A10

Always Secure. Always Available.

新一代Web應用程式防護

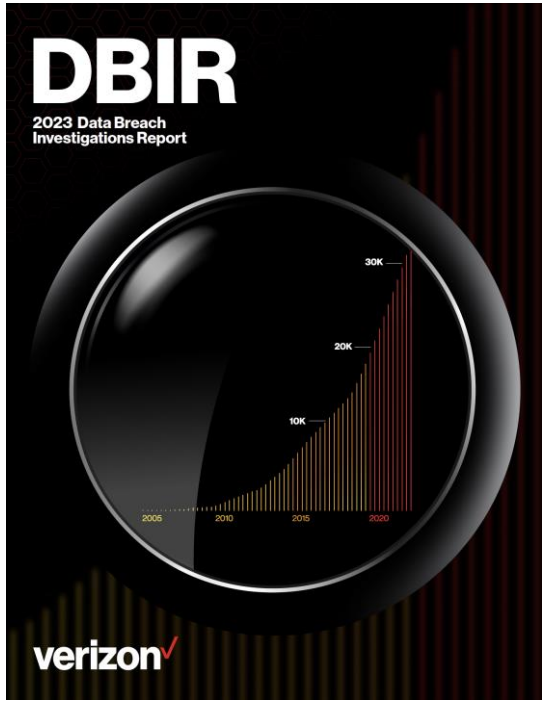
Allen Lin

網路攻擊趨勢

~ 40%

~ 20%

~ 30%



2023 Data Breach Investigations Report

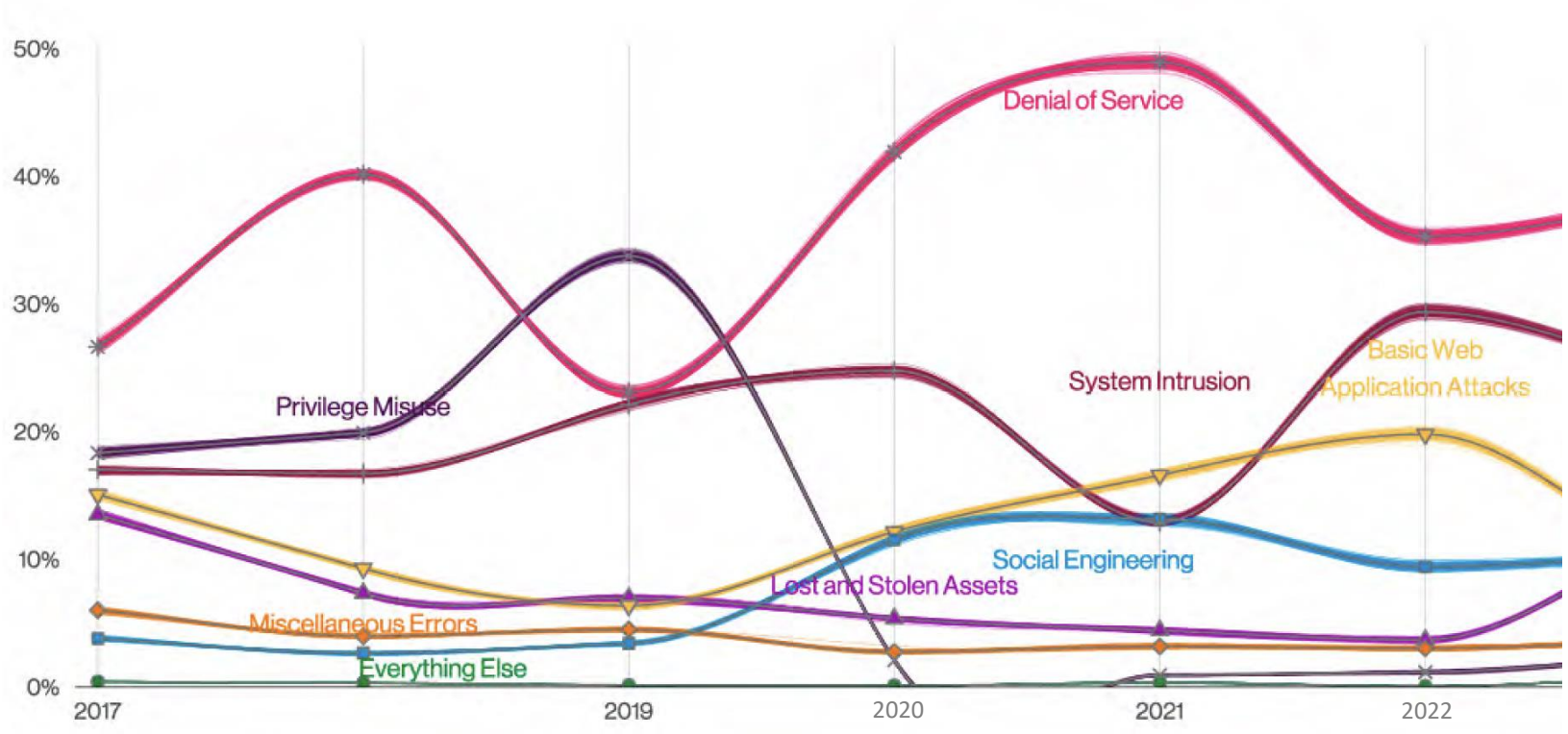


Figure 25. Patterns over time in incidents

The State of Web Application Security

- 應用程式和資料洩漏的風險提升
  - 法規的罰鍰
  - 智財權的損失
  - 永久的商譽損害
- 因為WAF的誤判導致安全團隊的負擔
- 現代應用程式架構導致部署和維運的複雜
- API大量的增加/使用

傳統 WAF vs Next-Gen WAF

50%

of generated alerts are false positives

- Positive security model combined with custom rules helps keep false positives rate of **1%**

57%

deploy WAF in full blocking mode

- **90%** of Fastly customers deploy WAF in full blocking mode

25%

efficacy without heavy tuning

- No learning mode required
- With advanced tactics like ML and context-based detection, efficacy can rise to high end of **95%**

Consolidation

WAF & ADC are separated devices

- Consolidation of solutions WAF, load balancing
- Simplify SSL certificate management for all apps at one place

Market Positioning

Gartner Magic Quadrant for WAAP 2022

Gartner Peer Insights Customers' Choice for WAF for the past five years

Gartner peerinsights customers' choice 2019

Gartner peerinsights customers' choice 2020

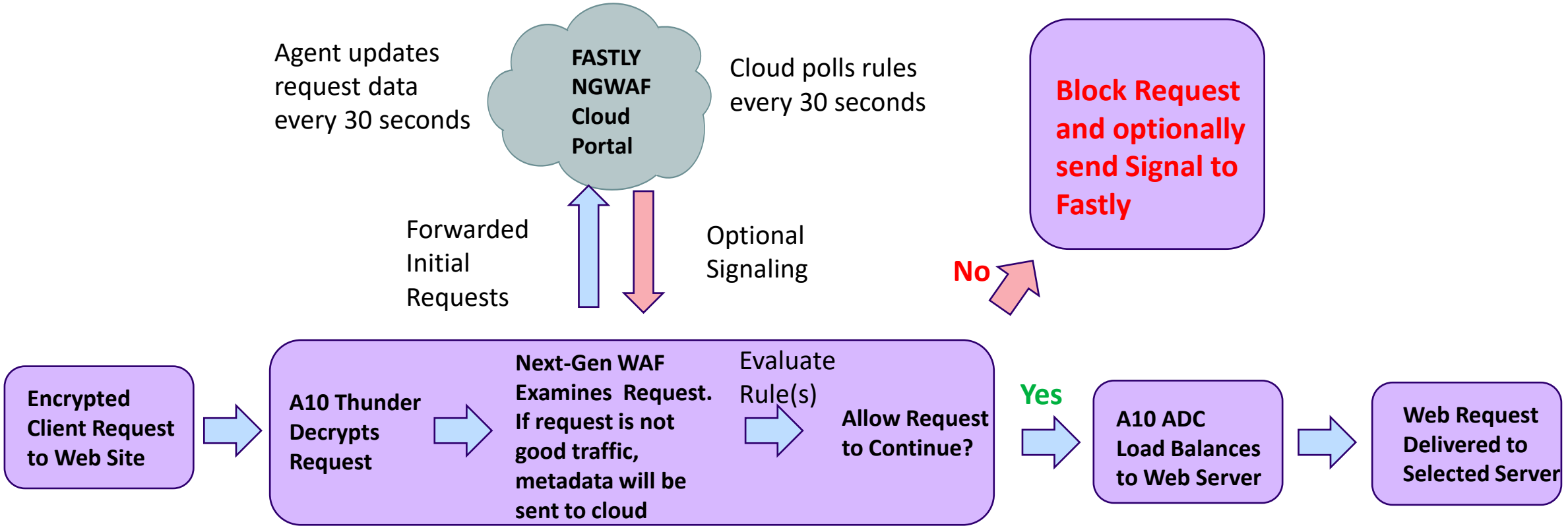
Gartner Peer Insights Customers' Choice 2021

Gartner Peer Insights Customers' Choice 2022

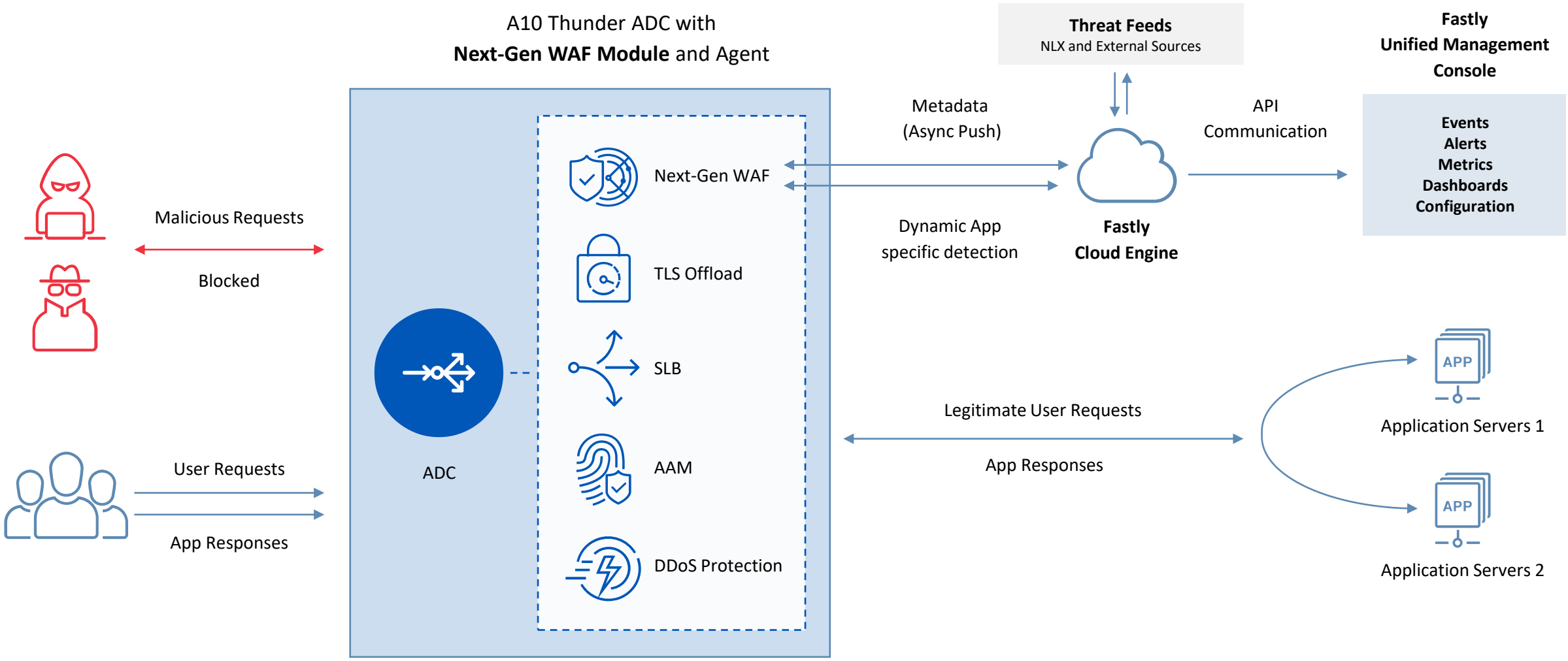
Gartner Peer Insights Customers' Choice 2023

A10 + fastly

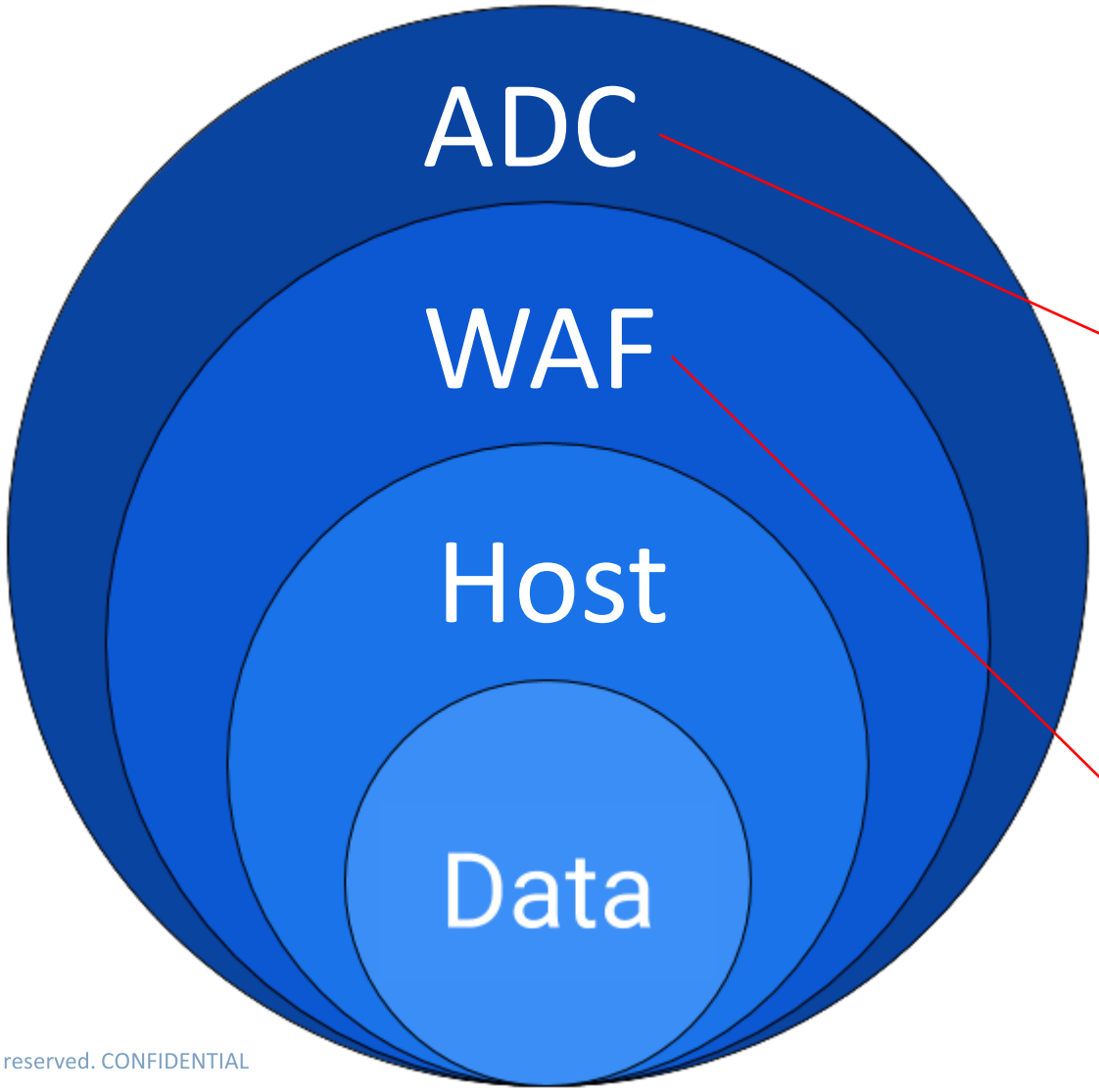
Next-Gen WAF Traffic Flow



How to work


A10 Thunder ADC with
Next-Gen WAF Module and Agent
Threat Feeds
NLX and External Sources
Fastly
Unified Management
Console
Metadata
(Async Push)
API
Communication
Events
Alerts
Metrics
Dashboards
Configuration
Malicious Requests
Blocked
Next-Gen WAF
TLS Offload
SLB
AAM
DDoS Protection
ADC
Dynamic App
specific detection
Fastly
Cloud Engine
Legitimate User Requests
App Responses
User Requests
App Responses
APP
Application Servers 1
APP
Application Servers 2

Defense in Depth



防火牆規則
應用程式識別
入侵防護

應用服務優化
應用服務存取政策
全域負載均衡
服務快速平行擴展
L3/L4 DDoS防護

Web應用程式保護
Web API防護
Web DDoS防護
IP Reputation
合規

A10 Next-Gen WAF 關鍵技術

Smart Parse

- 高精度的檢測方法
- 評估每個請求的上下文及其執行方式
- 實現近乎零的調整，無需學習，並且能夠立即開始偵測威脅

Threshold based blocking

- 預先定義的基於時間的閾值允許自動阻止
- 可以針對特定於使用者 Web 應用程式和業務邏輯的閾值、時間、有效性等變數進行自訂

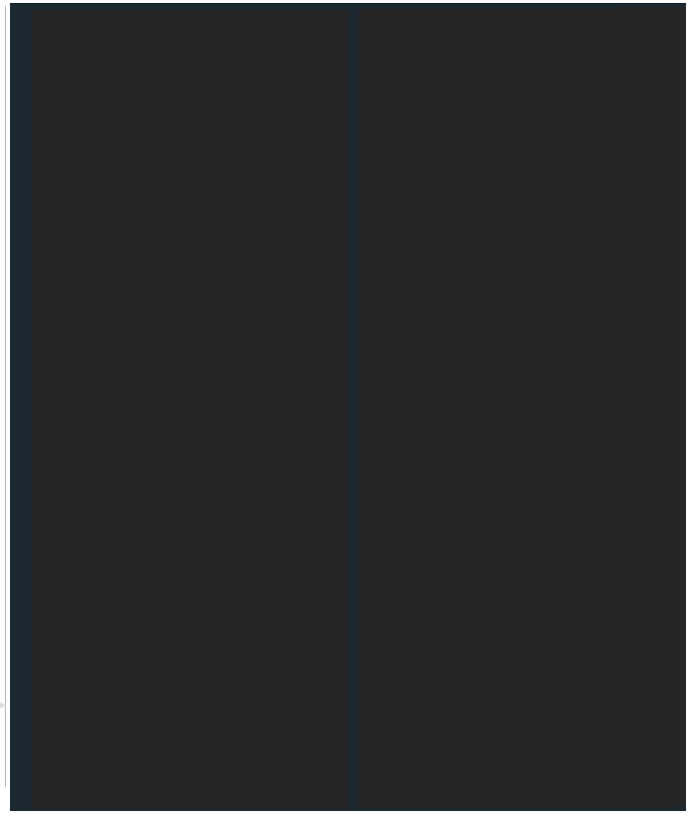
Network Learning Exchange

- 精準情報
- 聚合並關聯 Fastly 用戶的匿名攻擊訊息
- 識別潛在威脅並在它們對您的網站構成威脅之前向您發出警報

Smart Parse – How It Works

Web Example 1

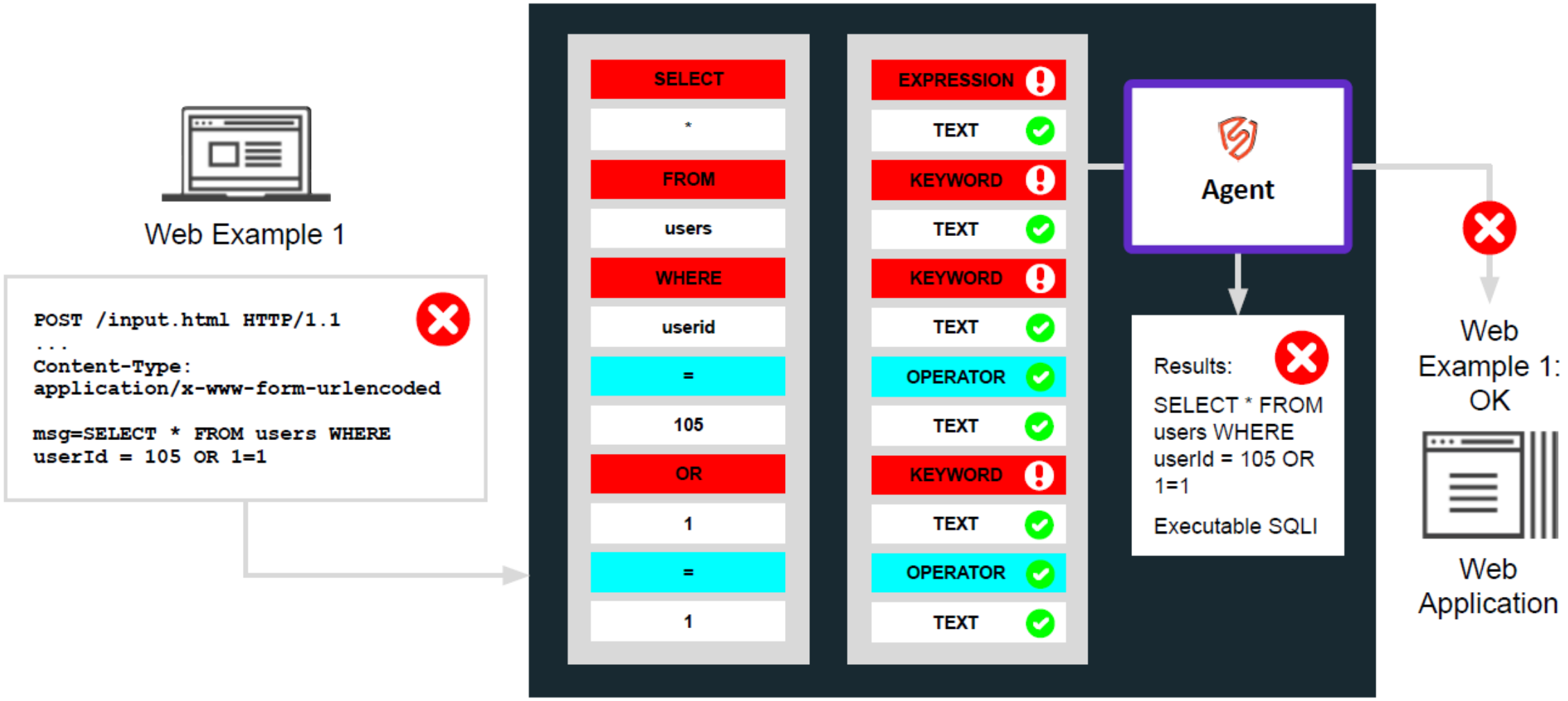
```
POST /input.html HTTP/1.1
...
Content-Type:
application/x-www-form-urlencoded

msg=SELECT * FROM users WHERE
userId = 105 OR 1=1
```



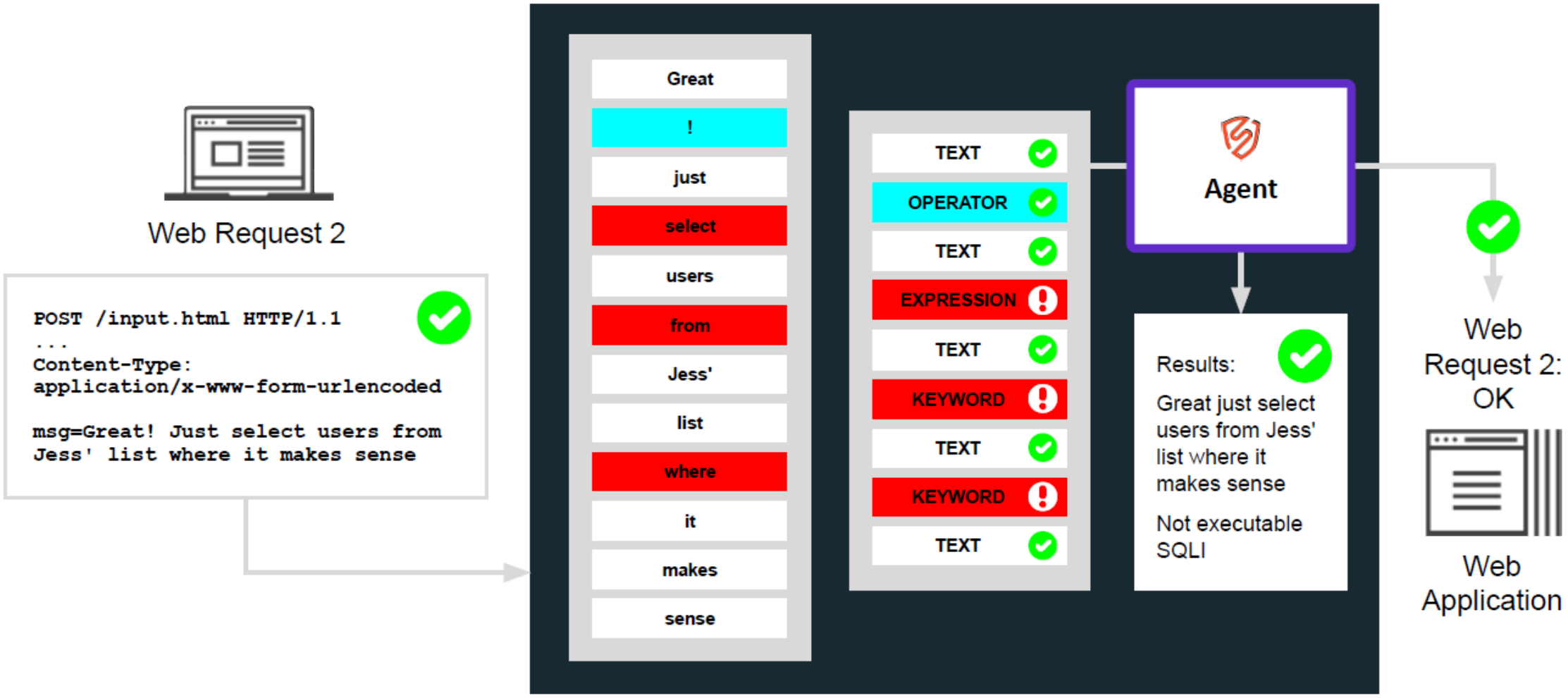
This means that the request is broken up into multiple pieces, and then tokenized as different categories (text, operator, expression, and keyword).

These tokenized patterns are then analyzed to see if they are executable. Thereafter, the agent makes the decision to block (or allow) requests

Example – No false negatives

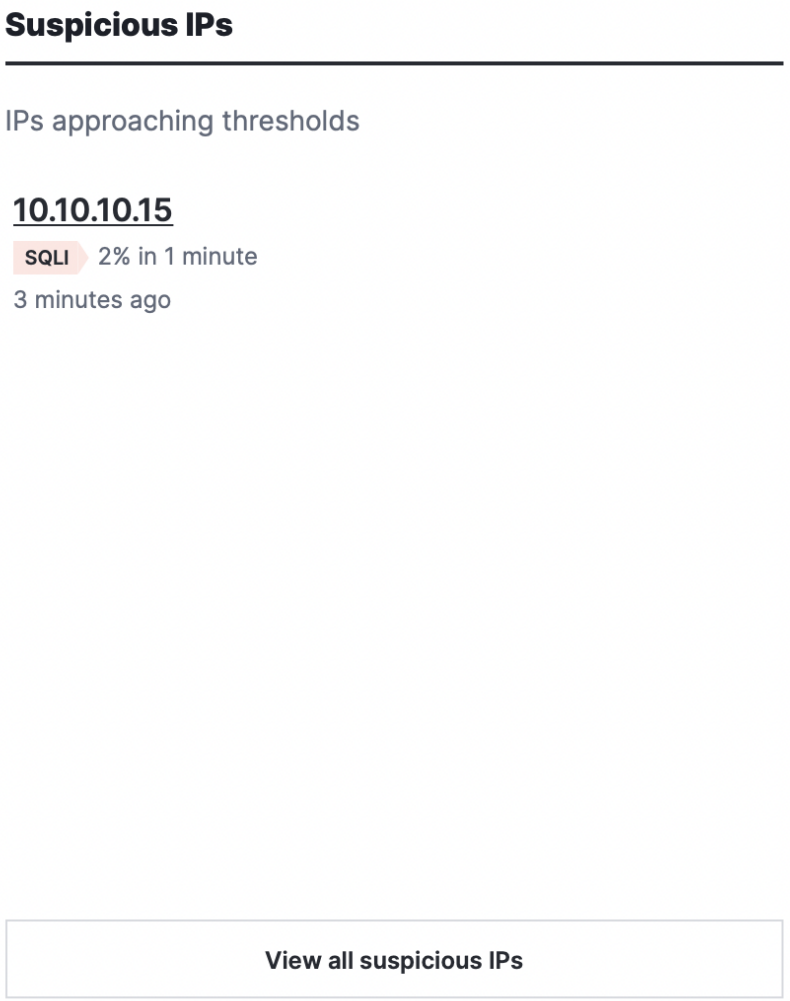


Example – No false positives

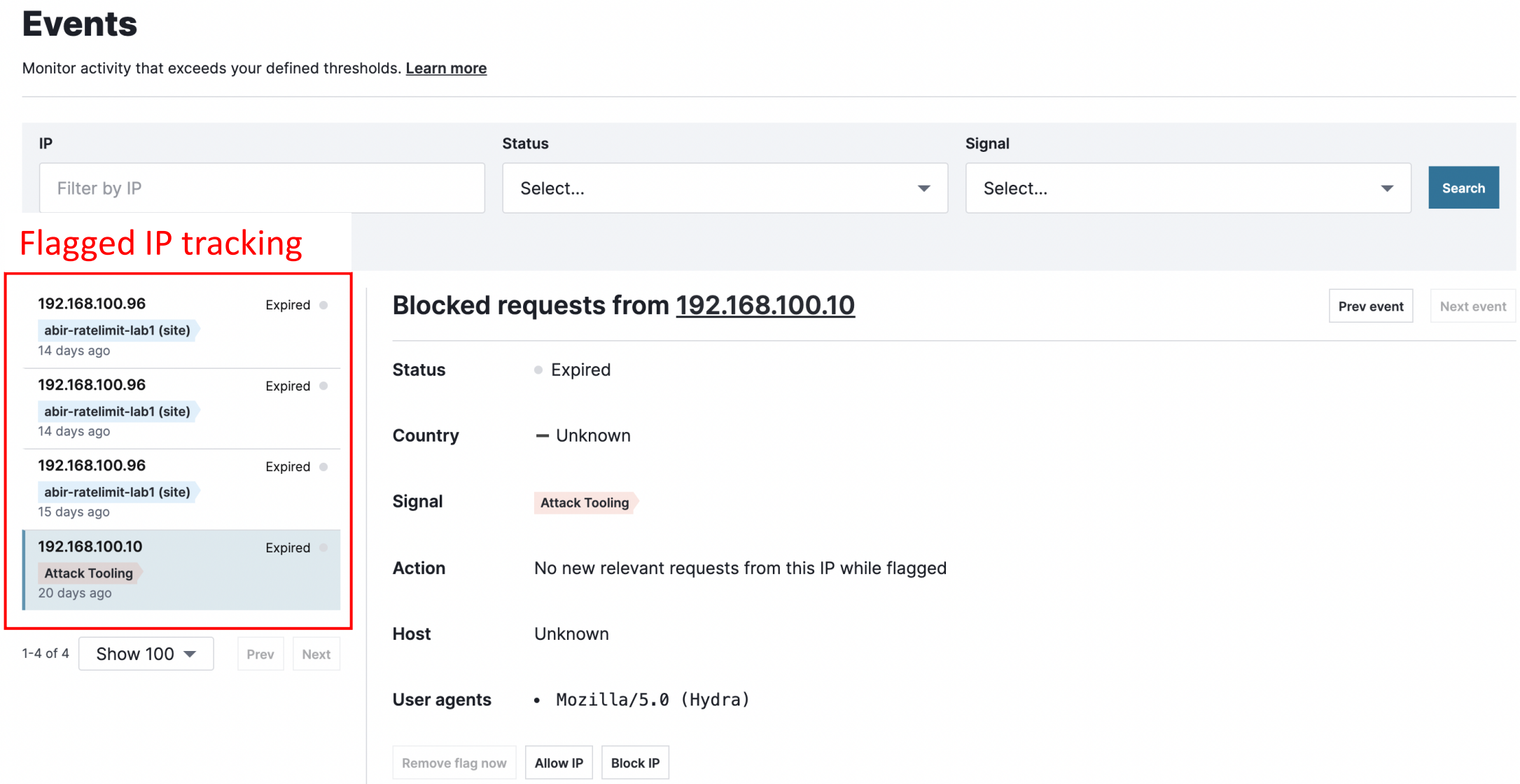


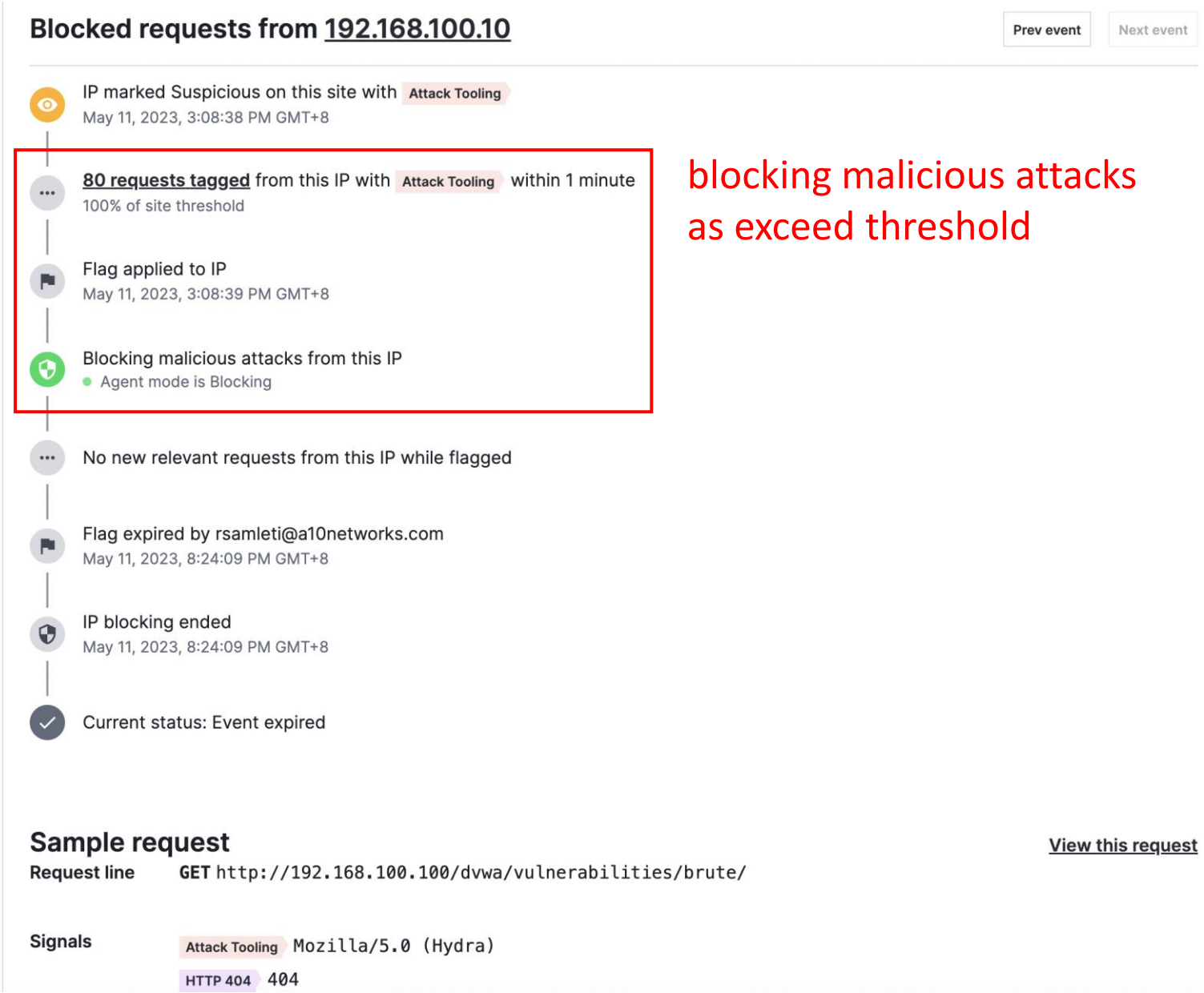
Suspicious IPs

- User IP is suspicious once matching the system signals under thresholds.
- NGWAF identifies a user by it's source IP
- Default threshold:
  - 50/1 minute (check every 20 seconds)
  - 350/10 minutes (check every 3 minutes)
  - 1800/1 hour (check every 20 minutes)



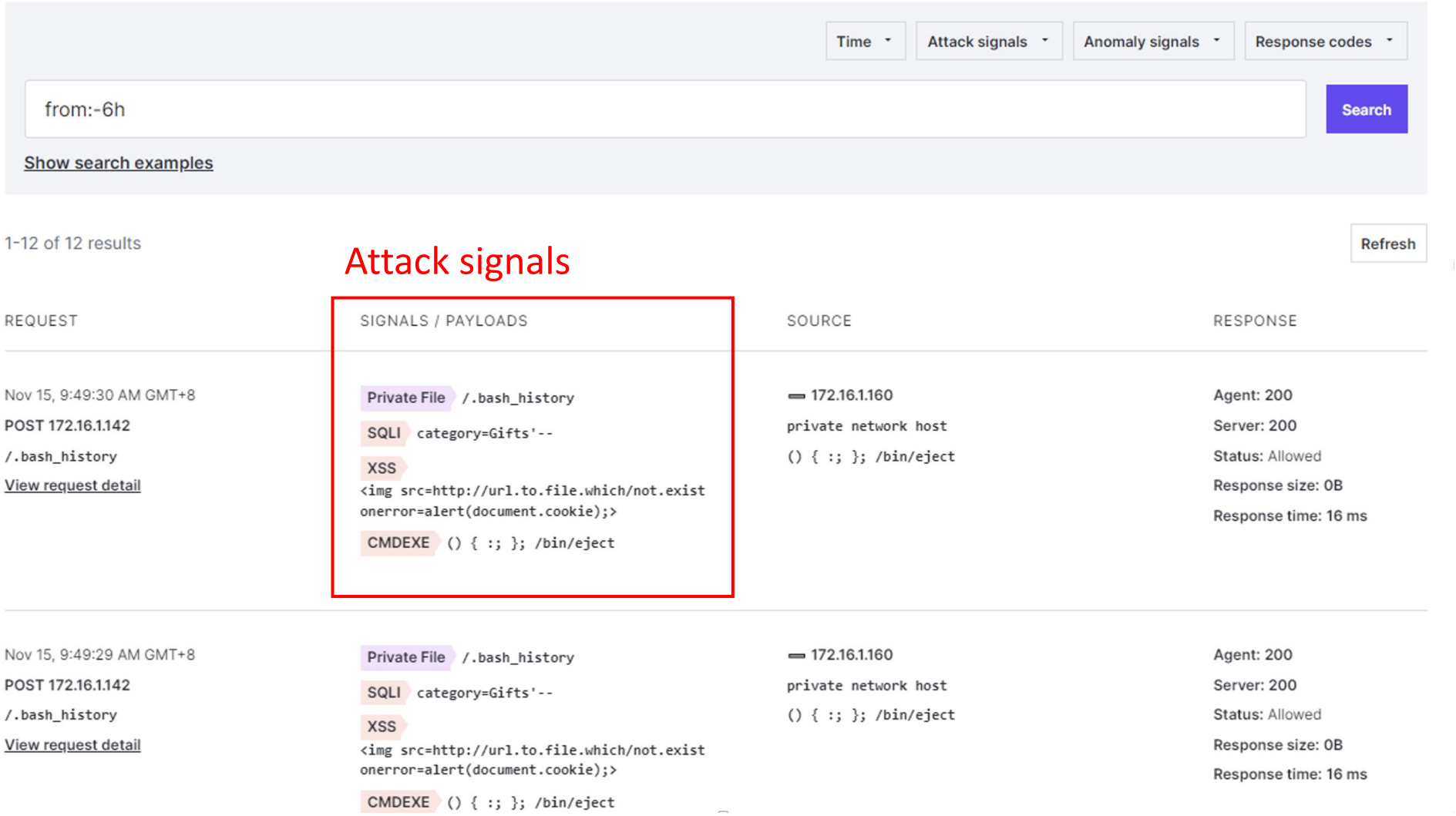
Flagged IP & Threshold based blocking





blocking malicious attacks as exceed threshold

Tagged Requests



False positive convert to rule

Requests / View

Server

Server hostname ACOS-6.0.1-CFW-WAF-35-shared

Remote Client

Remote address 10.10.10.7

Remote hostname private network host

Remote country code N/A

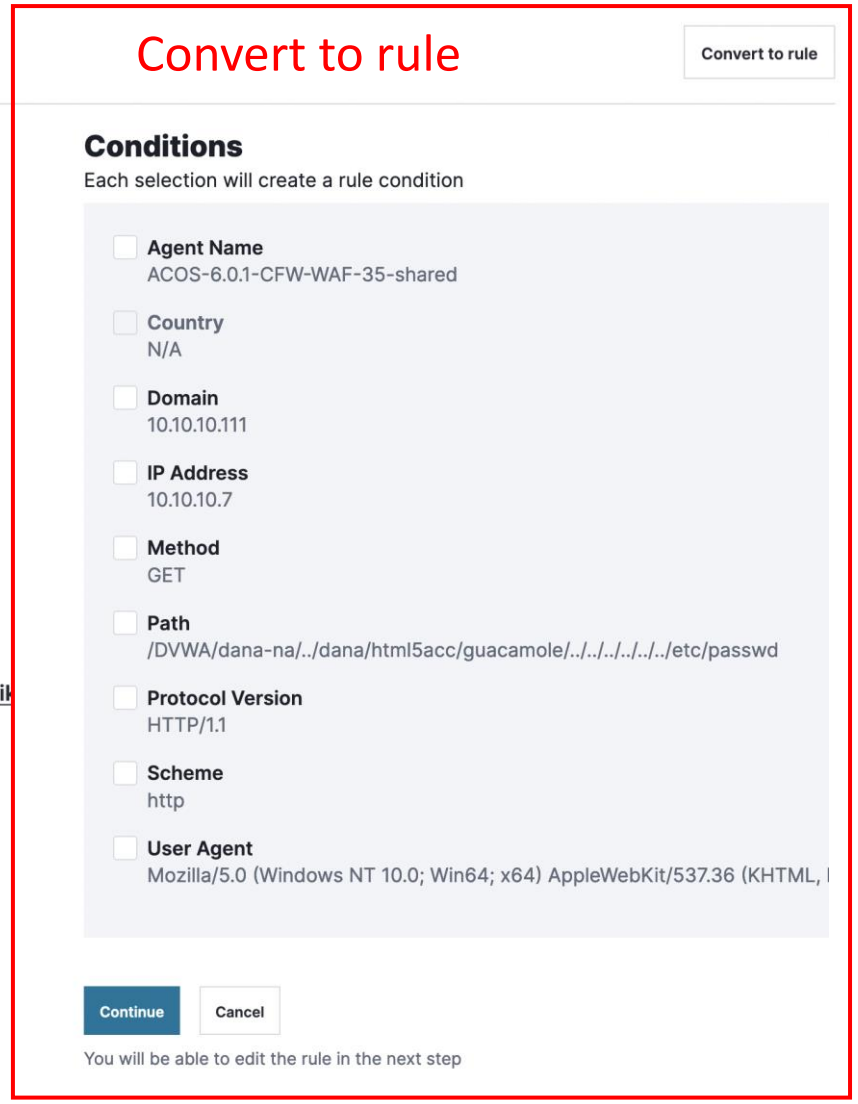
User agent Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, lik

Request

Timestamp Aug 17, 4:24:08 PM GMT+8

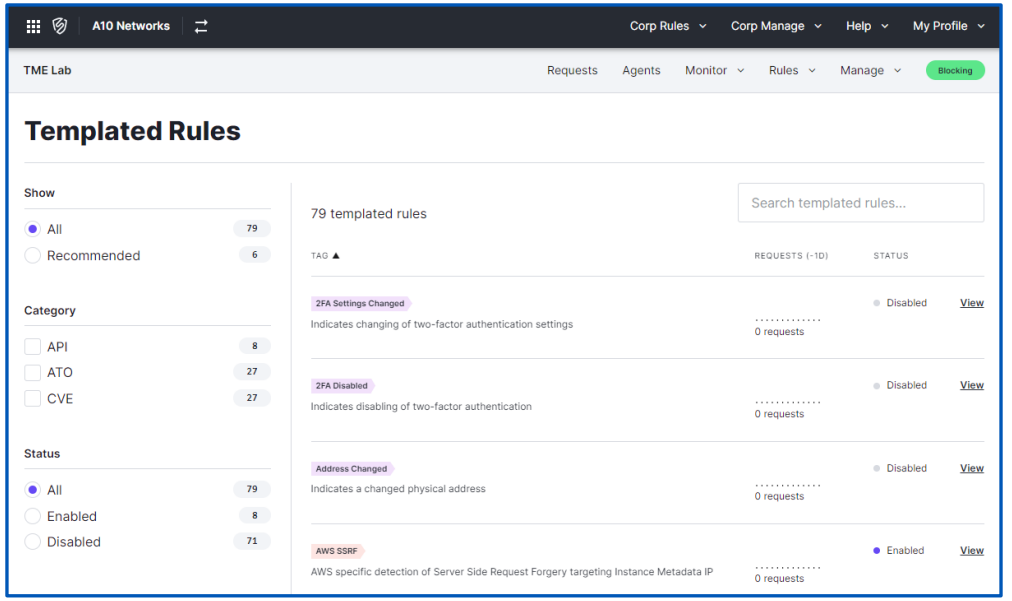
Method GET

Convert to rule



Templated Rules

- Templated rules are of 3 categories
  - Virtual Patching (CVE)
  - Account Takeover (ATO) Protection
  - API Protection
- Built-in virtual patching rules immediately block specific common vulnerabilities (CVE)
- ATO protection enables to identify account takeover attacks on the application
- API protection enable to detect patterns of malicious API requests
- Benefits
  - Built-in rules makes it simple to manage and save time
  - Easy to use rule builders to implement customization
  - Provides visibility into requests through signal tags



Site Overview

Request Volume

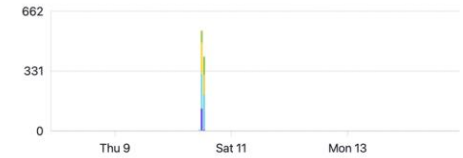
All requests for this site

0.01 average RPS

Total Requests	7k

OWASP Injection Attacks

The most common attacks from OWASP Top 10



SQLI	122
XSS	389
CMDEXE	284
Traversal	166

Quick look | View requests

OWASP TOP 10

Latest feature announcements

Agent management functionality - Beta
Our agent management functionality now includes a service that auto-updates agent versions and a plugin for Vault that stores and rotates agent keys.

Professional Plan Edge Deployment Updates
Custom signals, dashboards, lists, templated rules, and custom response codes are now available for Professional plan customers using edge deployment.

Announcing New Protection for CVE-2022-42889
Use the new virtual patch to protect yourself from the recent Apache Commons Text library code execution vulnerability.

View all announcements

OWASP TOP10

Top 10:2021 List

A01 Broken Access Control

A02 Cryptographic Failures

A03 Injection

A04 Insecure Design

A05 Security Misconfiguration

A06 Vulnerable and Outdated Components

A07 Identification and Authentication Failures

A08 Software and Data Integrity Failures

A09 Security Logging and Monitoring Failures

A10 Server Side Request Forgery (SSRF)

Scanners

Commercial and open source scanning tools

Attack Tooling	3k
Backdoor	0
Forceful Browsing	523
Private File	253

Traffic Source Anomalies

Requests from unusual or suspicious sources

SigSci IP	0
Tor Traffic	0
Datacenter	0
Malicious IP	26

Events

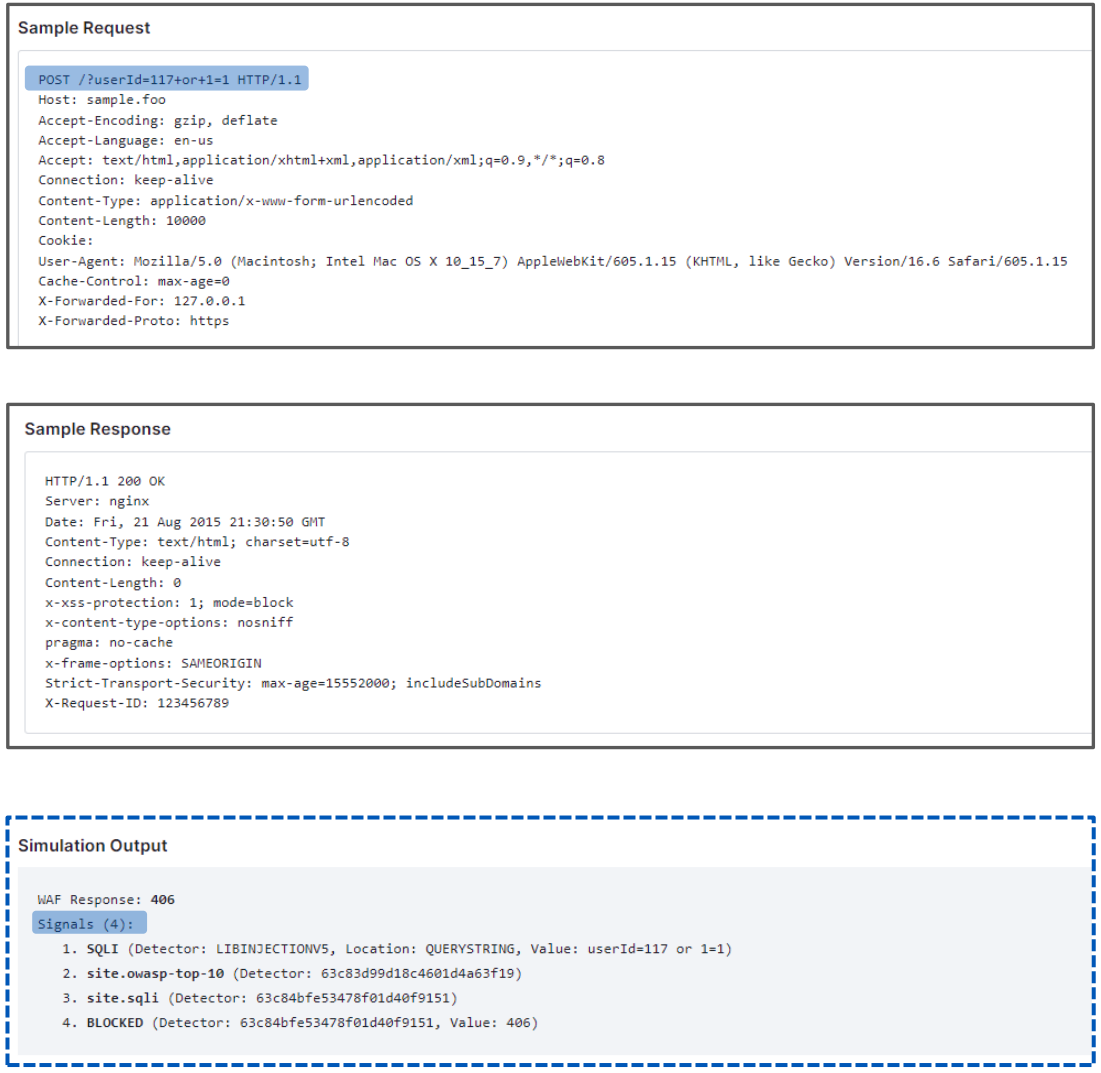
IPs flagged for exceeding thresholds

44.144.222.189	Attack Tooling 4 days ago	Expired
60.49.127.60	SQLI 4 days ago	Expired
154.233.62.85	Attack Tooling 4 days ago	Expired

Showing 3 of 11

Next-Gen WAF Simulator

- Simulator offers expert support in debugging and testing rule creation
- Allows users to pass sample requests and responses and help identify whether user requests would be blocked or allowed as per current rule set
- Simulation output presents details of response code and triggered signals
- Benefits
  - Empowers users to create custom rules that fit the organization's needs confidently
  - Prevents misconfiguration and improves efficacy
  - Speeds up investigation and simplifies troubleshooting for quicker results



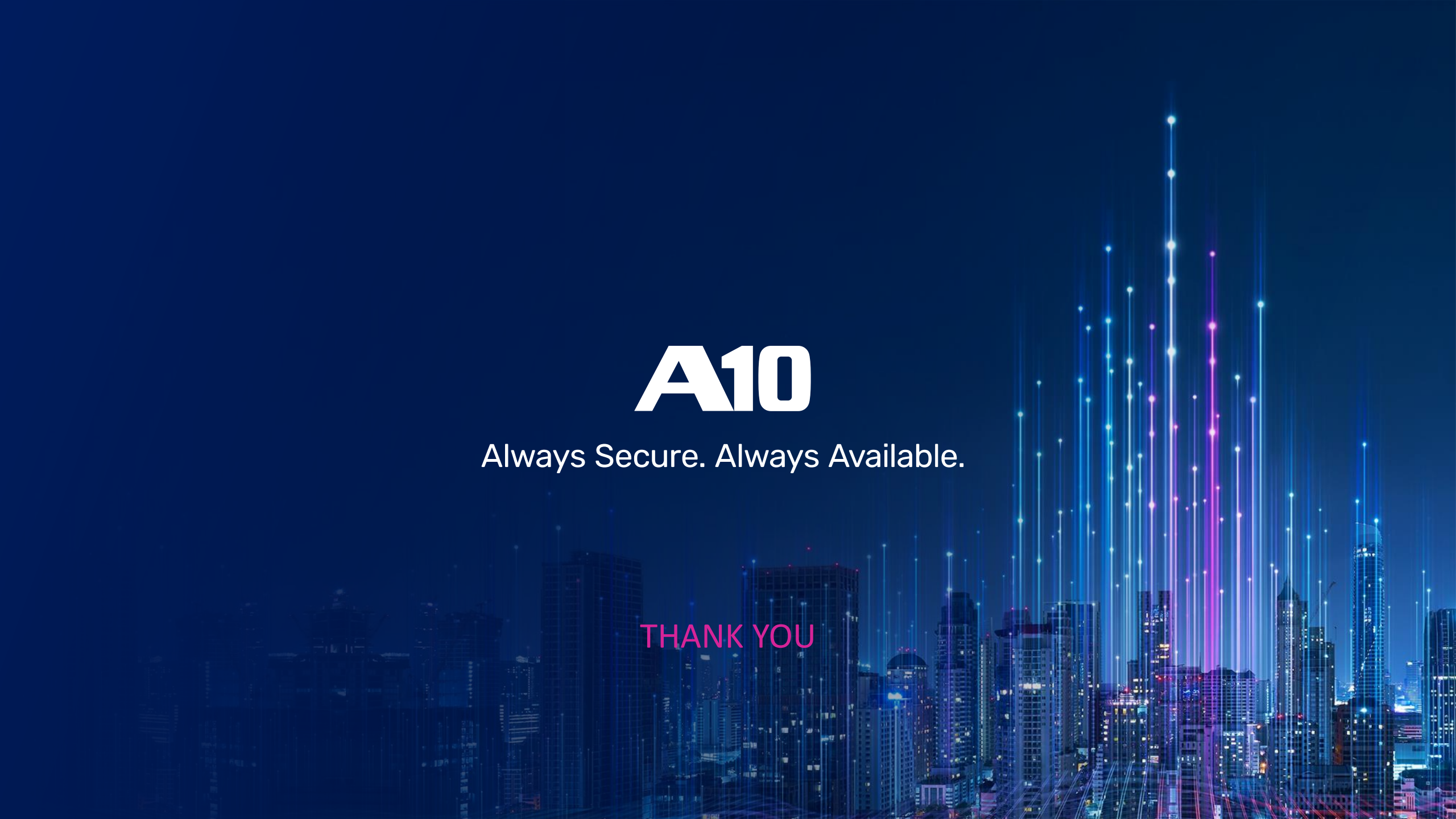
Compliance – Industry Standard Certifications

Next-Gen WAF is PCI DSS compliant as a Level 1 service provider & fulfill PCI requirement 6.6

Next-Gen WAF is audited against the relevant sections of security and privacy rules of the HIPAA

Next-Gen WAF is audited against the trust services criteria for security, availability, and confidentiality as established by AICPA

Next-Gen WAF is audited against key articles of the GDPR, mapped to data protection and privacy controls


A10
Always Secure. Always Available.
THANK YOU