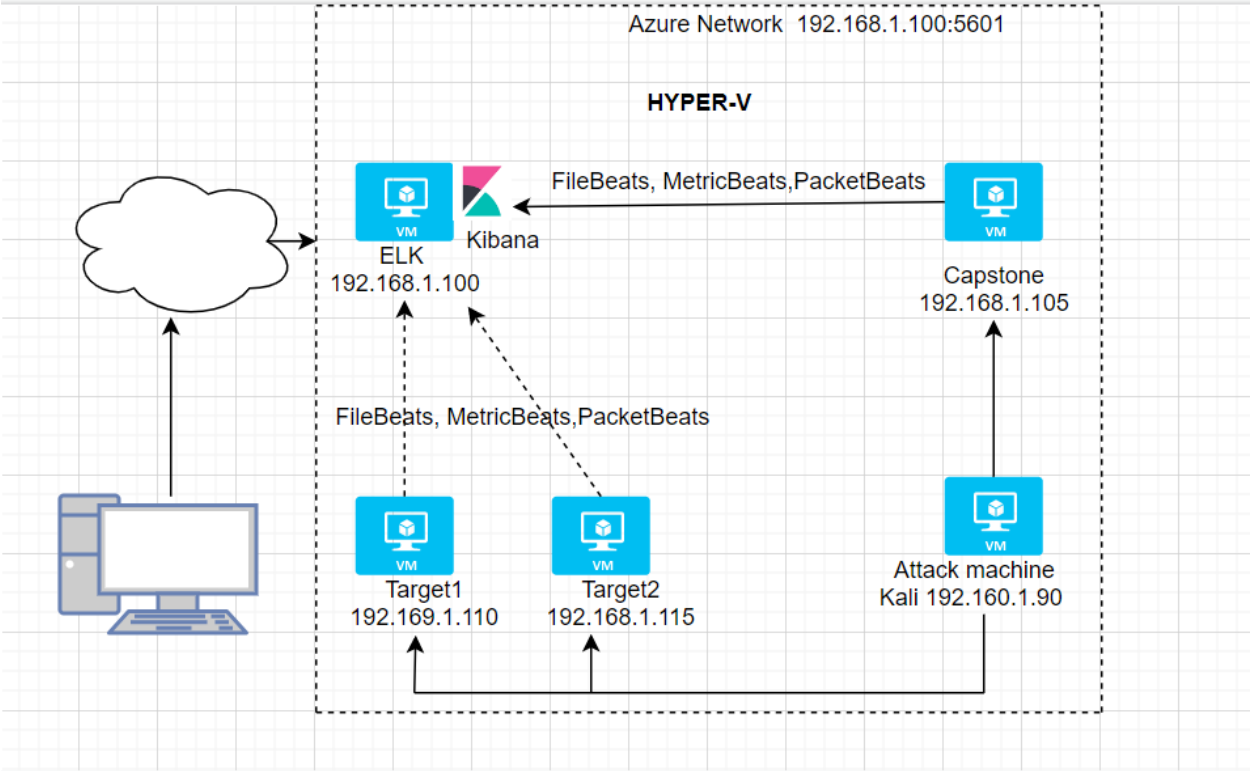
Blue Team: Summary of Operations

Table of Contents

Network Topology



The following machines were identified on the network:

Capstone

Operating System: Ubuntu 10.04.1 LTS
Purpose: The Vulnerable Web Server
IP Address: 192.168.1.105

Kali

Operating System: Kali GNU/Linux Rolling

Kernel: Linux 5.4.0-kali3-amd64
Purpose: The Penetration Tester
IP Address: 192.168.1.90

ELK

Operating System: Ubuntu 18.04.4 LTS
Purpose: Elasticsearch and Kibana, collecting information by using packetbeats, filebeats, metricbeats.
IP Address: 192.168.1.100

Target1

Operating System: Debian GNU/Linux 8 (jessie)
Purpose: The WordPress Host
IP Address: 192.168.1.110

Target2

Operating System: Debian GNU/Linux 8 (jessie)
Purpose: The WordPress Host
IP Address: 192.168.1.115

Description of Targets

The target of this attack was: Target1 192.168.1.110
Target2 192.168.1.115

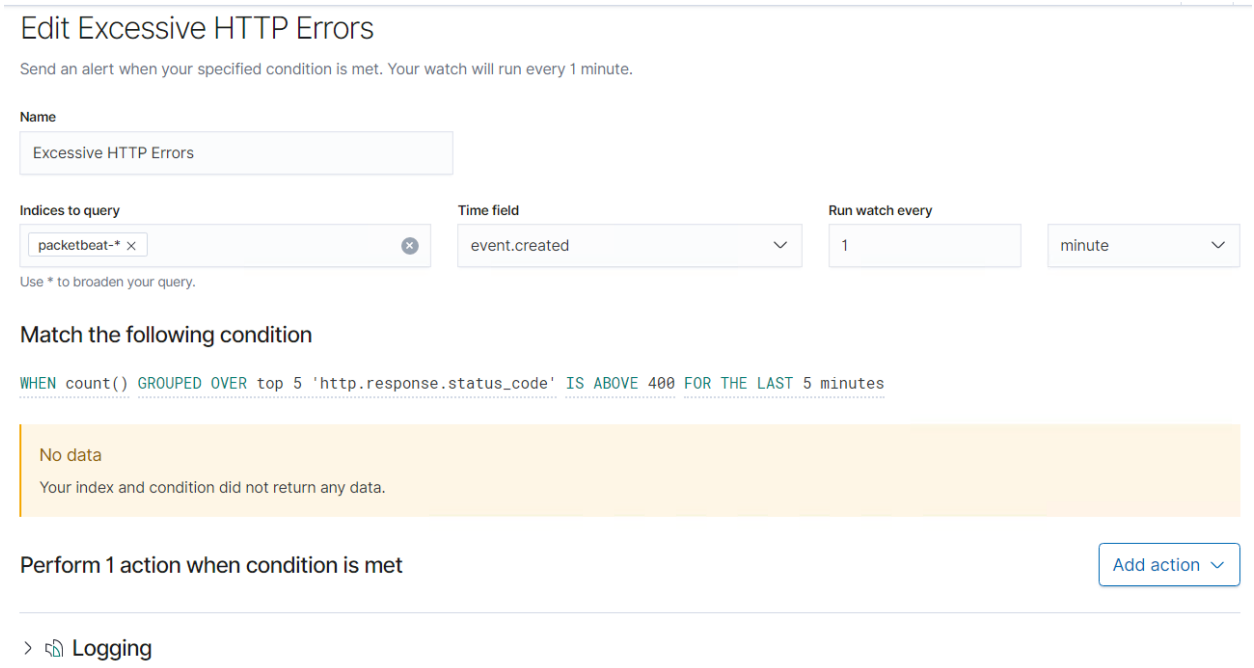
Target 1 is an Apache web server and has SSH enabled, so ports 80 and 22 are possible ports of entry for attackers.
As such, the following alerts have been implemented:

Monitoring the Targets

Traffic to these services should be carefully monitored. To this end, we have implemented the alerts below:

Excessive HTTP Errors

Excessive HTTP Errors is implemented as follows:

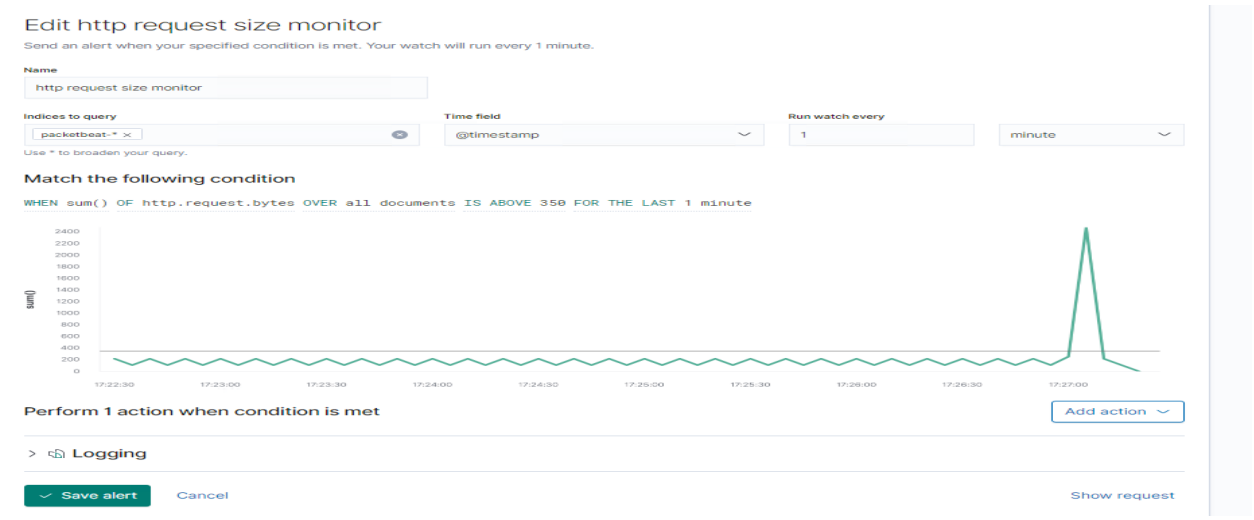


Metric: packetbeats, http.response.status_code

Threshold: The TOP 5 get ABOVE 400 for the last 5 minutes
Vulnerability Mitigated: User Enumeration/Brute Force Attack
Reliability: Medium. Threshold is dependent on the quantity of users who engage with the application and it should be adjusted accordingly.

HTTP Request Size Monitor

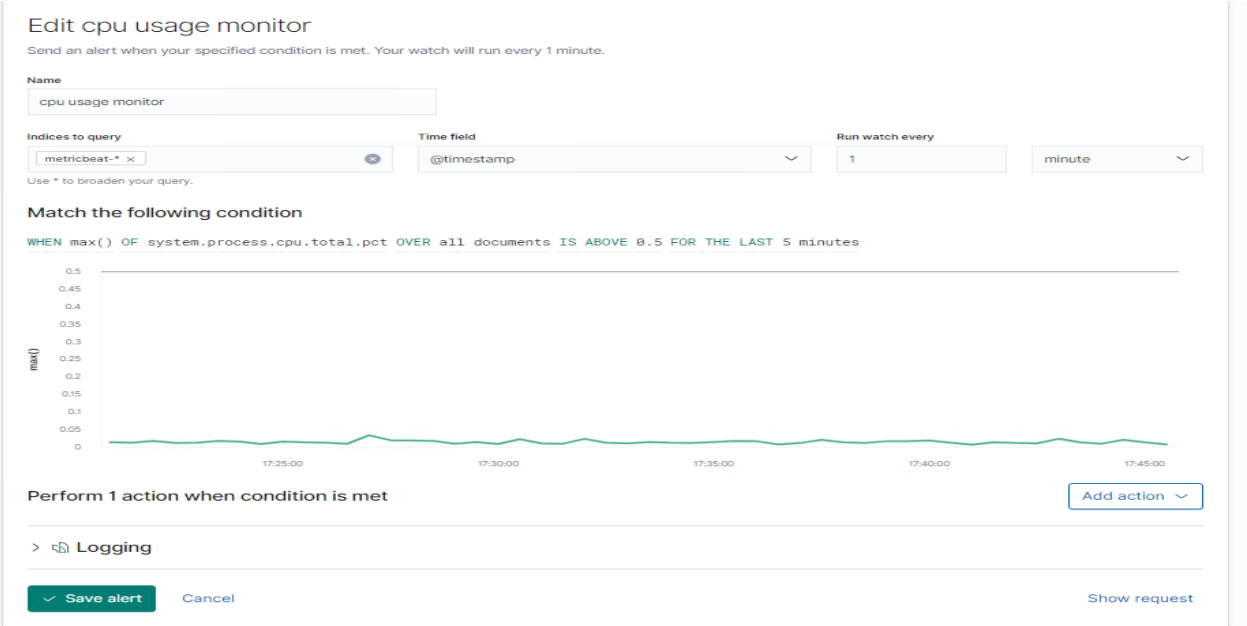
HTTP Request Size Monitor is implemented as follows:



Metric: packetbeats,WHEN sum() of http.request.bytes OVER all documents
Threshold: ABOVE 350 FOR THE LAST 1 minute
Vulnerability Mitigated: Code injection in HTTP requests
Reliability: Low/medium. Alert can generate lots of false positives/false negatives requests.

CPU Usage Monitor

CPU Usage Monitor is implemented as follows:



Metric: Metricbeats, WHEN max() OF system.process.cpu.total.pct OVER all documents
Threshold: ABOVE 0.5 FOR THE LAST 5 minutes
Vulnerability Mitigated: Malicious software, programs running or DDoS Attacks.
Reliability: The alert is reliable, but can be triggered by regular daily usage. Medium.