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Threat Hunting with Deceptive Defense and Splunk Enterprise Security

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Threat Hunting

- Alert triage using threat intelligence and other data sources
- Primarily outlier detection
- Too many alerts and Too many false positives
- Typically less than 5% of alerts are investigated

" Nearly 45% of Organisations hunt on Ad hoc basis"

SANS Institute, 2017 Report

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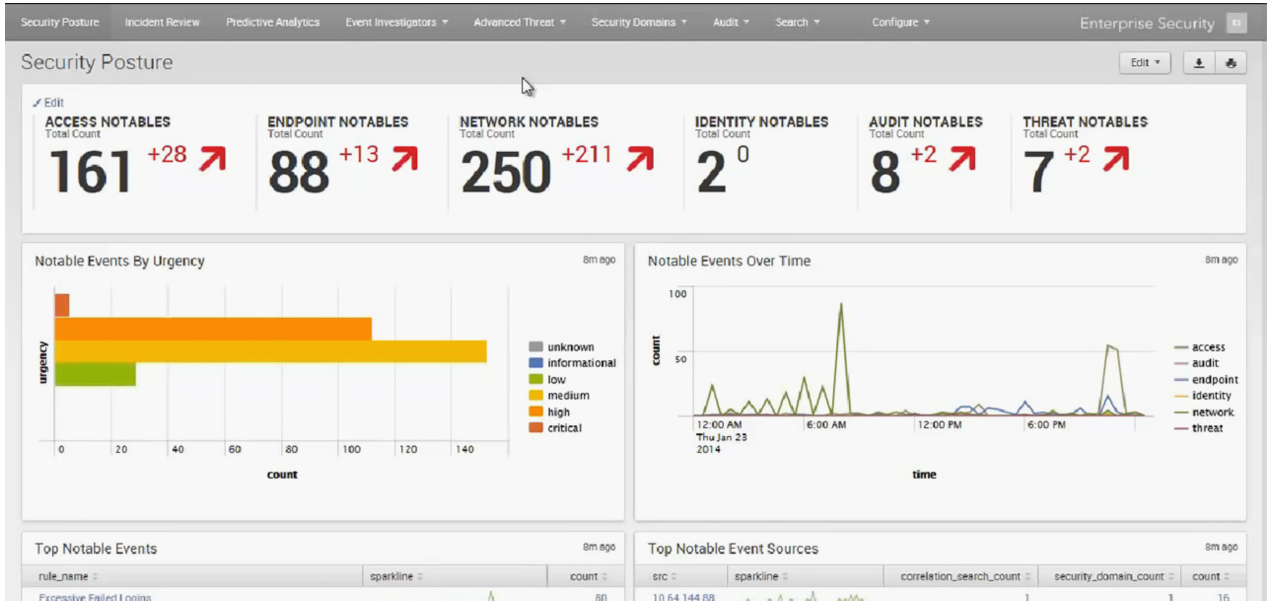
Deceptive Security

- Reincarnation of Honeypots, Honeyfiles, Honeydata and Honeynet
- Multiple forms : Decoys, Breadcrumbs, Lures, Baits
- Active Approach —> High Fidelity Alert
- “Deploy deceptions on/around hosts with notable events”

Splunk Enterprise Security Notables

- Use Splunk ES Notable Events as Starting and Ending Point
- **Use Data Science** to rank hosts and notable events for hunting

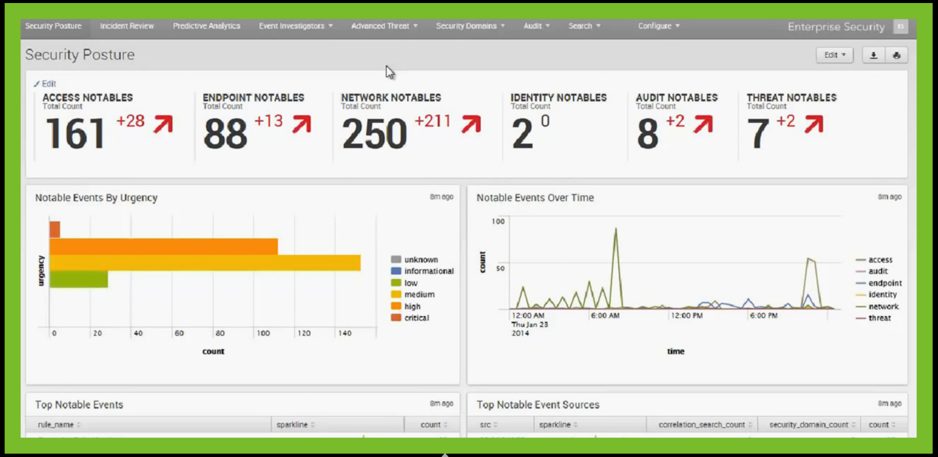


rule_name	sparkline	count
Excessive Failed Logins		80

src	sparkline	correlation_search_count	security_domain_count	count
10.64.144.88		1	1	16

Threat Hunting

Splunk ES -Notables



Security Posture

ACCESS NOTABLES
Total Count
161 +28 ↗

ENDPOINT NOTABLES
Total Count
88 +13 ↗

NETWORK NOTABLES
Total Count
250 +211 ↗

IDENTITY NOTABLES
Total Count
2 0

AUDIT NOTABLES
Total Count
8 +2 ↗

THREAT NOTABLES
Total Count
7 +2 ↗

rule_name	sparkline	count

src	sparkline	correlation_search_count	security_domain_count	count

1. Threat Hunting Intelligence Engine (THIN)

- Ranking of Hosts & Notables
- Determine Deception Strategy

2. Deception Platform

Deploy Deceptions

3. THIN

Based on Deception alert/no alert recompute notable ranking

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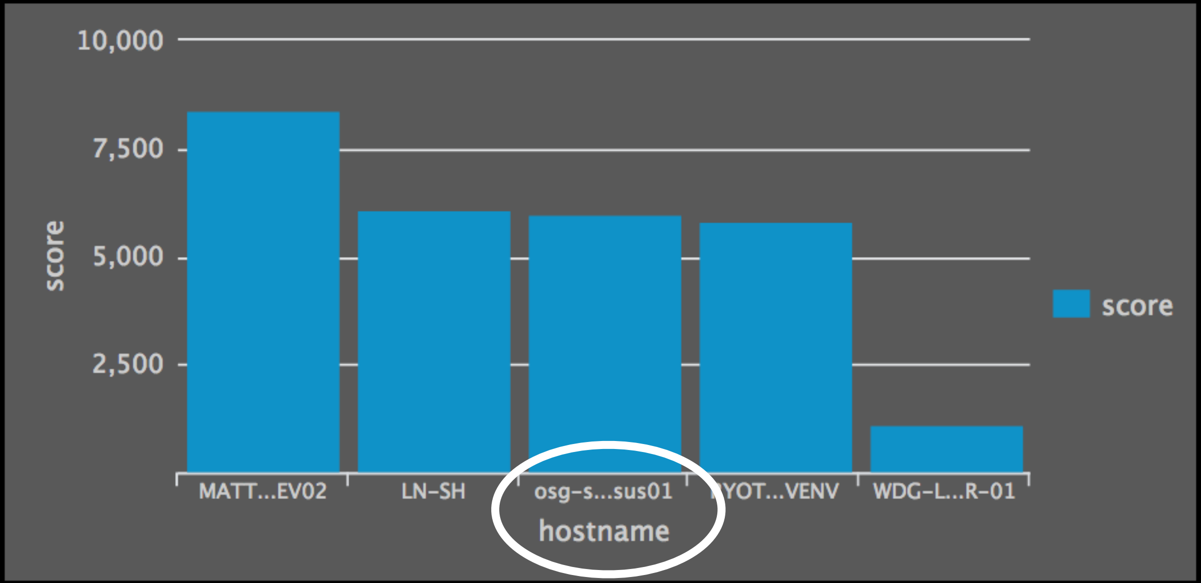
Step 1: Ranking of Hosts and Notables

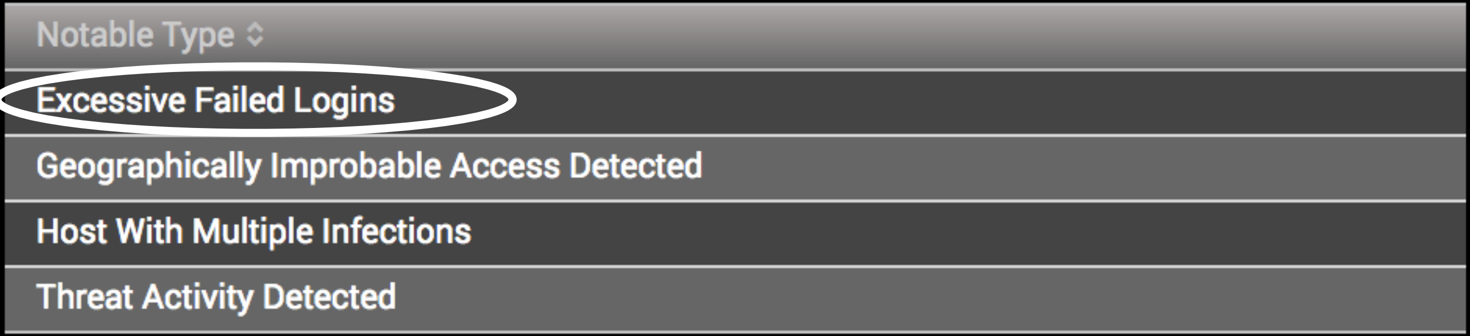
Host Ranking before Deception



Number of Candidate Notables

243

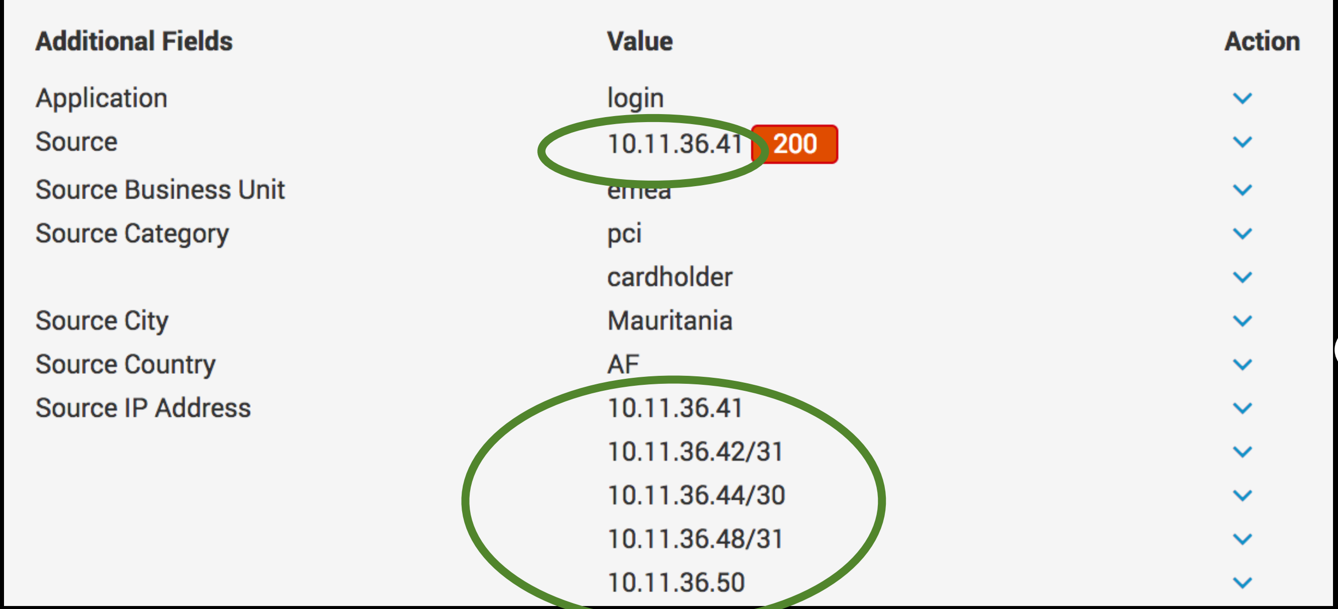
Types of Candidate Notables



Notable Type ⇕
Excessive Failed Logins
Geographically Improbable Access Detected
Host With Multiple Infections
Threat Activity Detected

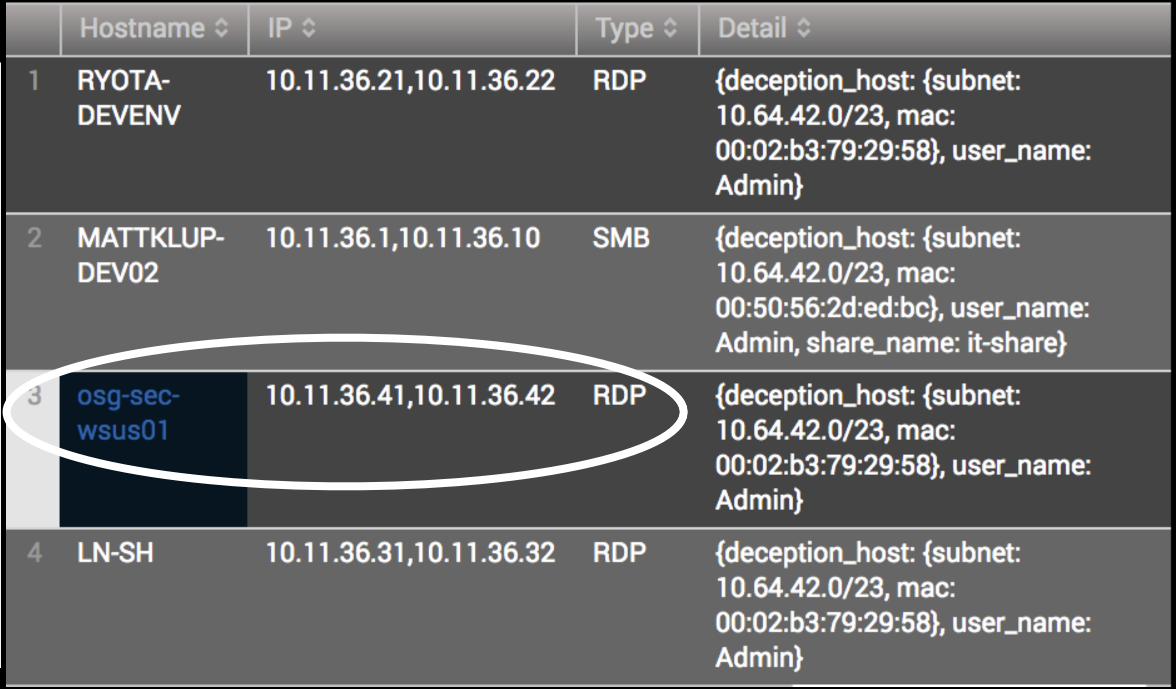
Step 2: Recommend Deceptions

Excessive Failed Logins Notable



Additional Fields	Value	Action
Application	login	⌄
Source	10.11.36.41 200	⌄
Source Business Unit	emea	⌄
Source Category	pci	⌄
	cardholder	⌄
Source City	Mauritania	⌄
Source Country	AF	⌄
Source IP Address	10.11.36.41	⌄
	10.11.36.42/31	⌄
	10.11.36.44/30	⌄
	10.11.36.48/31	⌄
	10.11.36.50	⌄

Breadcrumb Details

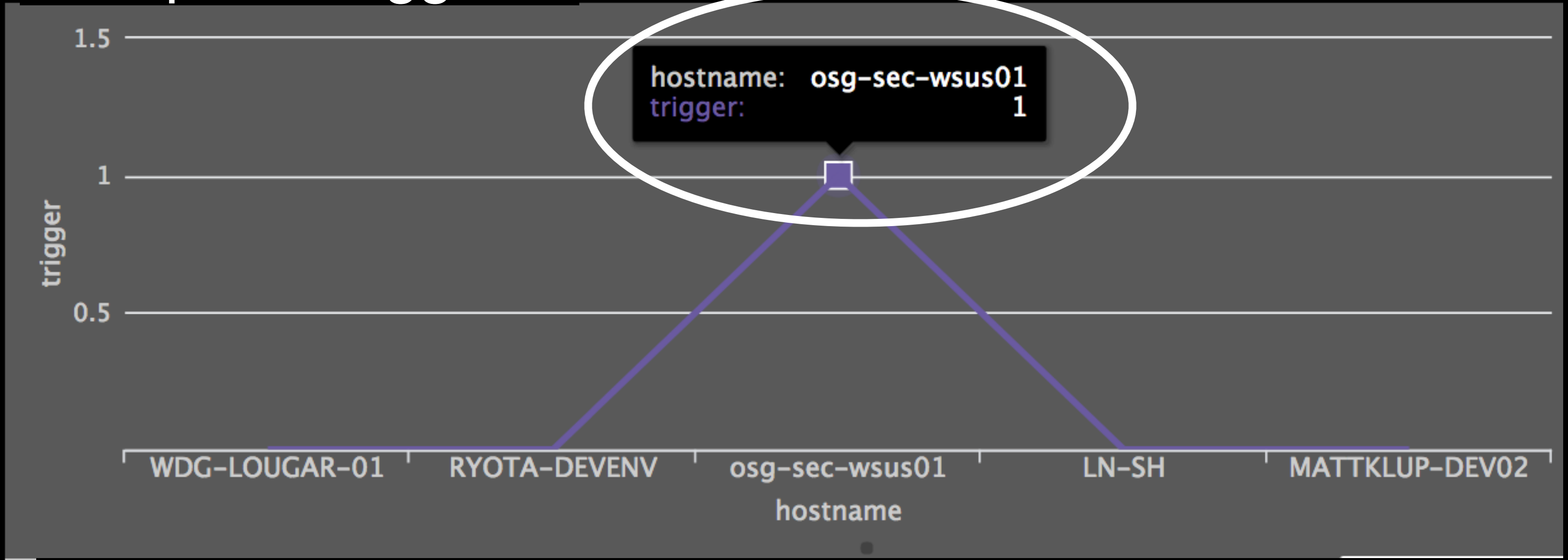


	Hostname ⇕	IP ⇕	Type ⇕	Detail ⇕
1	RYOTA-DEVENV	10.11.36.21,10.11.36.22	RDP	{deception_host: {subnet: 10.64.42.0/23, mac: 00:02:b3:79:29:58}, user_name: Admin}
2	MATTKLUP-DEV02	10.11.36.1,10.11.36.10	SMB	{deception_host: {subnet: 10.64.42.0/23, mac: 00:50:56:2d:ed:bc}, user_name: Admin, share_name: it-share}
3	osg-sec-wsus01	10.11.36.41,10.11.36.42	RDP	{deception_host: {subnet: 10.64.42.0/23, mac: 00:02:b3:79:29:58}, user_name: Admin}
4	LN-SH	10.11.36.31,10.11.36.32	RDP	{deception_host: {subnet: 10.64.42.0/23, mac: 00:02:b3:79:29:58}, user_name: Admin}

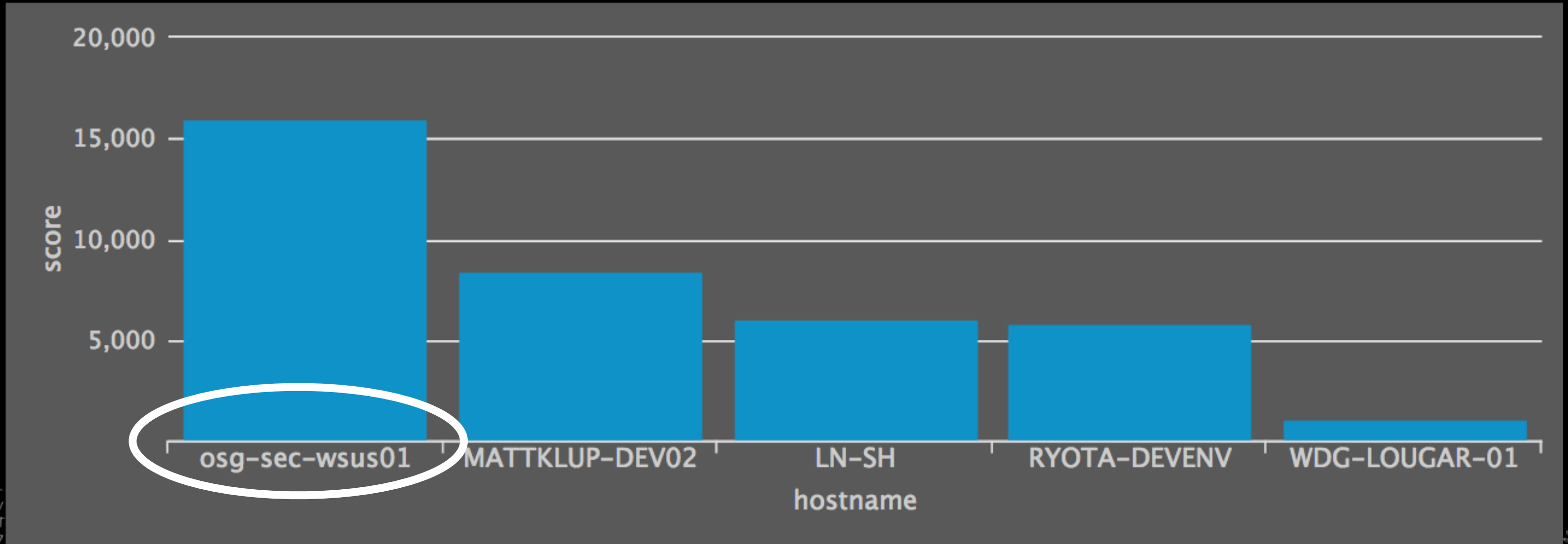
Host osg-sec-wsus01 (10.11.36.41) has failed login authentication 6 times using 6 usernames against 1 target in the last hour

Step 3: Update Ranking using Deception Alerts

Deception Triggered



Updated Ranking based on Deception Alerts



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Summary

- Need to deal with alert deluge
- Need Proactive Approach for Threat Hunting
- Fusion of Data Science and Deceptive Security provides an active approach for Threat Hunting