



QUALYS SECURITY CONFERENCE 2020

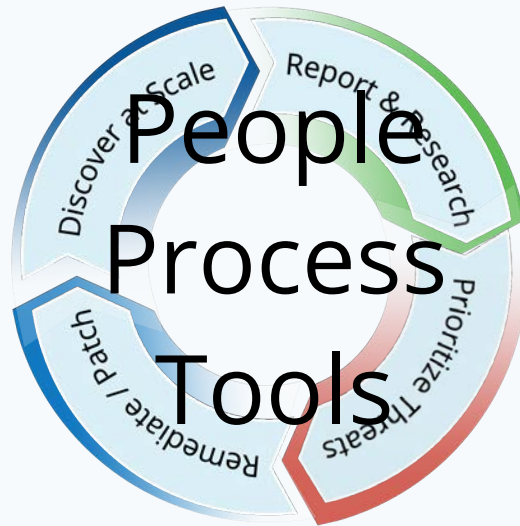
Vulnerability Management Detection & Response (VMDR)

Chris Carlson

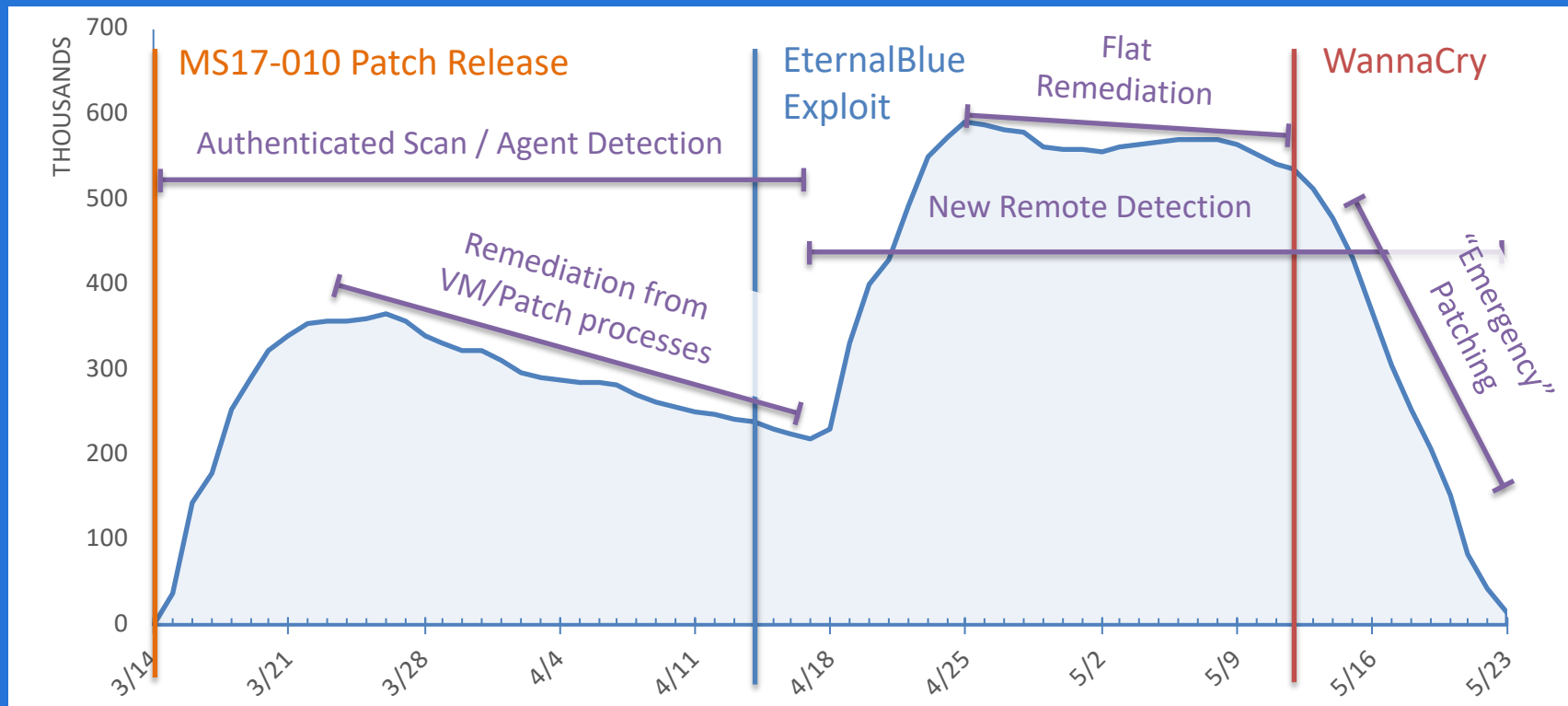
VP Product & Technology, Qualys, Inc.

Vulnerability Management Lifecycle





WannaCry Timeline and Remediation



Introducing  Qualys.

VMDR

Vulnerability Management, Detection and Response

One solution to Discover, Assess, Prioritize and Patch critical vulnerabilities

Asset Discovery

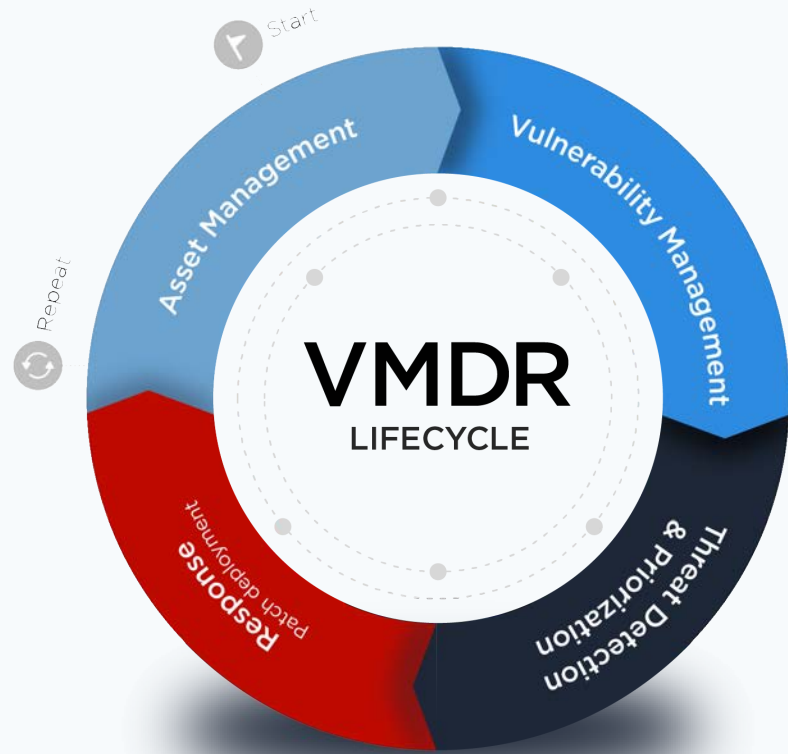
Detect known and unknown assets
Workflow to add an unmanaged asset as a managed asset

Asset Inventory

Hardware, operating system, and application inventory for all assets

Asset Normalization and Categorization

Normalize Inventory data by common attributes
Categorize by vendor, version, type



Managed

Assets

Software

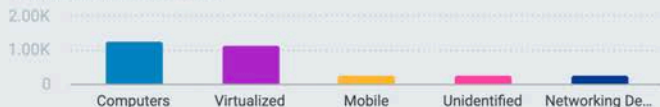
Last 30 Days



2.46K

Total Assets

TOP HARDWARE CATEGORIES



TOP OPERATING SYSTEMS CATEGORIES



Group Assets by ...

1 - 50 of 2460



ASSET	OPERATING SYSTEM	HARDWARE	LAST USER	SOURCE	TAGS
hktes-AG2 10.5.1.6 00-0D-3A-4E-A1-94	Microsoft Windows Server 2016 Datacenter 1607 64-Bit	Microsoft Azure DSv2-series Stan... Cloud Instance		VIRTUAL_MACHINE_ID Updated: Jan 20 2020	-
win-pk-04 10.150.0.9,35.194.83.16	Unidentified	Google Compute Engine N1 st... Cloud Instance		VIRTUAL_MACHINE_I... Updated: Jan 20 2020	-
pooja-windows 10.150.0.11,35.236.247.2...	Unidentified	Google Compute Engine N1 st... Cloud Instance		VIRTUAL_MACHINE_I... Updated: Jan 20 2020	-
pooja-win-final 10.150.0.13,35.236.248.2...	Unidentified	Google Compute Engine N1 st... Cloud Instance		VIRTUAL_MACHINE_I... Updated: Jan 20 2020	-
instance-3 10.142.0.7	Unidentified	Google Compute Engine N1 st... Cloud Instance		VIRTUAL_MACHINE_I... Updated: Jan 20 2020	-
sada-test-instance 10.142.0.2	Unidentified	Google Compute Engine N1 st...		VIRTUAL_MACHINE_I... Updated: Jan 20 2020	-

MANUFACTURER

Amazon Web Ser...	1.03K
Lenovo	950
Apple	301
Microsoft	71
VMware	45
Google	24
Dell	20
Unidentified	12
Asus	1
HPE	1
Intel	1
MSI	1
Parallels Internati...	1

Show less

TAGS

Agentless_Tracki...	1.50K
Assets NO Asset ...	1.49K
Last30Days	1.45K
Cloud Agent	1.34K
Scanned in 180-D	1.32K

3.32K

Total Software

Last 30 Days ▾

TOP SOFTWARE CATEGORIES



TOP SOFTWARE PUBLISHERS



LICENSE

Commercial 2.57K
Open Source 746

PLATFORM

64-Bit 379
32-Bit 73

LIFECYCLE

Beta 56
GA 1.18K
EOL 1
EOL/EOS 751
OS Dependent 502
▾ 2 more

END OF LIFE

EOL 6 to 9 months 2

Group Software by: Market Version ⊗ ▾Type: Application ▾

1 - 50 of 75



CATEGORY	PUBLISHER	PRODUCT	MARKET VERSION	INSTANCES ▾
Network Application / Internet Br...	Google	Chrome	78	514
Network Application / Internet Br...	Microsoft	Internet Explorer	11	502
Network Application / Internet Br...	Google	Chrome	79	265
Network Application / Internet Br...	Apple	Safari	13	224
Network Application / Internet Br...	Mozilla	Firefox	70	189
Network Application / Internet Br...	Mozilla	Firefox	71	153
Network Application / Internet Br...	Apple	Safari	12	100
Network Application / Internet Br...	Mozilla	Firefox	69	82
Network Application / Internet Br...	Google	Chrome	77	74

2.61K

Total Assets

MANUFACTURER

Unidentified	1.16K
Apple	358
Xiaomi	188
Samsung	134
OnePlus	101
Lenovo	56
Huawei	24
HMD Global	22
Asus	21
Google	14
Vivo	13
HTC	12
LG	8
Unknown	7
Oppo	3
Sony Mobile	2
Amazon.com	1
Leshi	1
TRANSSION	1

Show less

OS CONFIDENCE

	2.05K
	21
	62
	480

Search for assets...

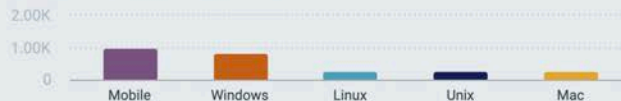
Last 30 Days



TOP HARDWARE CATEGORIES



TOP OPERATING SYSTEMS CATEGORIES



Group Assets by ...

1 - 50 of 2610



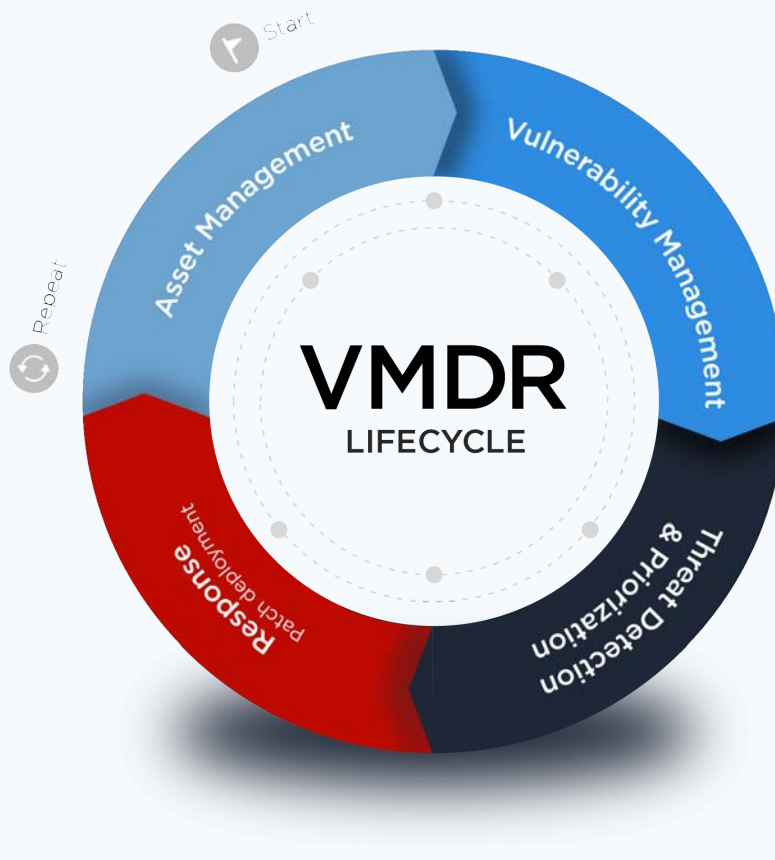
ASSET	OPERATING SYSTEM	HARDWARE	LAST USER	INVENTORY
POLYCOM_0004F27A8C07 192.168.254.44 00:04:f2:7a:8c:07	- 			Passive Sensor First: Aug 14 2019 Last: 3 minutes ago
10.101.15.32 - 4c:cc:6a:a5:bf:c4	- 			Passive Sensor First: Jan 16 2020 Last: 8 minutes ago
IPHONE 192.168.250.118, 192.168.249.... f4:0f:24:86:52:03	Apple iOS 13 	Apple iPhone Smartphone 		Passive Sensor First: Aug 14 2019 Last: 5 minutes ago
CONFERENCE114043POM... 192.168.249.149, fe80::aeaf:b9... ac:af:b9:fd:8c:38	Google Android Nougat 7.1.1 	Samsung Galaxy Tab 4 SM-T350 Tablet 		Passive Sensor First: Jun 20 2019 Last: 5 minutes ago
114186MBP15 192.168.249.206, fe80::c6c:b18... 64:5a:ed:e7:fd:4b	Apple macOS Mojave 10.14.6 	Apple Computers 		Passive Sensor Last: 7 minutes ago
US02-IDF31-3002-00180... 192.168.248.50, 192.168.248.1... 00:18:0a:48:b3:60	BSD 	Unidentified 		Passive Sensor Last: 5 minutes ago

Vulnerability Management

Detect vulnerabilities by QID
CVE-to-QID mapping
CVSSv2 and CVSSv3 base scores

Security Configuration Assessment

CIS Benchmarks
Security-related misconfigurations

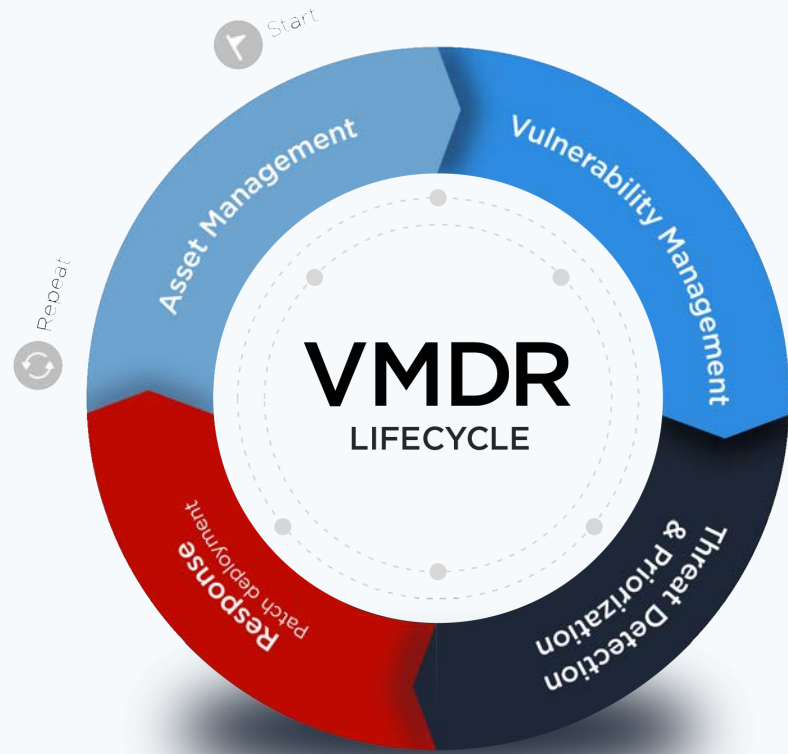


Prioritization

- Using real-time threat context
- Real-world exploits
- Proof of Concepts
- Exploit categorization
- Exploit severity

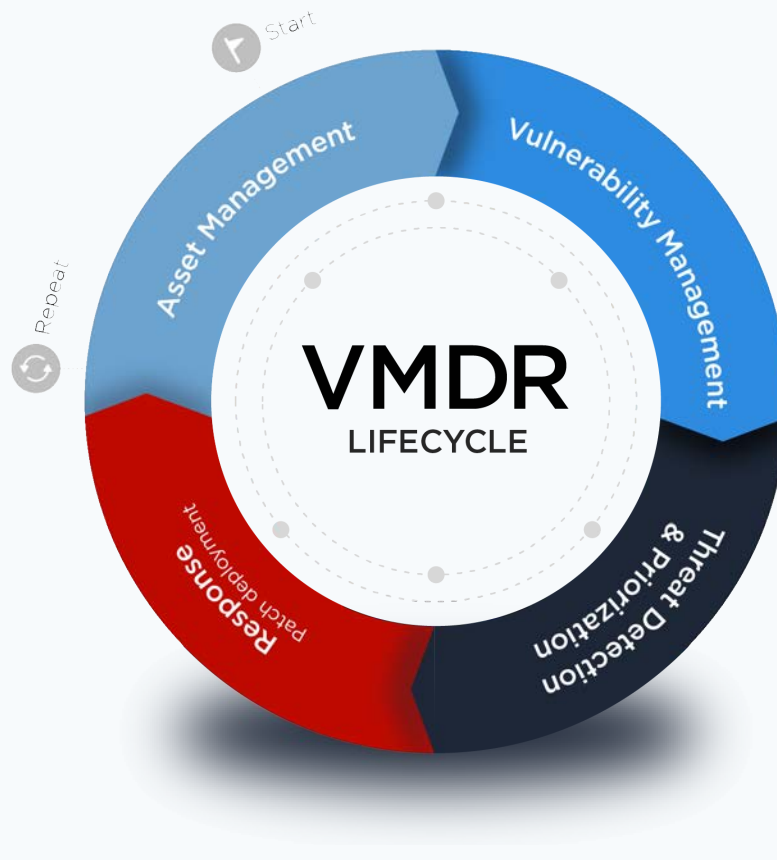
Machine Learning

Contextual Awareness



Remediation

- Automatically correlate vulnerabilities to patches
- End-to-end User Interface workflows
- Fit-for-purpose visualizations and recommendations
- Orchestration for remediation



Patch Catalog

4

Total Patches

APP FAMILY

Windows 4

VENDOR

Microsoft 4

UPDATE TYPE

Security Patches 4

TYPE

OS 4

Patch

✕ cve:cve-2020-0601



Actions (4)



Filters 2

View Details

Add to Existing Job

Add to New Job

Remove Patch



...pda...



ARCHIT

X64

1 - 4 of 4



PATCH STATUS

MISSING INSTALLED

1 0

3 0

1 1

4 3

Asset Tags (5)

Finance × Operations × Engineering × HR-HQ × HR-France ×

Vulnerability Age



RTIs (9)

- ✓ Zero Day (10)
- ✓ High Lateral Movement (32)
- ✓ Active Attacks (12)
- ✓ Wormable (13)
- ✓ Machine Learning Probability (32)
- DOS External (25)
- ✓ High Data Loss (17)
- Vulnerable to DOS (28)
- ✓ Easily Exploitable (50)
- ✓ Exploit Kit Available (34)
- ✓ Unpatchable (23)
- ✓ Public Exploit (13)

Prioritized Assets **38**
Total 379

10%
of Total

Prioritized Vulnerabilities **37**
Total 1.34K

2.75%
of Total

Available Patches **05**
Patch Now

Prioritization Engine – Machine Learning

Written in Python and TensorFlow

Dataset of 120,000+ Vulnerabilities

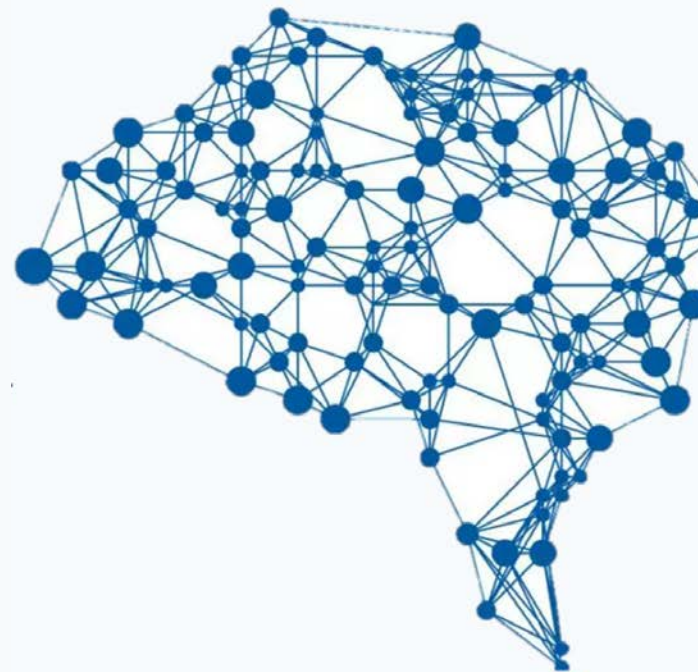
132 Vulnerability Features

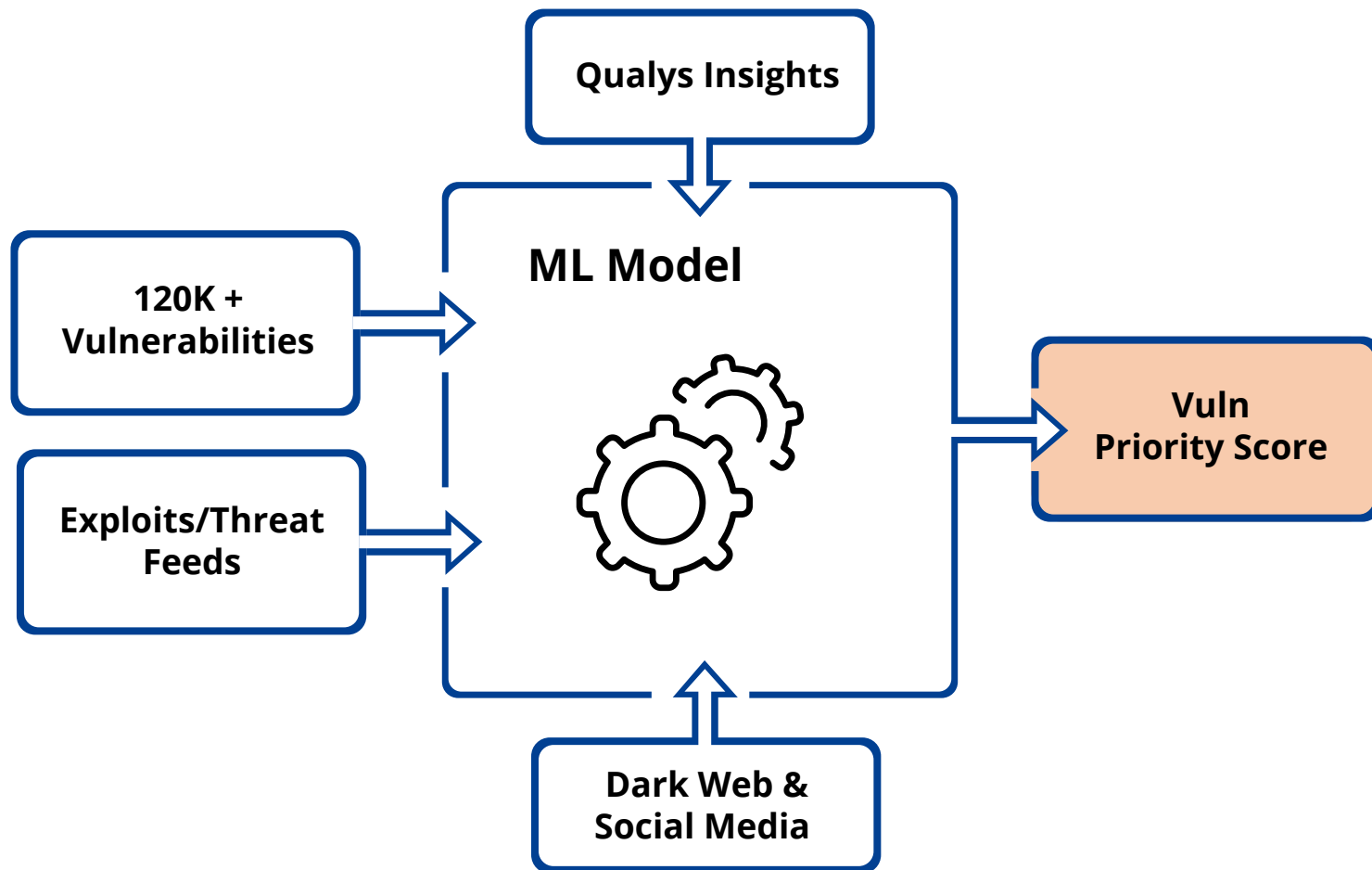
Live Exploits / Proof Of Concepts

Historical Threat Patterns

Historical Vulnerable Software/Vendor

Dark Web and Social Media References





Contextual Awareness

Your Network is Unique to You

External Facing Assets

Business / Customer Applications

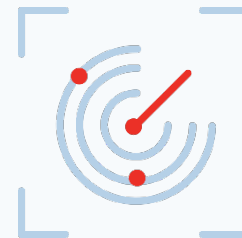
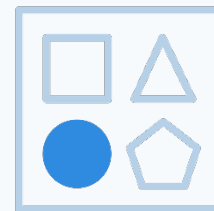
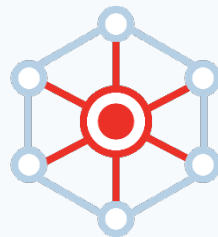
Network Reachability / Cloud Security Groups

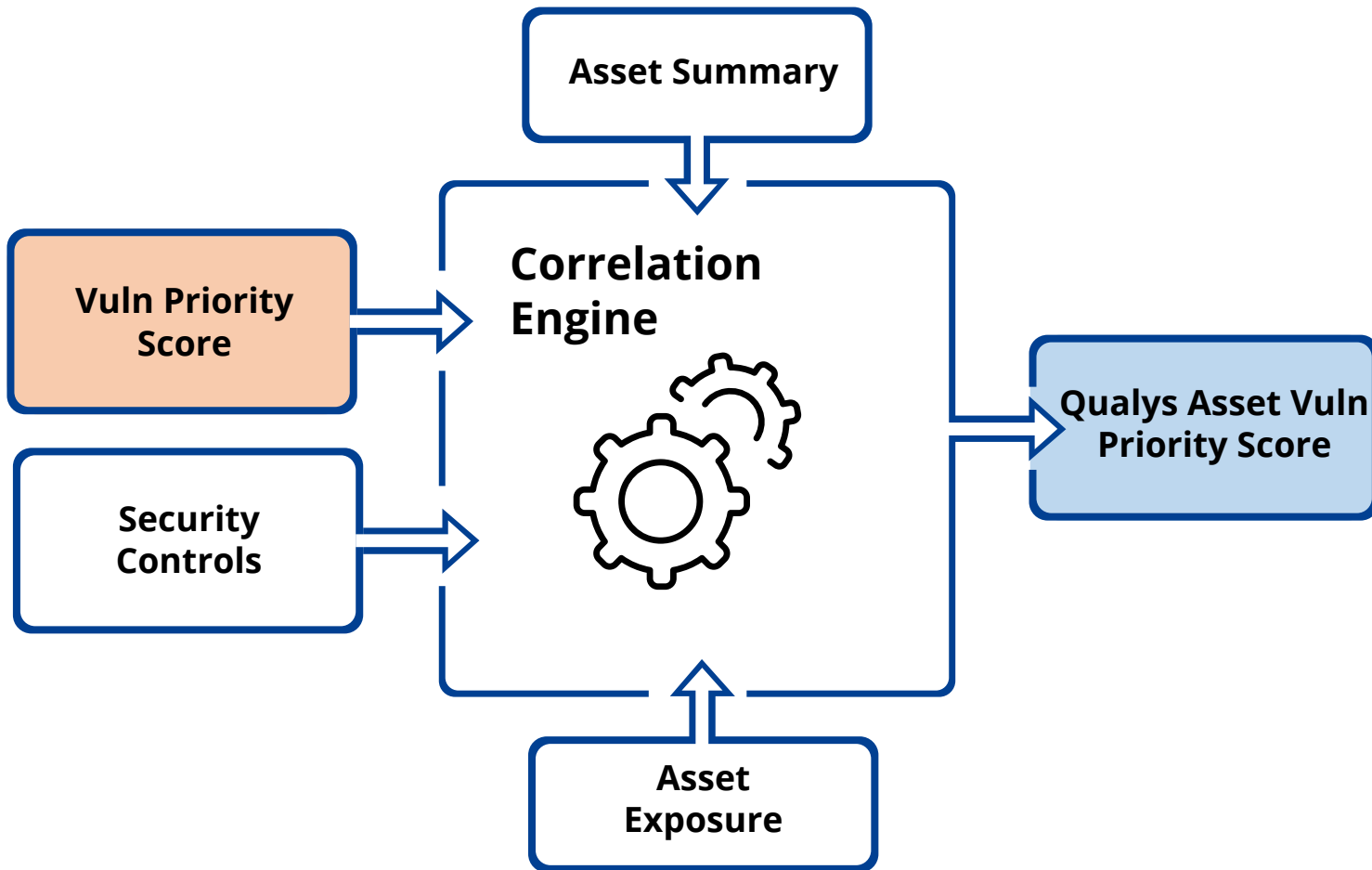
Zero-Trust Networking / Micro-Segmentation

Data Sensitivity and Data Access Governance

Asset System Configuration

Security Control Validation







VMDR Concept Demo

VMDR comes with much more

Unlimited Cloud Agents

Unlimited Virtual Scanners

Unlimited Passive Sensors

Certificate Inventory

Cloud Inventory

Container Inventory

Mobile Device Inventory

Asset Categorization

Asset Normalization

Vulnerability Management

Configuration Assessment

CIS Benchmarks

Continuous Monitoring

Patch Detection and CVE Correlation

Available February 2020



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Thank You

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