MONITORAPP

효과적인 Multi Cloud 보안을 위한 WAAP 전략

모니터랩 | 박호철

MONITORAPP

Contents

- WAF => WAAP로의 변화
- WAAP에서의 주된 기능
  API protection, Bot mitigation, DDoS
- Hot issue: credential stuffing
- CDN과 결합한 Cloud 기반 WAAP

WAAP (Web Application & API Protection)

MONITORAPP

Gartner®

By 2026, 40% of organizations will select a WAAP provider on the basis of its advanced API protections and web application security features.

Web Security

- SQLi, Commandi, XSS, CSRF 등 웹 사이트에 직접적이고 위협적인 공격들을 차단합니다.

API Security

- API 트래픽의 완전한 구문분석과 토큰 무결성 검증을 통해 접근 제한 및 공격 차단, API Request 위변조를 감지 합니다.

Bot Mitigation

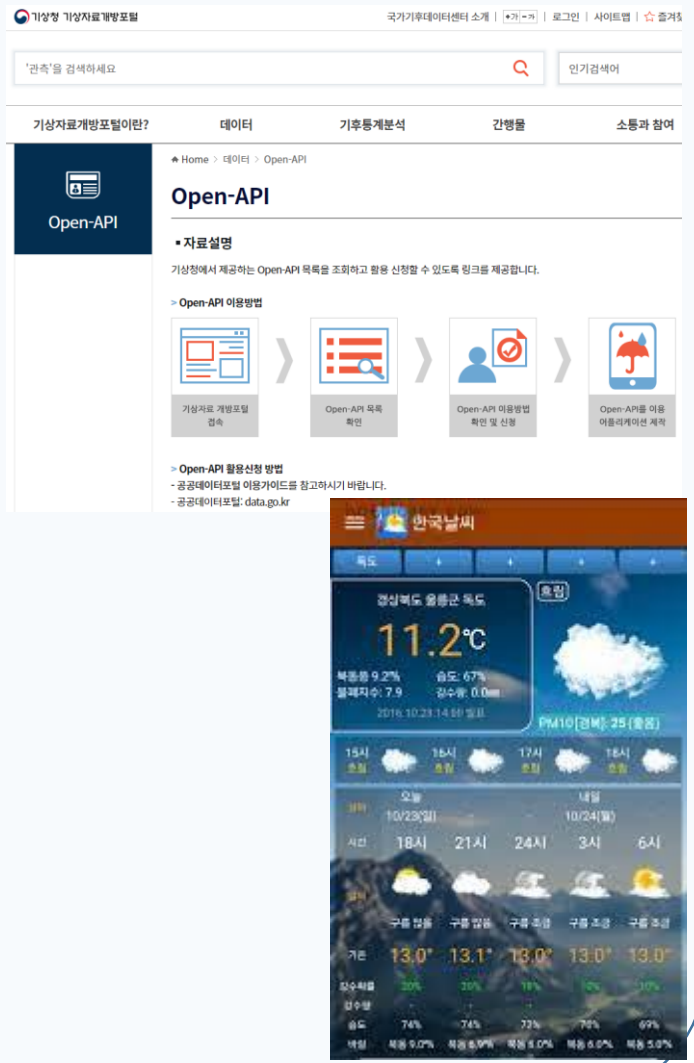
- 크리덴셜 스터핑, 콘텐츠 스크래핑 등 악의적인 목적의 Bot 트래픽을 식별 하고 접속을 제한 합니다.

L7 DDoS Mitigation

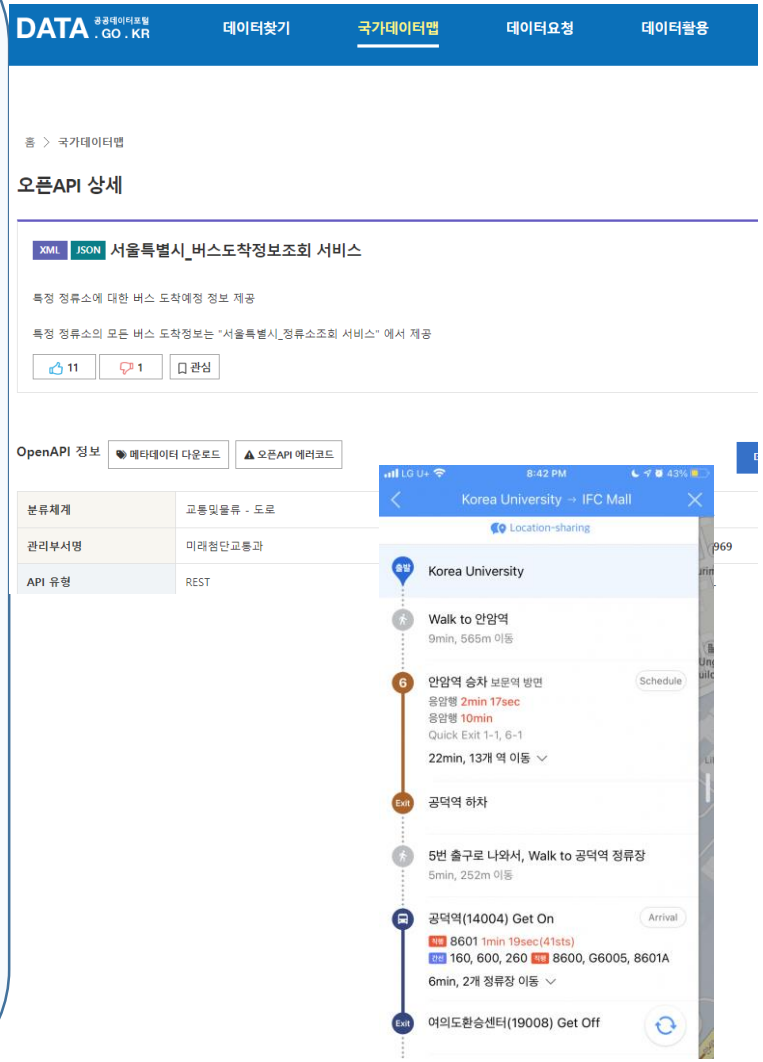
- GET 플러딩, RUDY, Slowloris, SlowRead 등 HTTP 기반의 서비스 거부 공격을 완화합니다.

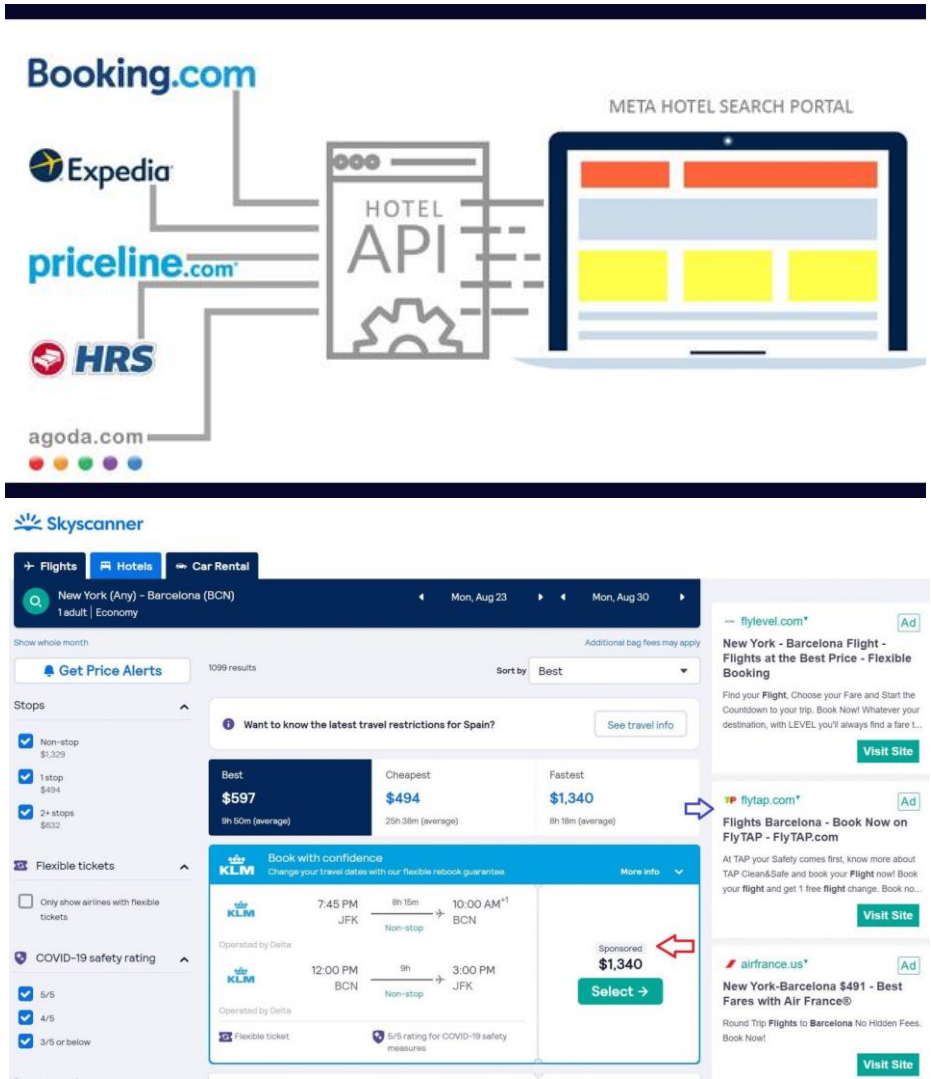
생활속의 API(Application Programming Interface)

https://data.kma.go.kr/api/selectApiDetail.do



https://www.data.go.kr/data/15000314/openapi.do#



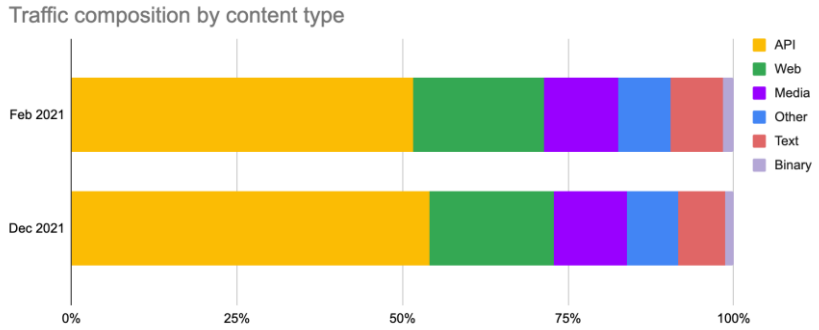


API 트래픽의 증가

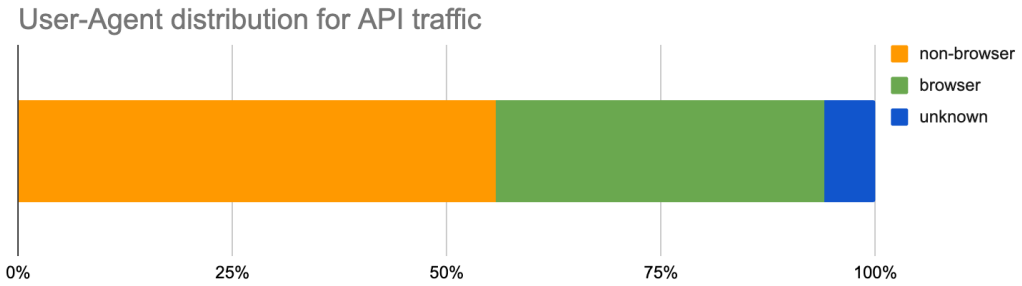
MONITORAPP

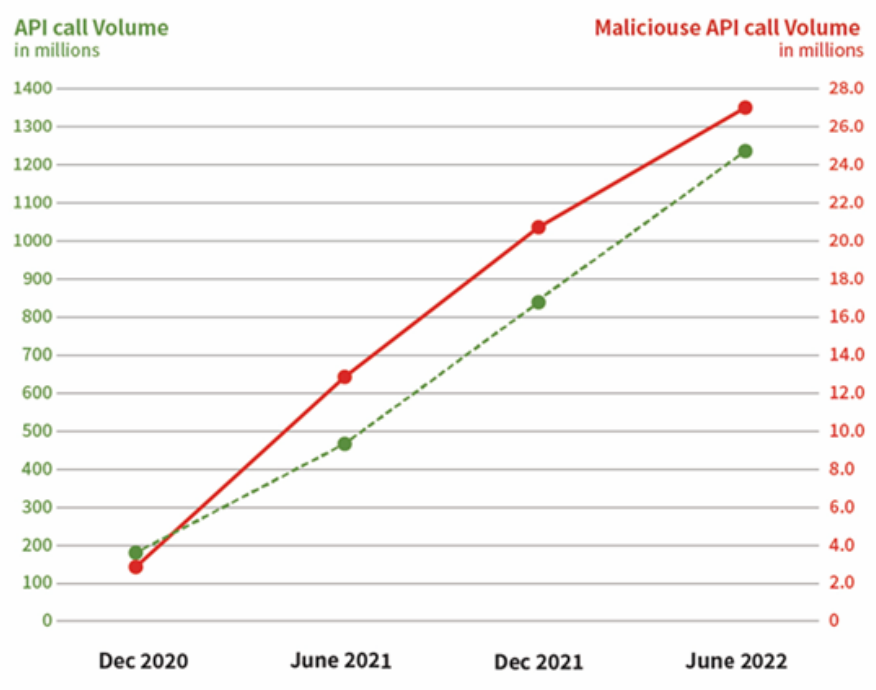
절반 이상의 트래픽이 API

Response type:
application/json, application/xml, text/xml



Browser(38%) Ajax API Call
Non-browser(56%) Mobile Apps, IOT devices





https://blog.cloudflare.com/landscape-of-api-traffic/

API Security가 이슈인 이유?

MONITORAPP

✓ API관련 보안 사고가 지속적으로 발생

VB VentureBeat
Twitter API security breach exposes 5.4 million user...

S Security Magazine
Clubhouse API allows everyone to scrape ...

T-Mobile

Learn From The T-Mobile API Breach

Improve your API Security program in 2023

✓ API사용증가(Mobile, IOT, Cloud, MSA등)
✓ API 사용에 따른 보안의식 부재
기존의 WAF에서는 차단 불가
WAF: signature, pattern (' or 1=1--;)
API: logic /users/gildong/info => /users/admin/info

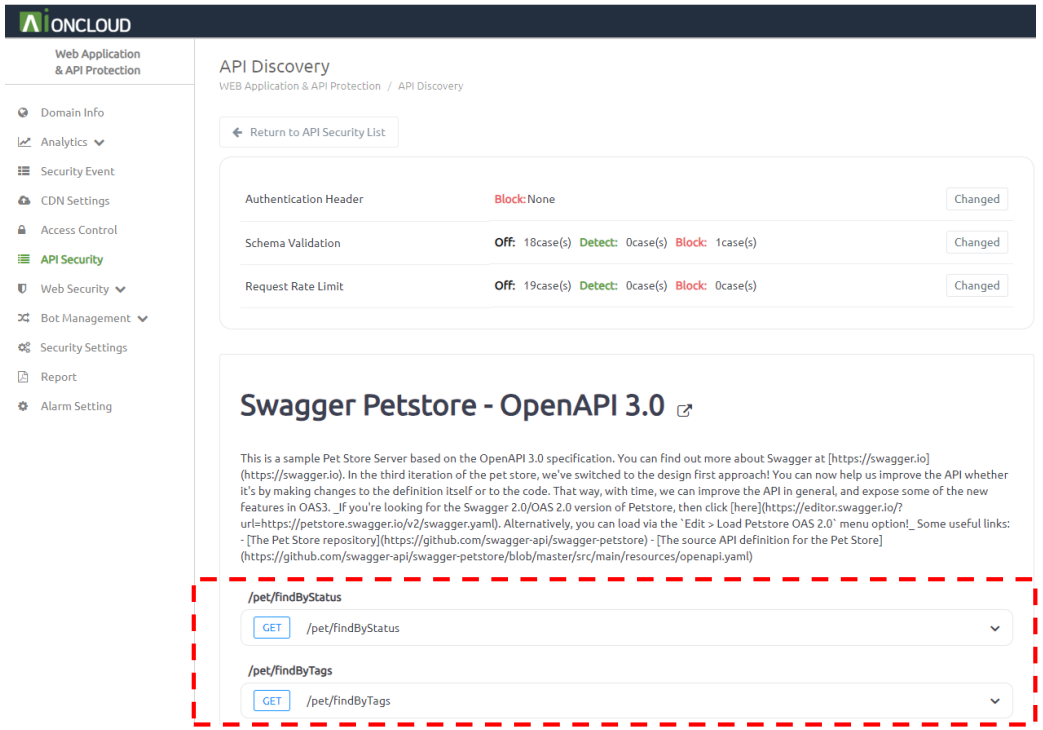
BOLA
(Broken Object Level Authorization)

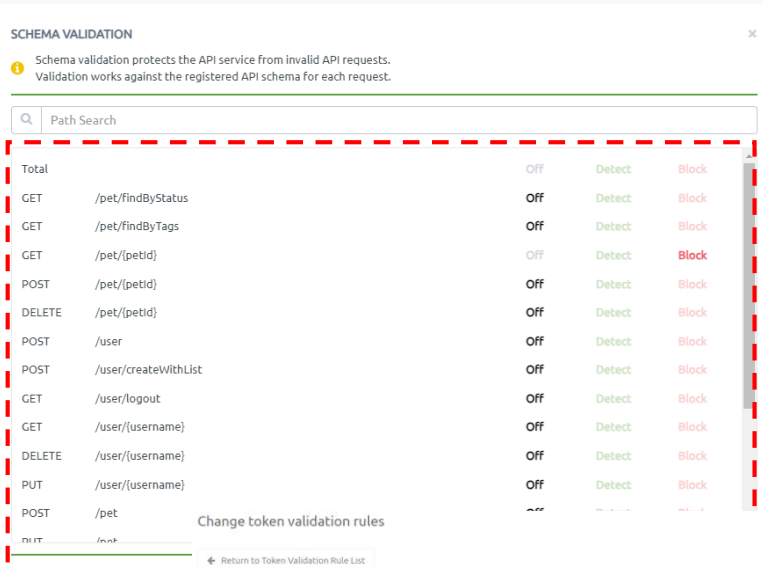
✓ OWASP API Security 2023

API Security 기능

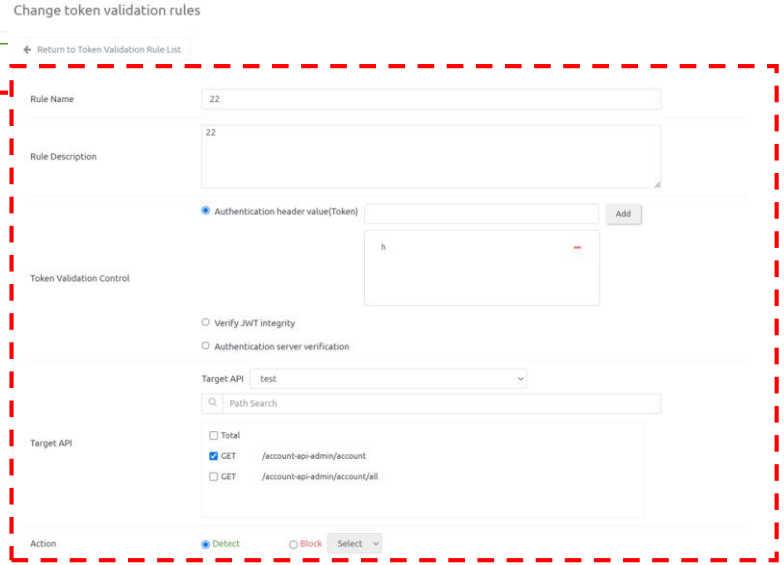
MONITORAPP

API Discovery – OAS, Profiling



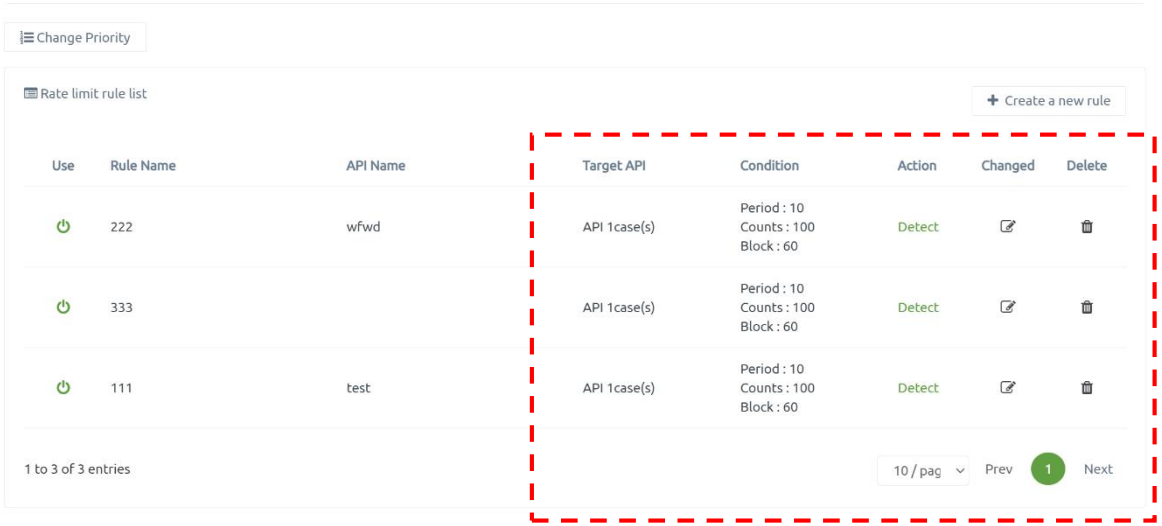


Body inspection

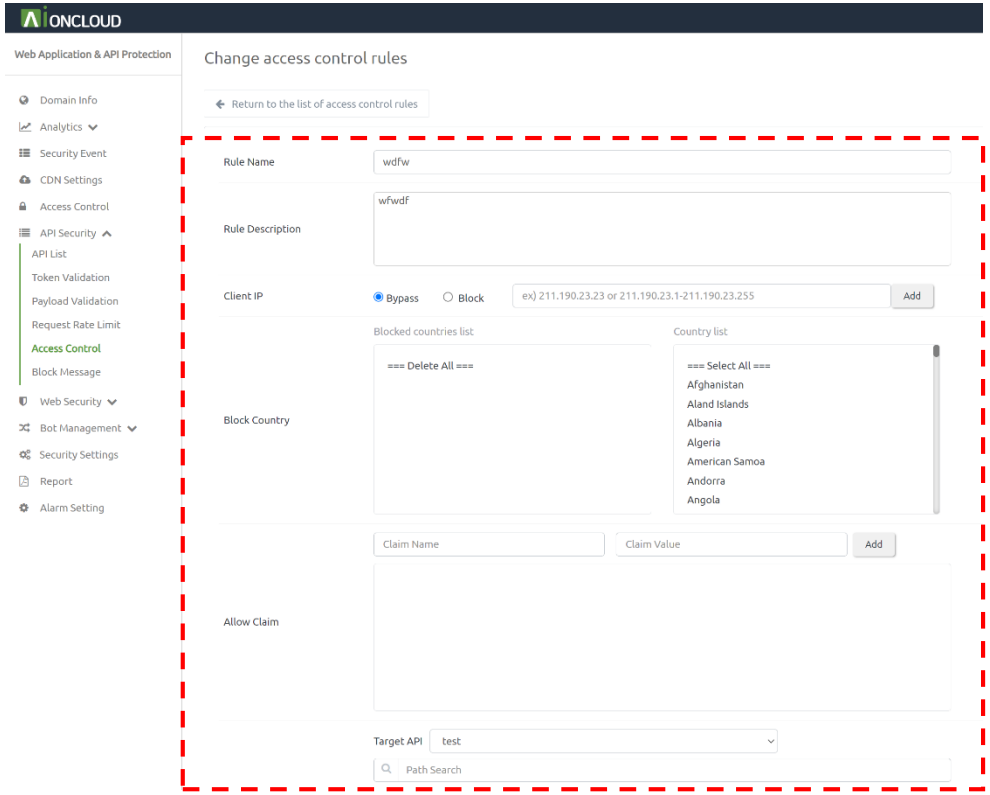


Token, Payload validation

API Security 기능

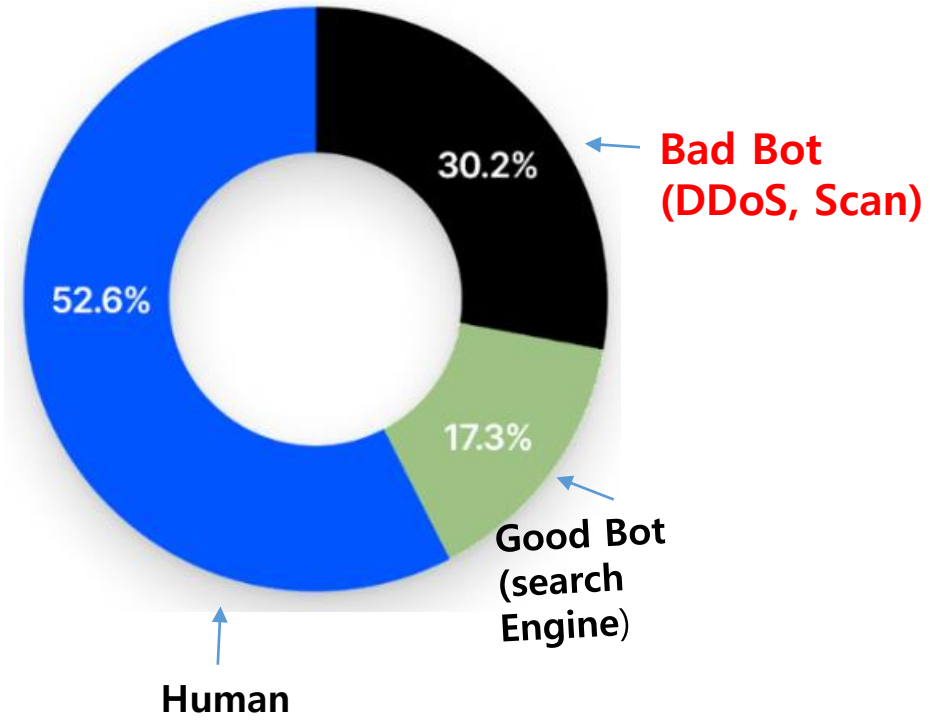


Rate limit



Access control

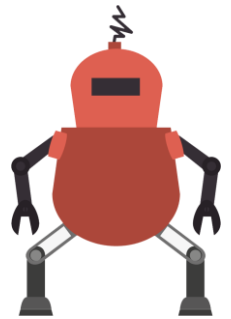
Bot management



Bad Bot의 기능

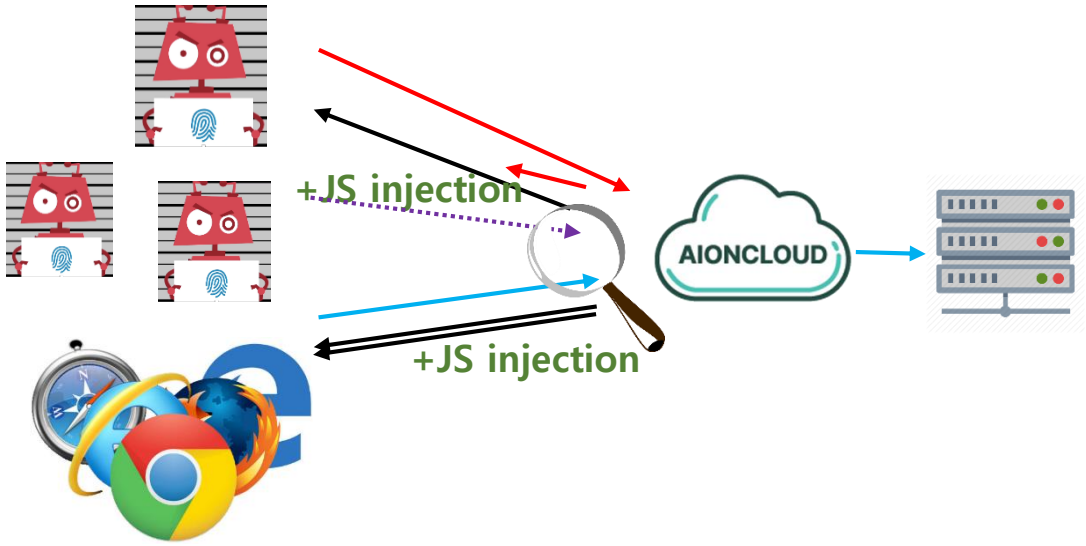
- ✓ Credential stuffing (brute force)
- ✓ DDoS 공격
- ✓ Site, contents scraping
- ✓ 취약점 scanning

=> 많은 트래픽과 과도한 시스템 부하 유발



#badbots

Bot mitigation



- ✓ JS injection을 통해 signature 검증
  - ✓ browser 인지 bot인지 검증
  - ✓ Mouse 이동이나 keyboard 등의 움직임이 있는지 또는 동일한 fingerprint를 가진 client가 있는지

Bot mitigation

MONITORAPP

- Domain Info
- Analytics
- Security Event
- CDN Settings
- Access Control
- API Security
- Web Security
- Bot Management
  - IP Reputation
  - Rate Limit
  - Forced Browsing
  - Advance
  - Credential Stuffing
  - Challenge Page
- Security Settings
- Report
- Alarm Setting

Identifies and detects the Bot using Bot Management IP reputation information.

Security Settings

Tor Exit Node	'Tor Exit Node' is a term used in Tor, a privacy tool, which is designed to protect personal information. When using Tor, it is possible to hide one's IP address when browsing the internet or using online services. The last node (exit node) changes the user's IP address, which is called Tor Exit Node. You can take action on such requests that use Tor Exit Node.	**Off** Detect Verify Block
Fake crawler	'Fake Crawler' is a fake bot that scrapes websites or collects data, and it is classified as a security threat. These fake bots are categorized as automated programs that websites do not permit, so blocking is recommended.	Off Detect Verify **Block**
Known attack source	'Known attack source' is when HTTP traffic is detected from an IP address previously classified as malicious behavior. These IP addresses are classified as security threats and are recommended to be blocked because they can be used for attacks or hacking attempts on websites, spamming, and malicious server access.	Off Detect Verify **Block**
Cgi Proxy	'CGI Proxy' is an online proxy service used for accessing websites. It is used to hide the IP address associated with the content used by a website. For example, users can use a CGI Proxy to hide their real IP address and anonymously access websites. Measures can be taken in response to requests made through a CGI Proxy.	**Off** Detect Verify Block
Anonymizing VPN Service	'Anonymizing VPN Service' is a virtual private network (VPN) service that is used to hide Internet users' IP addresses and protect their privacy. With this service, Internet users connect to the Internet through a VPN server, which hides the actual IP address of the Internet user and uses the IP address of the VPN server instead. However, since it can be used for malicious purposes, you are recommended to block requests over Anonymizing VPN.	**Off** Detect Verify Block
Web Proxy	'Web Proxy' refers to the proxy server that Internet users use to connect to the Internet. This server is used to hide your IP address and to anonymously protect your online activities. However, you are recommended to block the request because it can be used for malicious purposes.	**Off** Detect Verify Block
Web Scraper	'Web Scraper' is a term used to refer to a program or script that collects information from a website on the Internet. These programs are used to extract and analyze data from websites, compare prices, recommend products, and collect information. However, some 'Web Scrapers' are recommended to be blocked because they may violate the website's terms of use, send spam messages, or cause legal problems such as copyright infringement	**Off** Detect Verify Block

Hot issue: Credential stuffing

MONITORAPP

ITB IT비즈뉴스(ITBizNews)

"지금 당장 비밀번호 바꿔라"...개인정보 위협하는 '크리덴셜 스터핑' 주의보

불법으로 유통되는 계정 정보를 획득한 해커가 웹사이트에 무작위로 대입해 이용자의 정보를 탈취하는 크리덴셜 스터핑(Credential Stuffing) 공격이...

ABC

Byron Bay woman's Paypal data breach nightmare exposes risks of credential stuffing. So how do you avoid it?

A cyber security researcher says reusing passwords is like creating a skeleton key hackers can use to hijack accounts through a process...

조선비즈

"상품권이 사라졌다" 지마켓, 고객 계정 도용 피해 속출 - 조선비즈

온라인 쇼핑몰 지마켓의 고객 계정이 도용된 정황이 동시다발적으로 포착되면서 사용자들의 불안감이 커지고 있다. 19일 온라인 커뮤니티와 소셜...

시사포커스

정부 운영 '워크넷' 중국發 '크리덴셜 스터핑' 피해...개인정보 유출

[시사포커스 / 이청원 기자] 정부가 운영하는 취업 사이트인 '워크넷'에 중국 등 해외 IP의 무단접속으로 구직자의 성명과 출생연도, 주소,...

보안뉴스

스타벅스, 크리덴셜 스터핑 공격으로 일부 회원 계정정보 유출... 충전금 결제 도용까지

스타벅스코리아(이하 스타벅스)에서 일부 고객의 계정정보가 유출돼 해외 IP를 통해 애플리케이션에 부정 로그인이 시도된 것으로 알려졌다.

뉴스워커

지속해서 발생하고 있는 '크리덴셜 스터핑' 공격, 대응 방안 없나

많은 기업과 기관에서 '크리덴셜 스터핑(Credential Stuffing)'이라 불리는 해킹 공격이 반복해서 발생하고 있다. 특히 대부분 공격 시도는 포인트나...

보안뉴스

페이팔 사용자 3만 5천 명, 크리덴셜 스터핑 공격으로 개인정보 잃어

3만 5천 명에 달하는 페이팔 사용자 계정이 최근 발생한 크리덴셜 스터핑 공격으로 침해됐다. 이 때문에 약 3만 5천 명의 페이팔 사용자들의 개인정보...

Credential stuffing과 관련된 통계

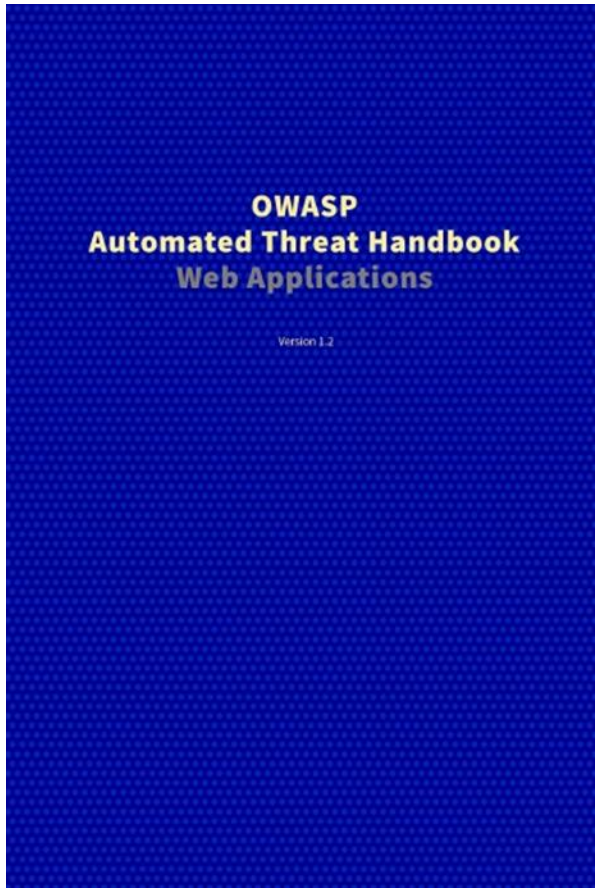
MONITORAPP

✓65%: passwords를 재사용함

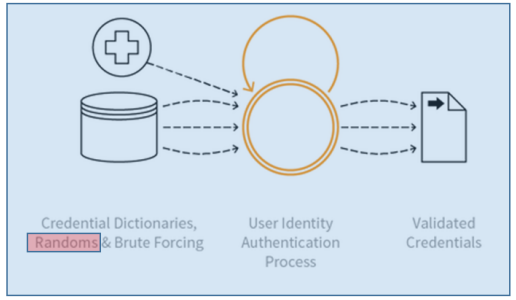
✓73%: 개인 계정과 회사 계정의 암호를 동일하게 사용함

✓34% : 인증 트래픽의 다수가 malicious함(by OKTA)

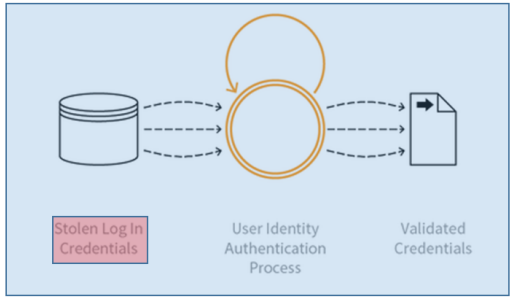
✓0.2%~1%: credential stuffing 공격의 성공율



OAT-007 Credential Cracking(brute force)



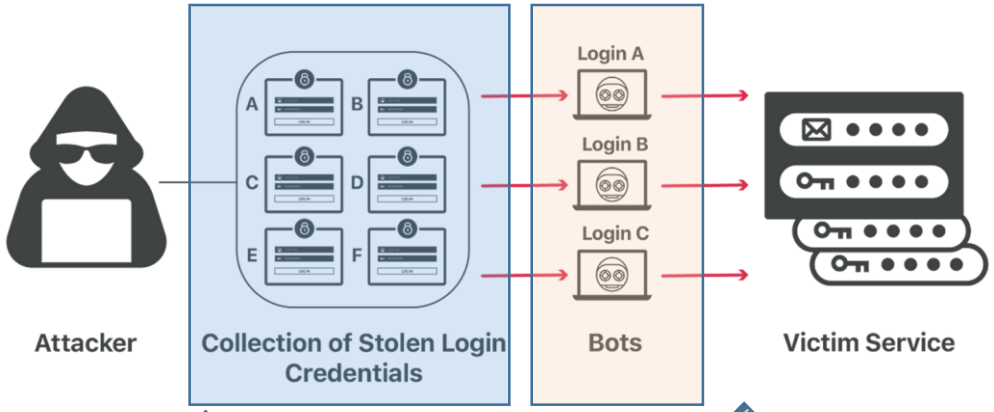
OAT-008 **Credential Stuffing**

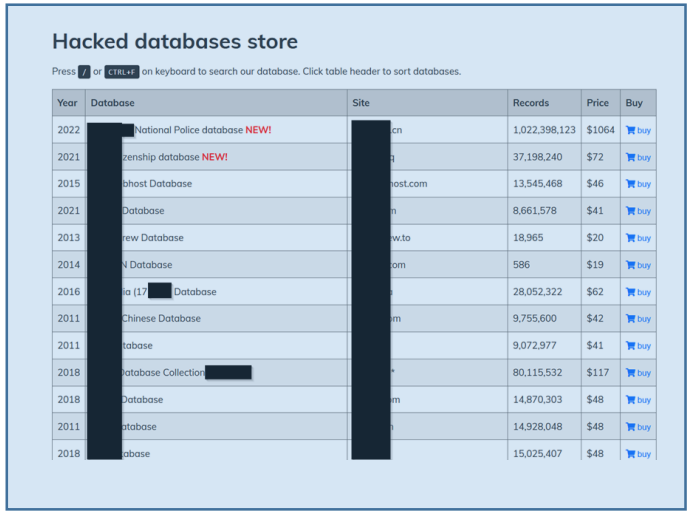


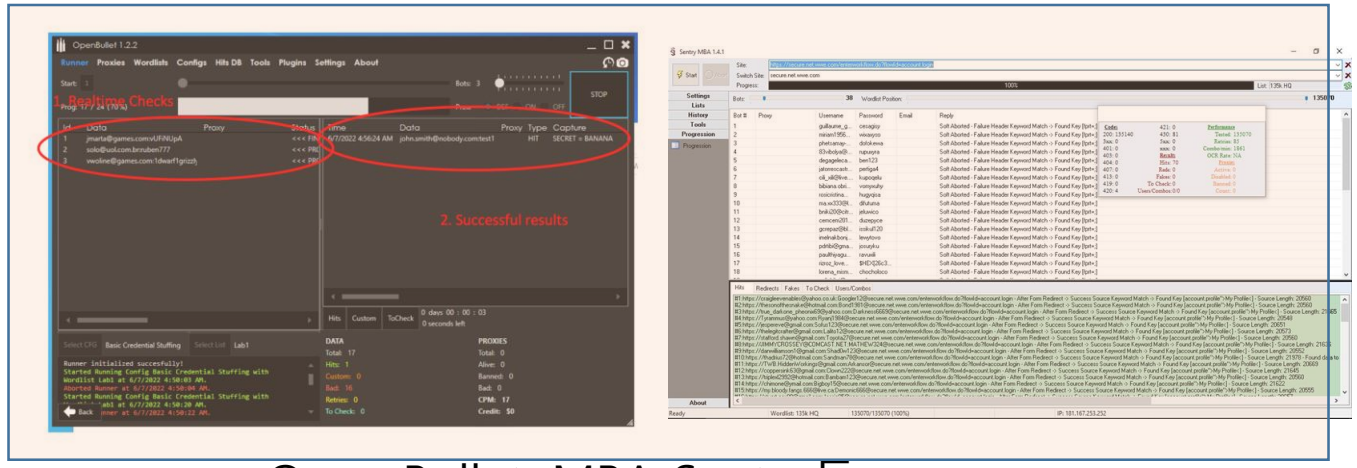
OAT: OWASP Automated Threats

https://owasp.org/www-project-automated-threats-to-web-applications/

Credential stuffing 공격 작동 방식







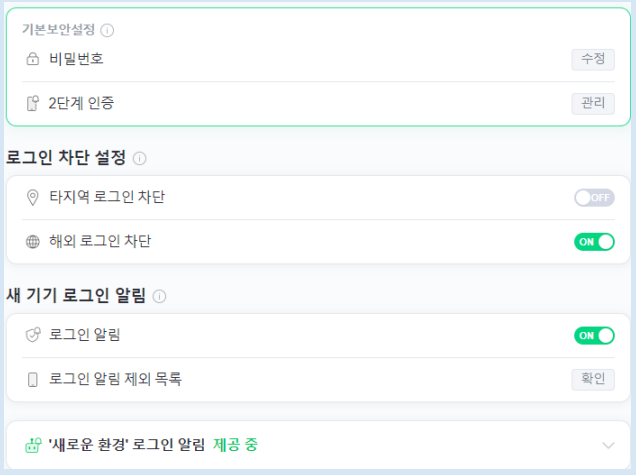
Open Bullet, MBA Sentry등

대응방안

MONITORAPP

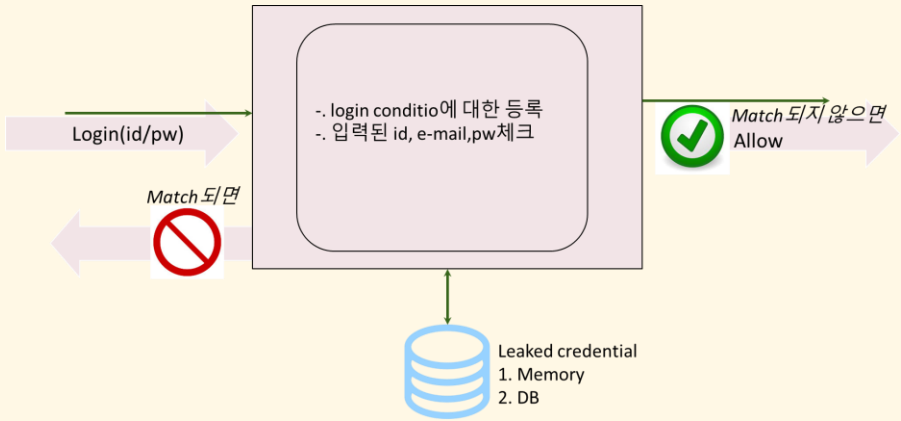
User 입장

- ✓ MFA 활성화
- ✓ 암호 자주 변경(90일)
- ✓ 암호 관리툴을 이용, 서로 다른 암호 사용
- ✓ 국가별, device별 접근 제어 적용
- ✓ Login 목록 체크

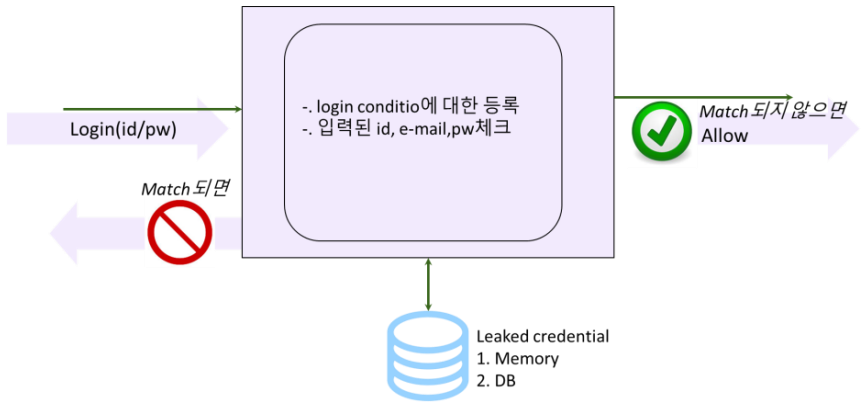


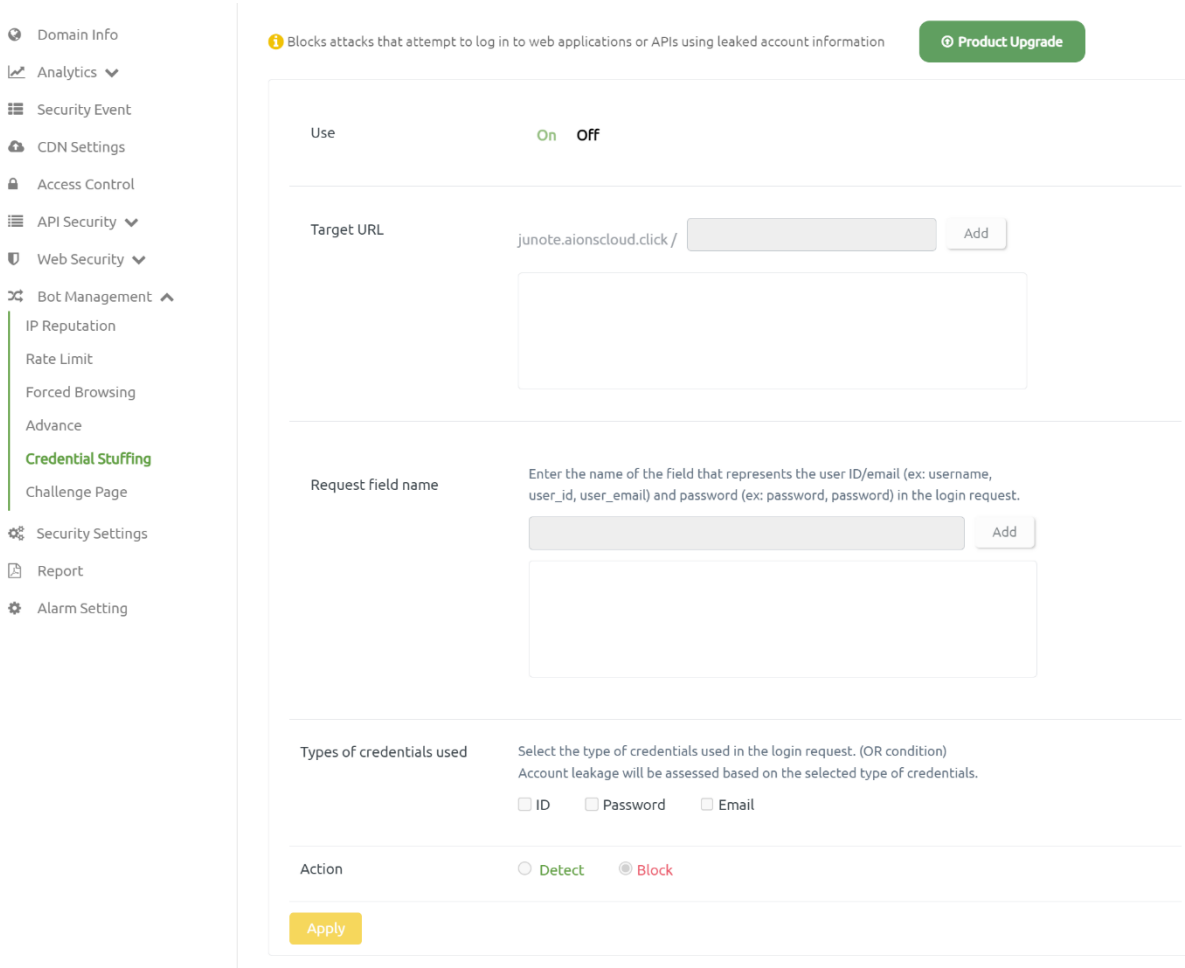
서비스 제공자 입장

- ✓ /login에 대한 rate limit (느리게, proxy이용)
- ✓ Bot protection 활용
- ✓ Credential stuffing 기능 적용
  - -. 1개의 IP에서 서로 다른 username
  - -. **Leaked credential DB 활용**

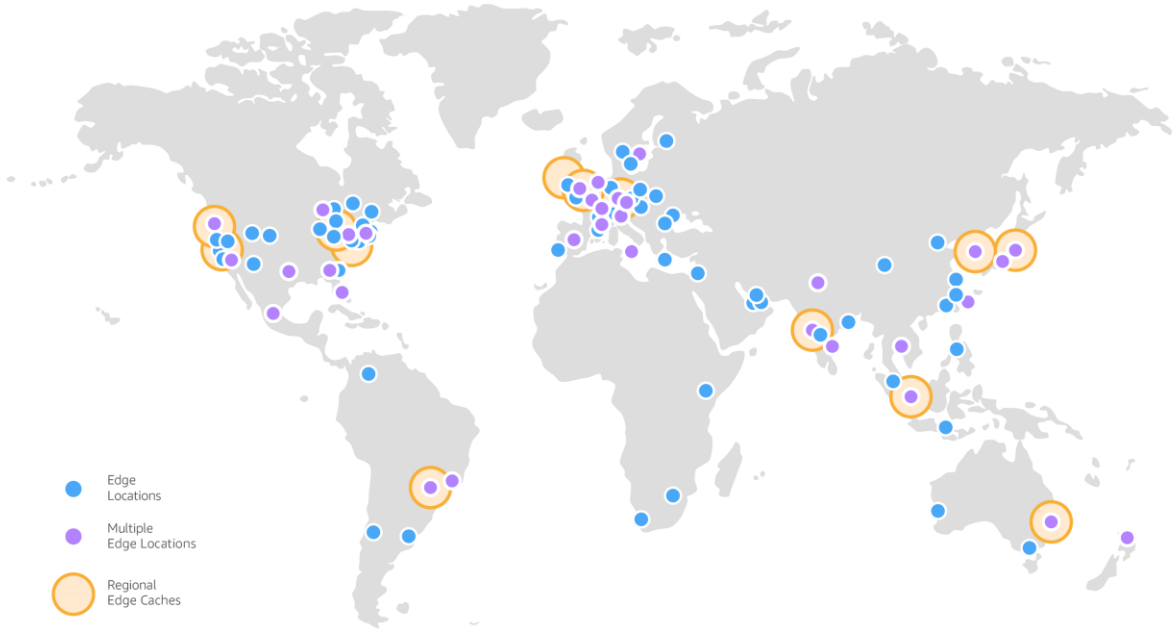


Credential stuffing 공격 대응 기능





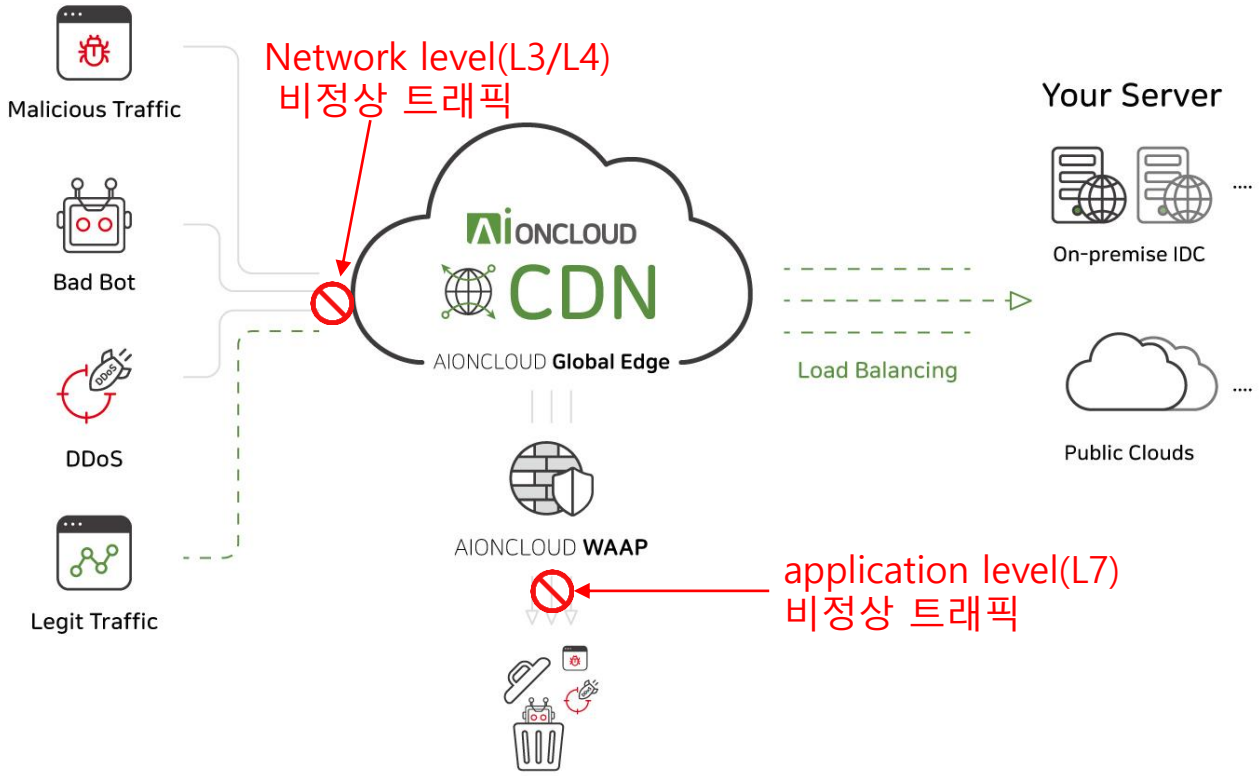
CDN과 결합한 WAAP Cloud 인프라



CDN Edges

- ✓ WAAP edges
- ✓ 15개국, 40여개의 IDC등에 인프라 운영중
- ✓ 지속 증가중

CDN과 WAAP의 결합으로 완벽한 DDoS대응



Type of DDoS	CDN INFRA	WAAP
SYN Flooding	O	
TCP/UDP/ICMP flooding	O	
UDP Amplification (DNS/NTP/SSDP)	O	
Smurf,teardrop,etc.	O	
Slowloris, RUDY,Hash		O
HTTP Flooding		O
Other L7 attack		O

클라우드 구독형 서비스 Vs CSP Native 보안 솔루션

MONITORAPP

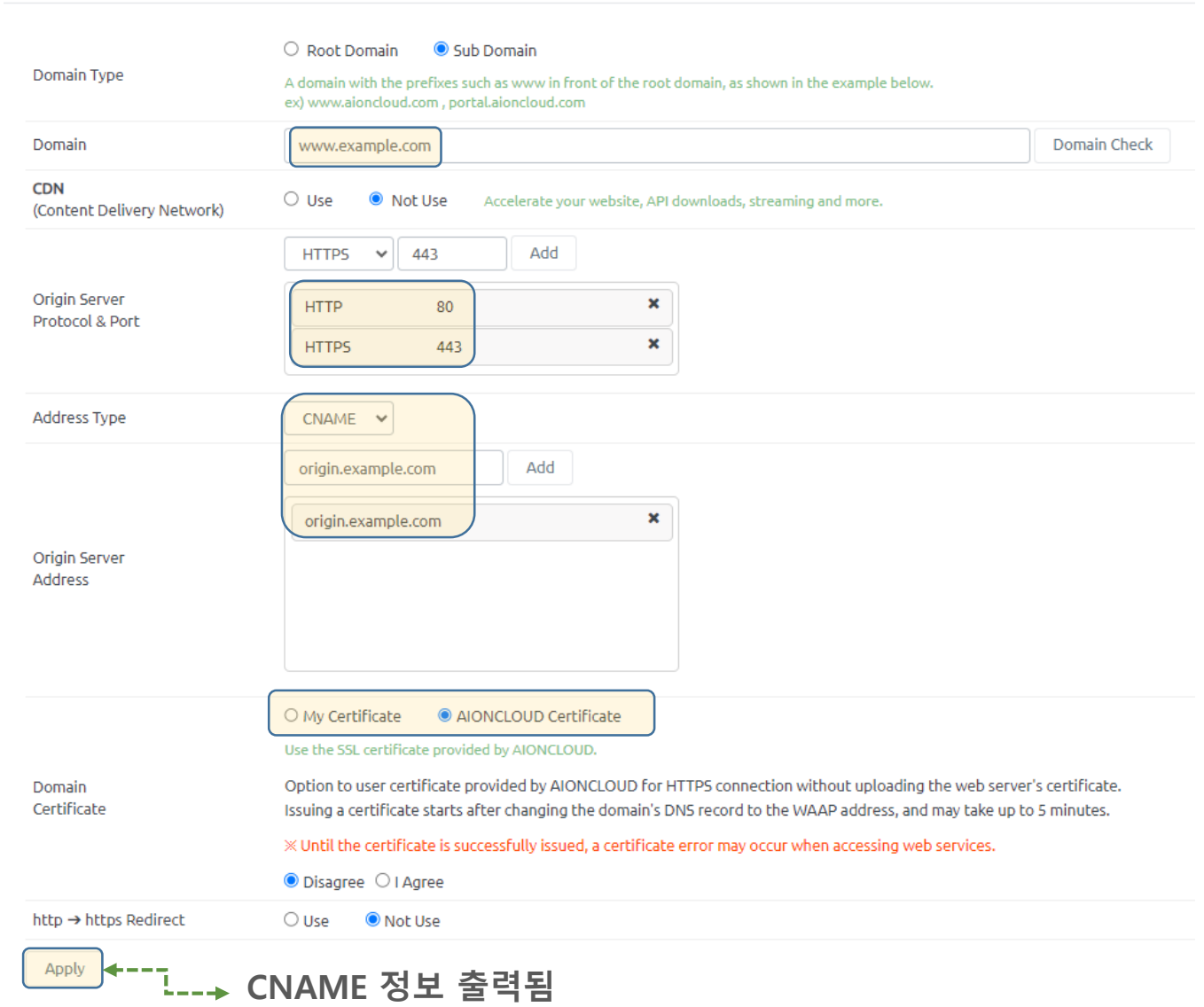
	Security as a service	CSP Native 보안 솔루션
통합	독립적인 단일 지점	클라우드 플랫폼과의 강력한 통합
보안 기능	풍부한	제한된
전문 지원	자체 보안 전문가 보유	직접 운영 및 관리
Multi Cloud	다중 클라우드 지원	클라우드 플랫폼에 종속
비용	플랜별	개별 상품 구독(상품별 비용 발생)

Cloud는 선택이 아닌 필수이며 Cloud 전환에 보안은 가장 큰 고려 요소

웹 애플리케이션 프로덕션 환경과 독립적인 단일 지점에서 강력한 보안을 구성하고 관리

5분만에 설정하는 AIONCLOUD

MONITORAPP



AIONCLOUD 장점 및 결론

MONITORAPP

✓ **Security team이 필요없음**
-. 설정이 쉽고 5분안에 설정완료
-. 룰 튜닝이 필요없음. No False positive.

✓ **추가적인 보안 솔루션이 필요없음:**
완벽한 보안을 위한 One Stop solution
-. CDN: 무제한의 Network(L3,L4) DDoS attack 방어
-. WAAP: OWASP top10, L7 DDoS attack, Bot attack, API attack 대응
-. hidden cost가 없고 어떠한 서비스 업체보다 저렴함.

MONITORAPP

THANK YOU.

(주)모니터랩 | 주소 : 서울시 구로구 디지털로 27가길 27 아남빌딩 8, 9층 08375 | Tel : 02-749-0799 | Fax : 02-749-0798 | Web : www.aioncloud.com | E-mail : support@aioncloud.com
사업자등록번호 : 214-87-66413