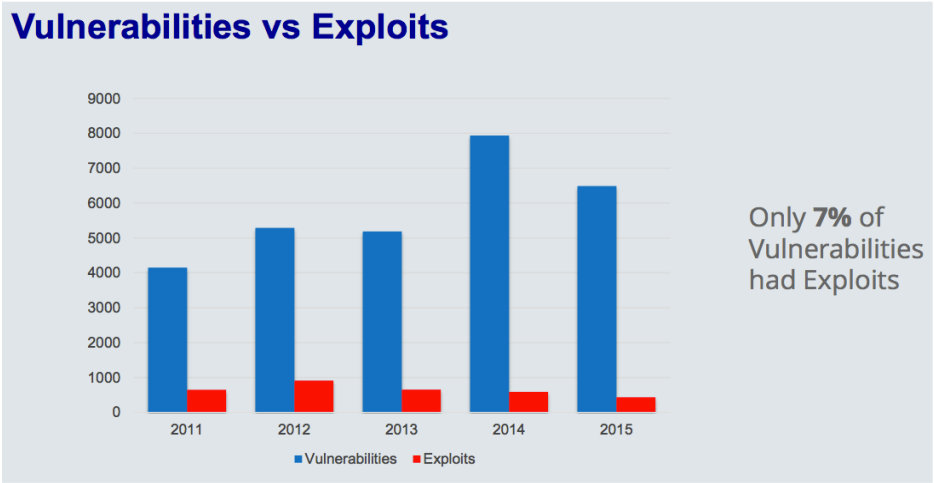
Vulnerability Distribution By CVSS Scores

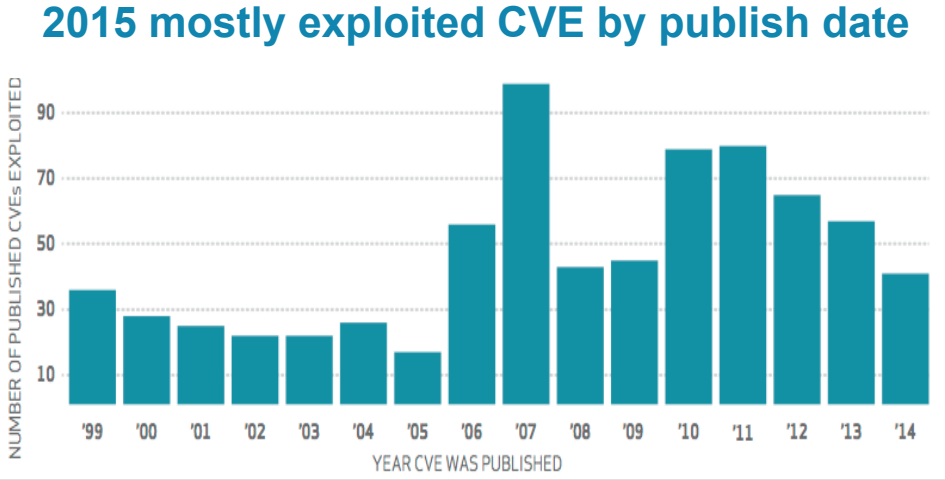


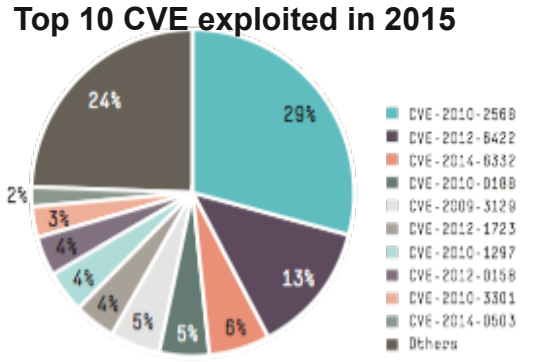




Cyber-threats are getting focused ...

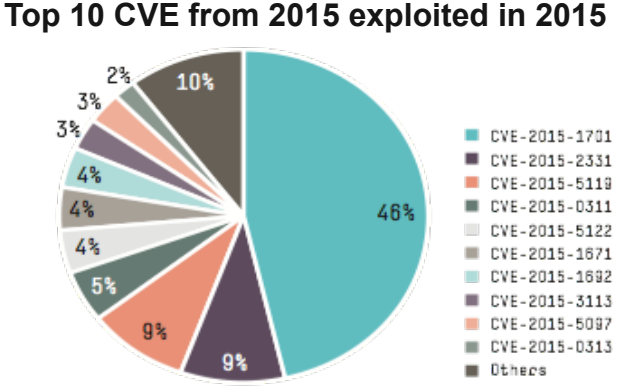






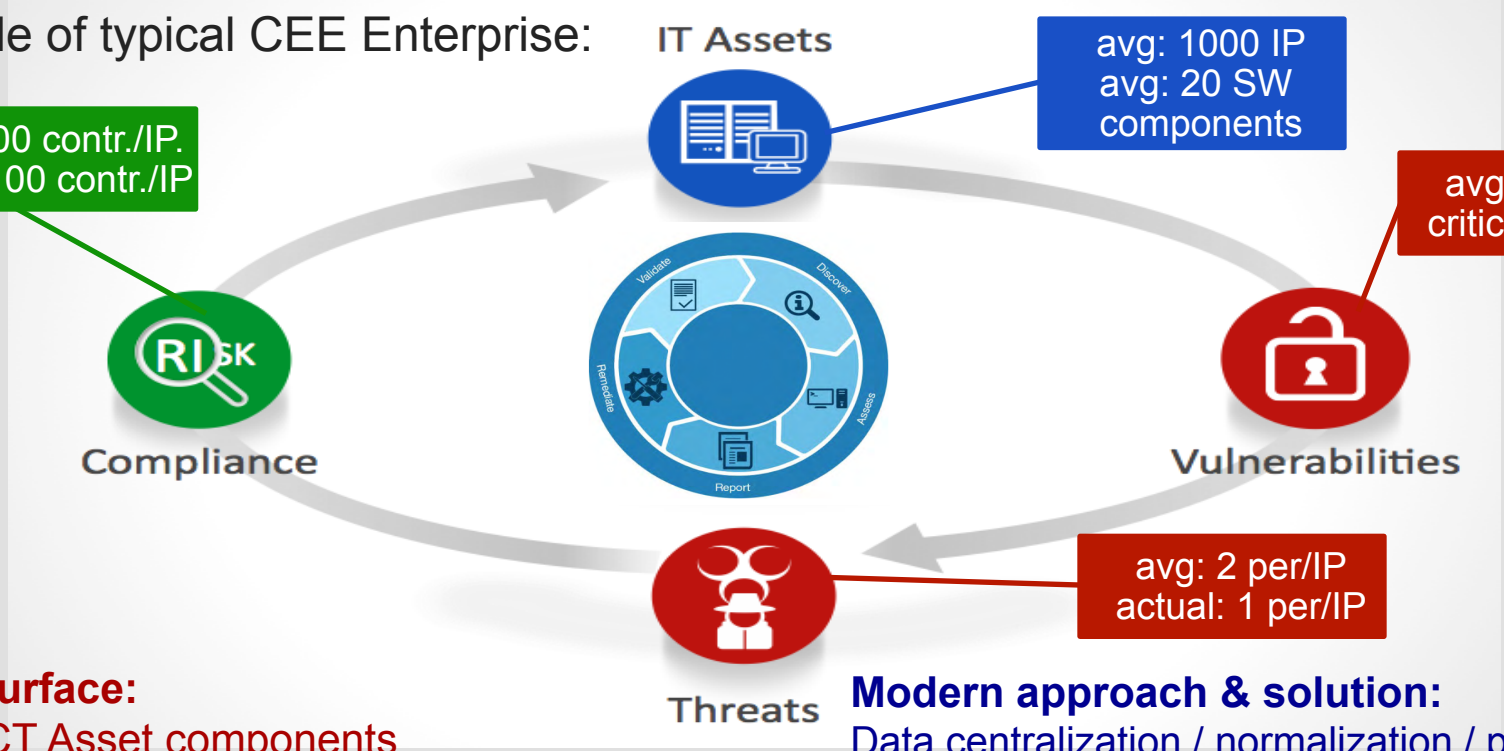
Based on real-breaches in 2015

Top exploited CVE by HPE'2016 Report



Where is the problem? In scope & time!

Example of typical CEE Enterprise:



Attack Surface:

20.000 ICT Asset components
20.000 Vulnerabilities (20% critical)
1.000 Actual Threats (Malware & Exploits)
100.000 Critical configuration security controls

Modern approach & solution:

Data centralization / normalization / prioritization
(Big)Data analytics / automation / workflow
Dashboards / Alerts / Tickets / Integrations
Cloud based architecture

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So what to do – prioritization of controls ?

SANS / CIS Critical Security Controls - Version 6.1 – Aug. 2016

CIS CRITICAL SECURITY CONTROL	NIST 800-53 rev4*	NIST Core Framework	DHS CDM Program	ISO 27002:2013	ISO 27002:2005	NSA MNP	Au Top 35	NSA Top 10
1 Inventory of Authorized & Unauthorized Devices	CA-7 CM-8 IA-3: SA-4 SC-17 SI-4 PM-5	ID.AM-1 ID.AM-3 PR.DS-3	• HWAM: Hardware Asset Management	A.8.1.1 A.9.1.2 A.13.1.1	A.7.1.1 A.10.6.1 A.10.6.2 A.11.4.6	• Map Your Network • Baseline Management • Document Your Network • Personal Electronic Device Management • Network Access Control • Log Management		
2 Inventory of Authorized & Unauthorized Software	CA-7 CM-2 CM-8 CM-10 CM-11 SA-4 SC-18 SC-34 SI-4 PM-5	ID.AM-2 PR.DS-6	• HWAM: Hardware Asset Managementt • SWAM: Software Asset Management	A.12.5.1 A.12.6.2		• Baseline Management • Executable Content Restrictions • Configuration and Change Management	1 14 17	• Application Whitelisting
3 Secure Configurations for Hardware & Software	CA-7 CM-2 CM-3 CM-5 CM-6 CM-7 CM-8 CM-9 CM-11 MA-4 RA-5 SA-4 SC-15 SC-34 SI-2 SI-4	PR.IP-1	• CSM: Configuration Settings Management	A.14.2.4 A.14.2.8 A.18.2.3	A.15.2.2	• Patch Management • Baseline Management • Data-at-Rest Protection • Configuration and Change Management	2-5 21	• Control Administrative Privileges • Set a Secure Baseline Configuration • Take Advantage of Software Improvements
4 Continuous Vulnerability Assessment & Remediation	CA-2 CA-7 RA-5 SC-34 SI-4 SI-7	ID.RA-1 ID.RA-2 PR.IP-12 DE.CM-8 RS.MI-3	• VUL: Vulnerability Management	A.12.6.1 A.14.2.8	A.12.6.1 A.13.1.2 A.15.2.2	• Patch Management • Log Management • Configuration and Change Management	2 3	• Take Advantage of Software Improvements
5 Controlled Use of Administrative Privileges	AC-2 AC-6 AC-17 AC-19 CA-7 IA-4 IA-5 SI-4	PR.AC-4 PR.AT-2 PR.MA-2 PR.PT-3		A.9.1.1 A.9.2.2 - A.9.2.6 A.9.3.1 A.9.4.1 - A.9.4.4	A.10.4.4 A.11.5.1 - A.11.5.3	• User Access • Baseline Management • Log Management	4 9 11 25	• Control Administrative Privileges

Source: https://www.cisecurity.org/critical-controls

How to do it on large scale?
1) Big Security Data Analytics around Assets

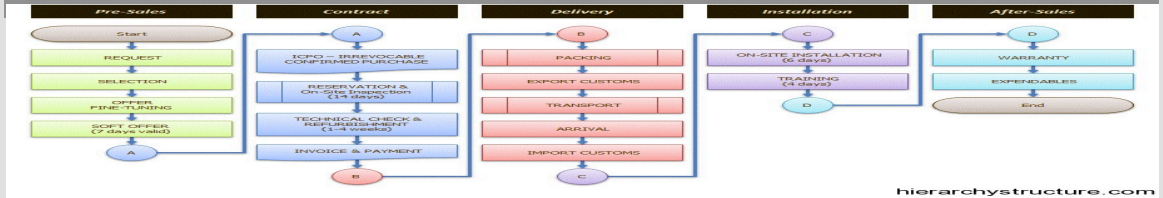
DASHBOARDS | ALERTS | TICKETS | WORKFLOWS | INTEGRATIONS

VULNERABILITY MANAGEMENT
+
THREAT ASSESSMENT
+
PATCH PRIORITIZATION

ASSET MANAGEMEMNT
+
HW & SW INVENTORY
+
CONTINUOUS VIEW & SEARCH

COMPLIANCE MANAGEMENT
+
SELF-AUDIT BENCHMARKING
+
CONFIGURATION HARDENING

MAPPING TO BUSINESS PROCESSES & BUSINESS APPLICATIONS



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2) Continuous Asset Discovery, Centralization & Correlation

Continuous Discovery

+

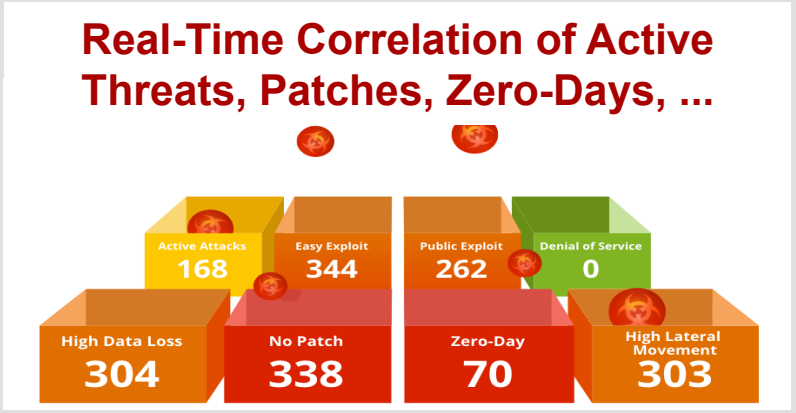
Real-time Distributed Data Collection

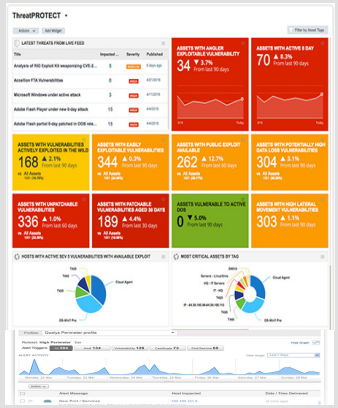
+

Data Analytics Correlation Backend

=

Continuous Security & Compliance





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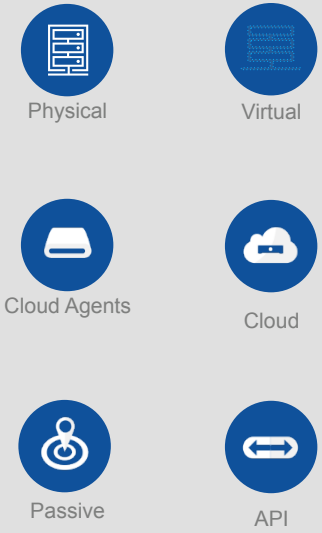
3) Via Multi-tenant & Elastic Cloud Architecture

Sensors

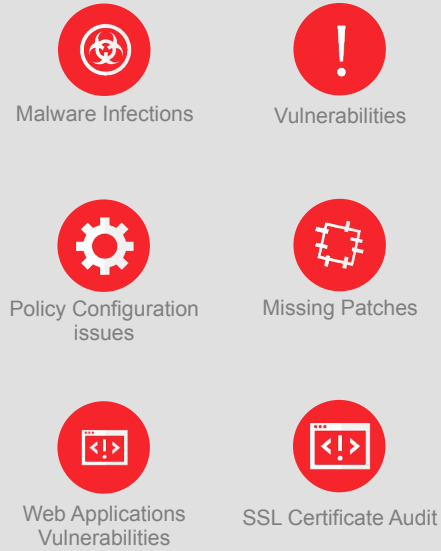


20 SW components / Asset
100 Critical Controls / Asset
333 Security datapoints / Asset

Data Analytics

20 Vulns detections / Asset
300 Real-time Threat correlations / Asset
Periodic Threat and Solution correlations

Incidence Response



Real-time Asset dashboards
Real-time critical Vulns
Real-time Threats alerts

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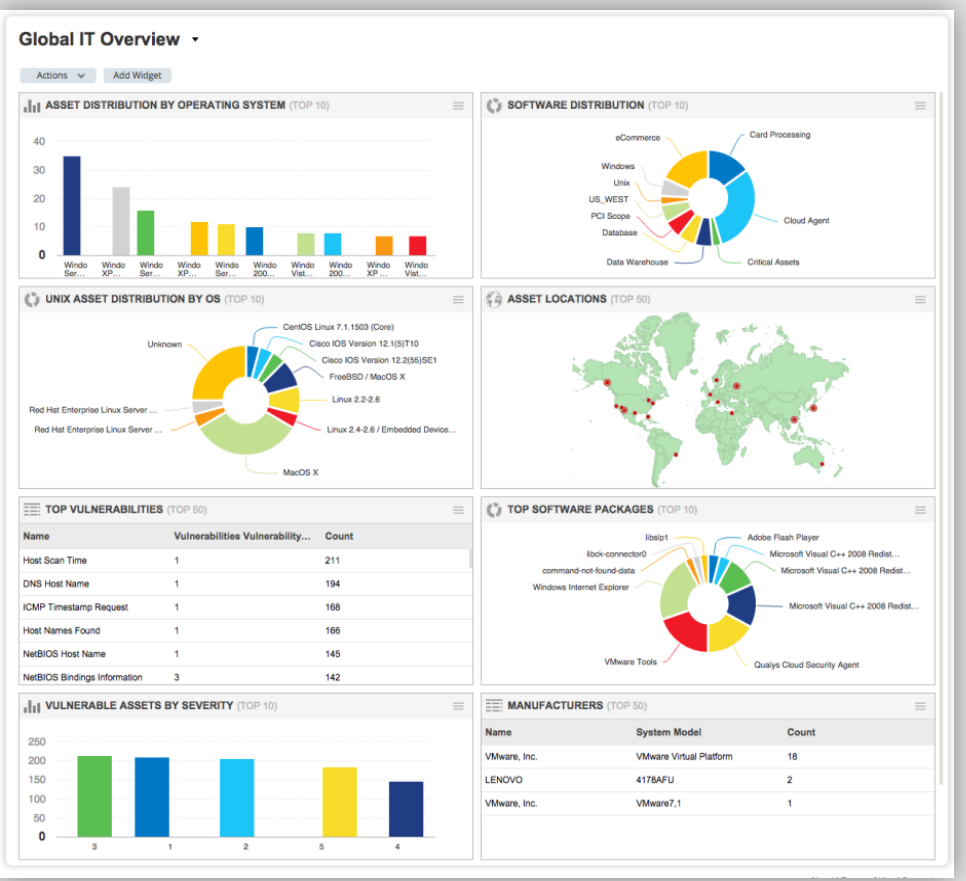
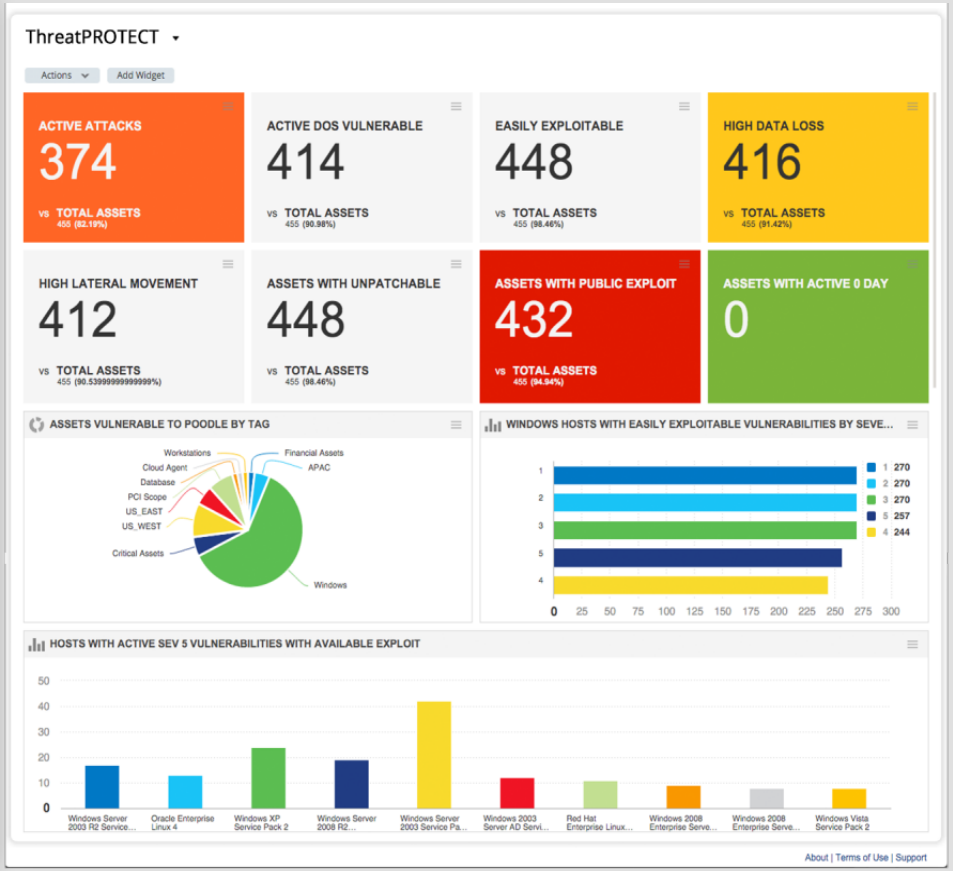
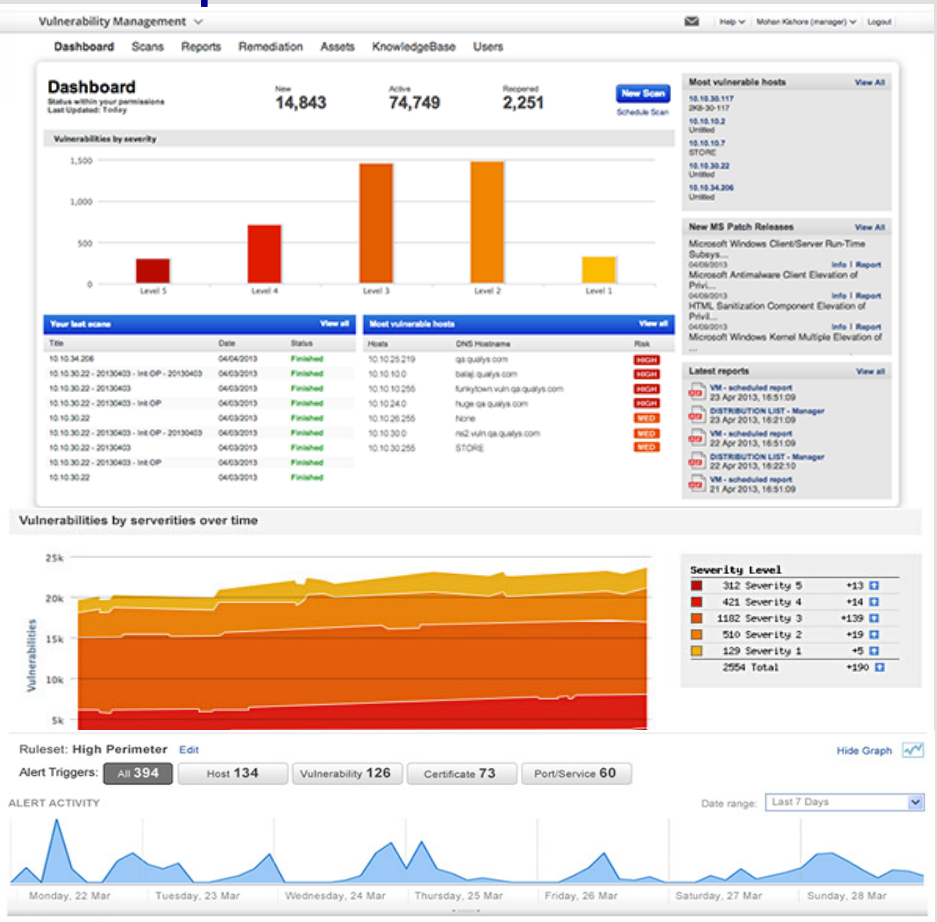
4) Moving from Reports to Dashboards & Alerts





5) Analyze trends and optimize workflows



6) Automate & Integrate for higher efficiency

CT Asset Management

servicenow

Remedy Corporation

IT Service Desks

QUALYSGUARD SMTP INTEGRATION

Risk

RedSeal

skybox security

Host Integrity Systems, Inc.

SIEM/Log

splunk>

LogRhythm

ArcSight

netForensics

Labs

StillSecure

TriGeo Network Security

RSA enVision

NetIQ

IDS/IPS

SOURCEfire

Pen Test

CORE SECURITY TECHNOLOGIES

Square Security

IMMUNITY

Access

Cyber-Ark

beyondtrust

IT GRC

R-sam

MODULO Solutions for IT GRC

bringa

LOCKPATH

MetricStream

RSA Archer eGRC Solutions

Allgress

Web App Firewall

BEE WARE Delivering Confidence in Web Applications

f5

IMPERVA

CITRIX

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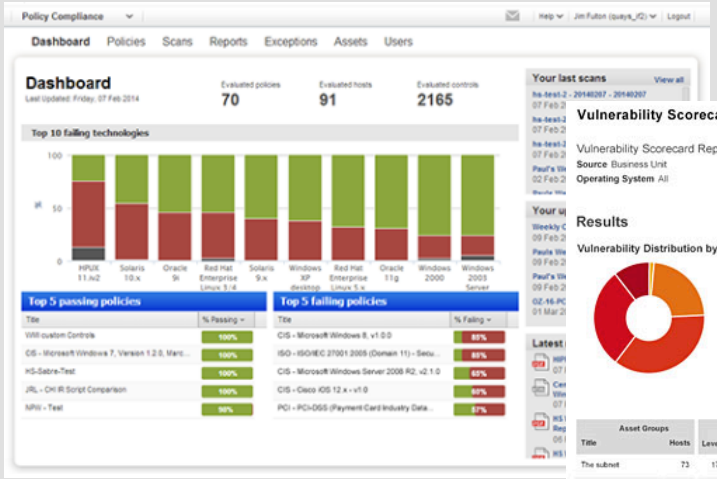
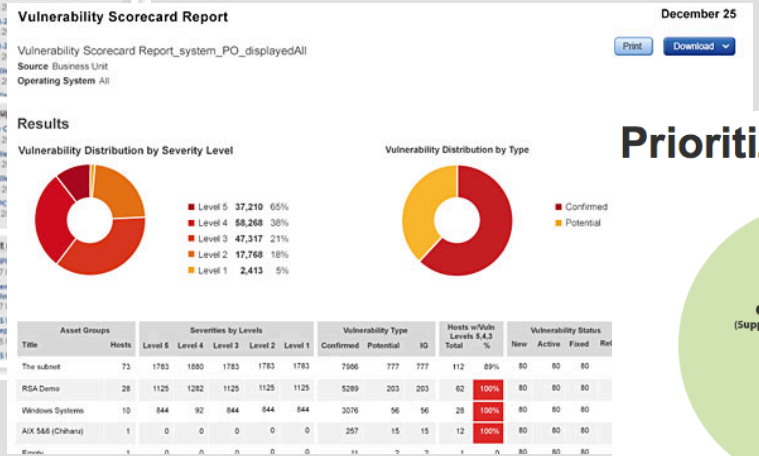
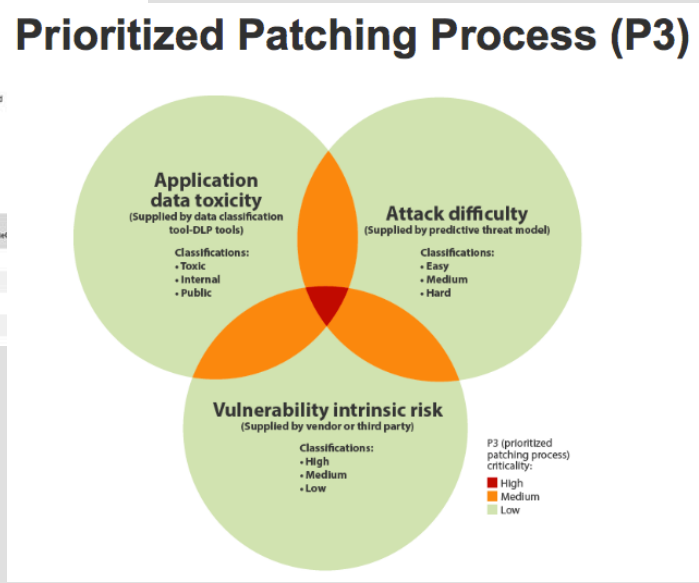
7) Deliver Visibility & Accountability & Prioritize again!







Because: No Visibility = No Security !!!

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Q&A

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