



# Web Application Protector & Ion

## An Overview Presentation

# Web Application Protector

Adaptive Protection  
Against Web Application  
and DDoS Attacks



# WAF

## Critical protection for every business

### Two types of attacks



#### Want *quick* money

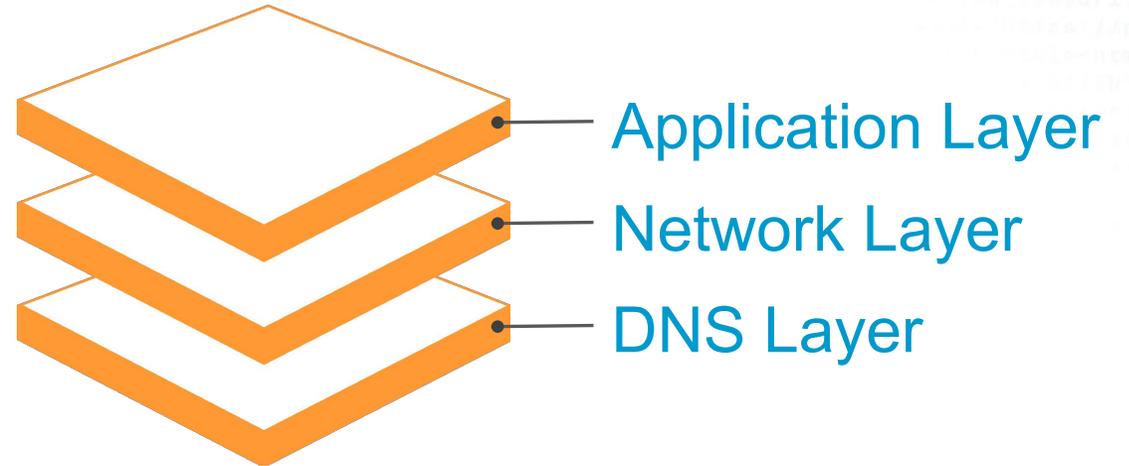
- Target many at once
- Low effort to hide
- Known methods



#### Want *big* money or damage

- Target a few organizations
- High effort to hide
- Unknown/new vectors

### Broad attack surface



# Web Application Threats

## DDoS attacks on the rise

↑ **16%** layer 3&4 attacks

↑ **38%** application layer attacks

Results of DDoS attacks:

- Flooded networks
- Overloaded infrastructure
- Distributed deployments



**GitHub**

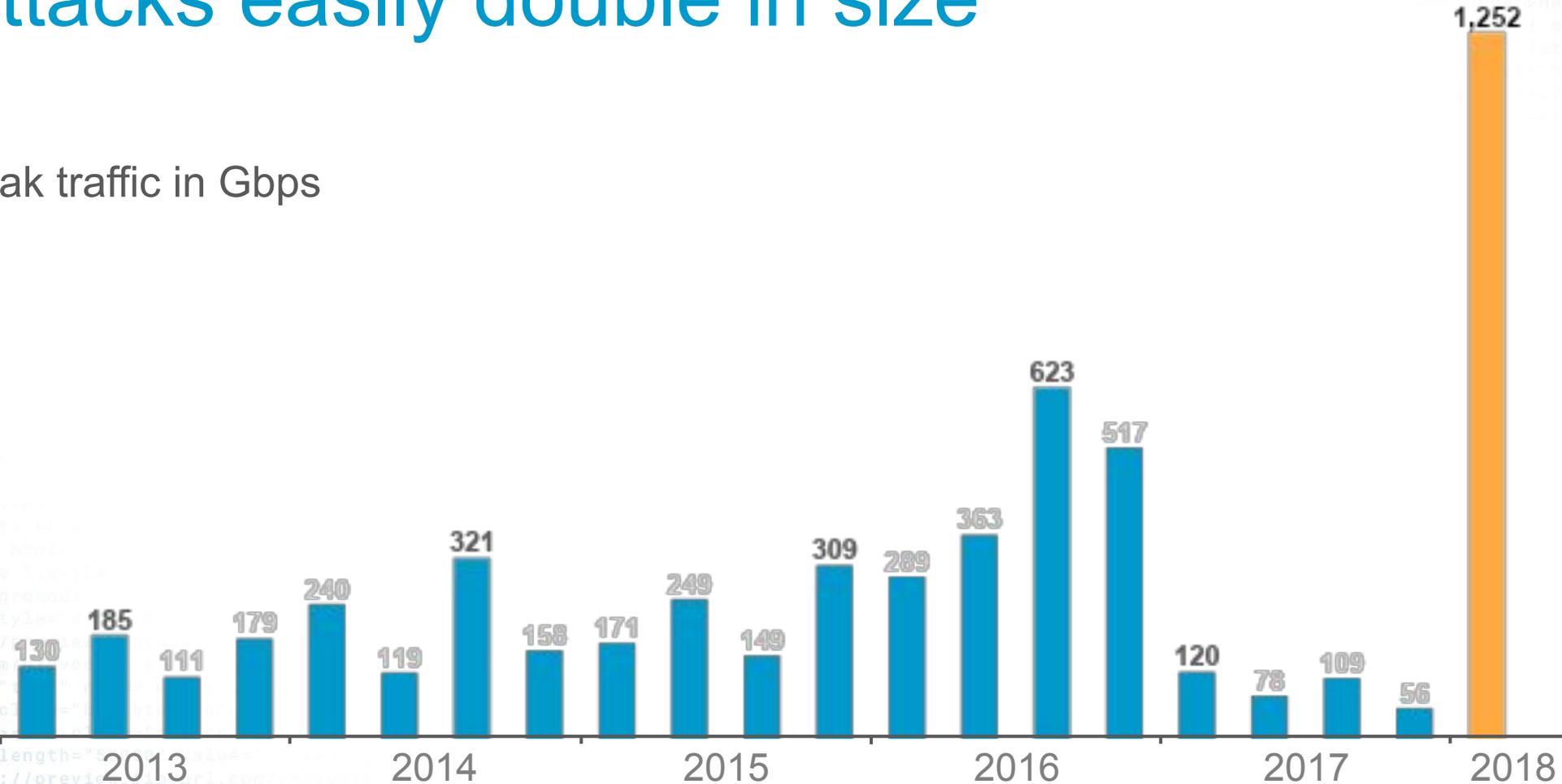
**MIRAI**

Source: SOTI DDoS Attack update Summer 2017 vs. Summer 2018

# DDoS Attack Trends

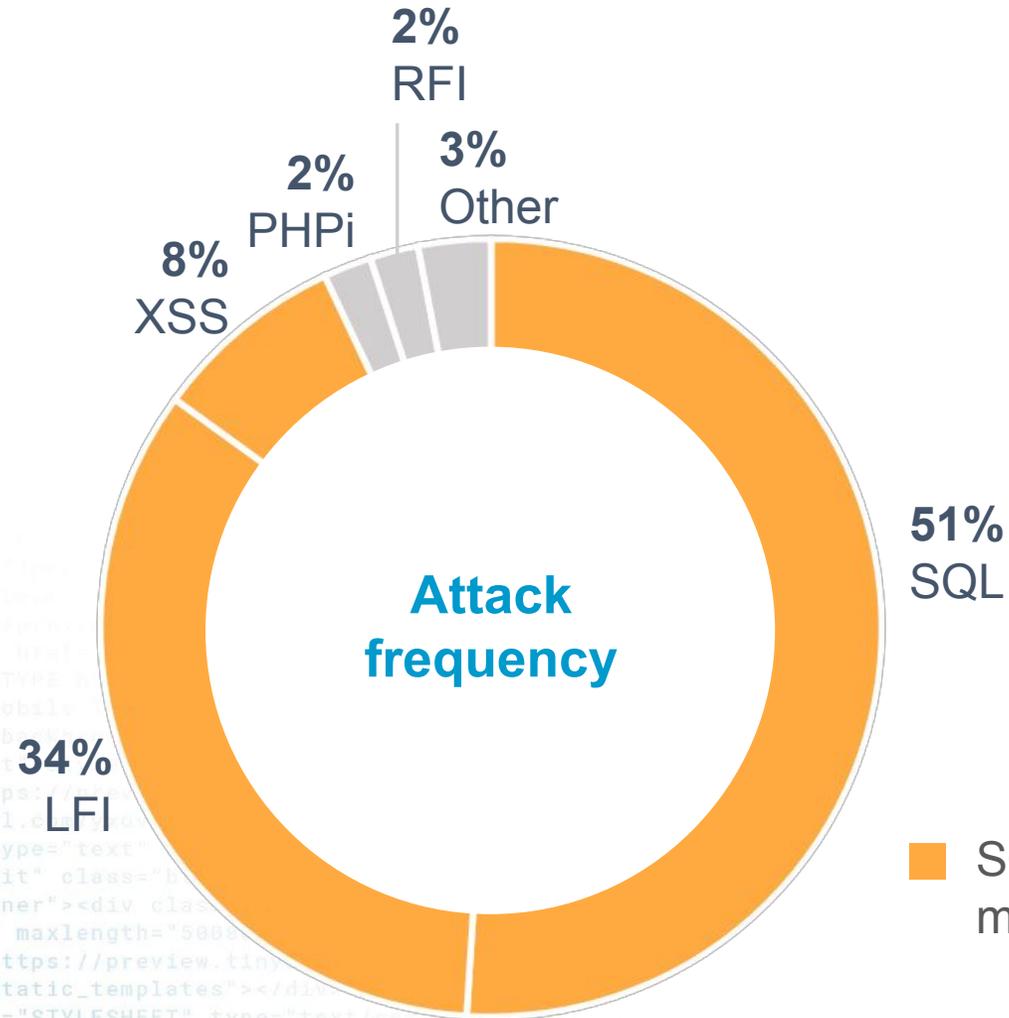
## Attacks easily double in size

Peak traffic in Gbps



DDoS attacks cost \$25 per hour

# Web Application Threats



Well-known attack vectors:

- Are frequently used
- Create background noise to hide new attacks

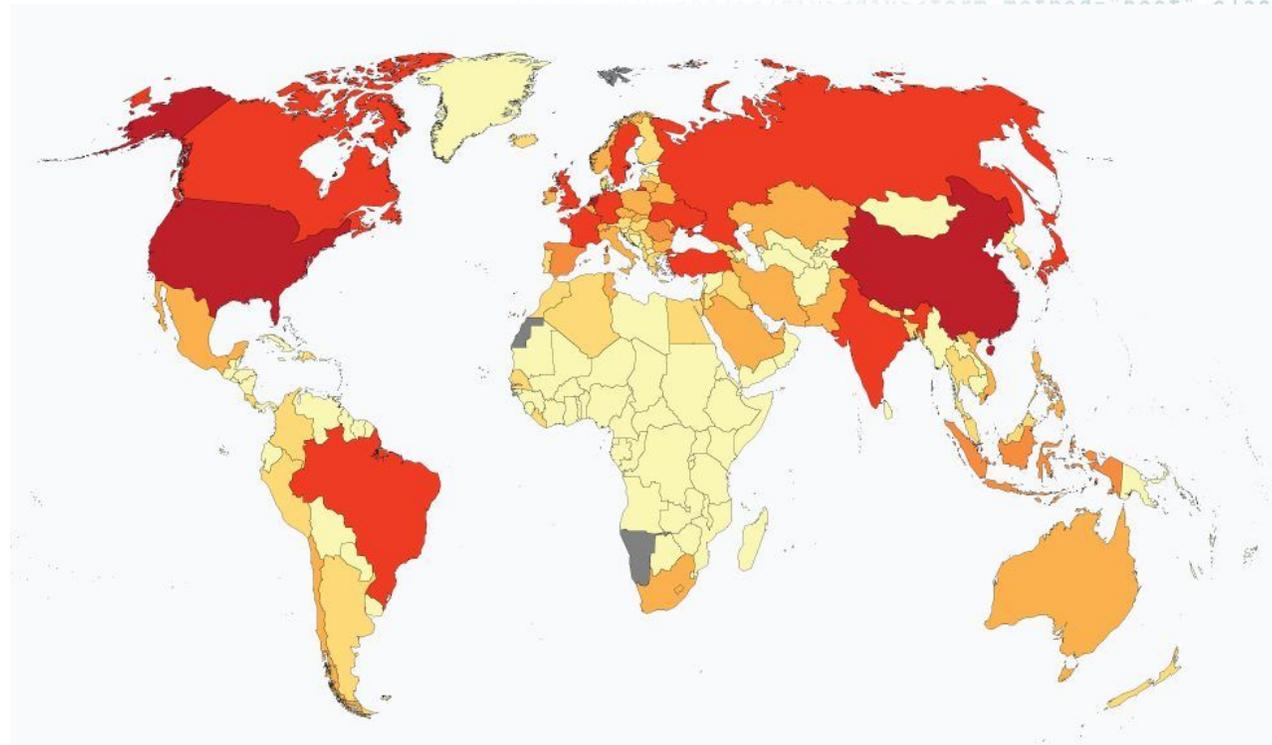
SQL, LFI, and XSS accounted for **93%** of malicious attacks in the most recent period.

# Web Application Threats

Attacks are on the rise:

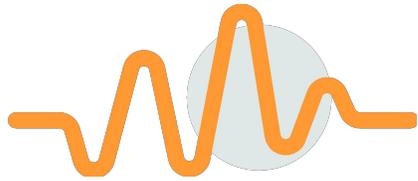
- Growing in scale
- Growing in sophistication
- Originating across countries

Source countries for web application attacks summer 2018



Country	Count	Percentage
USA	238m	30%
Netherlands	94m	12%
China	56m	7%
Brazil	49m	6%
Russia	35m	4%

# What Does This Mean for Your Business?



Web application attacks represent a large part of the **background noise**



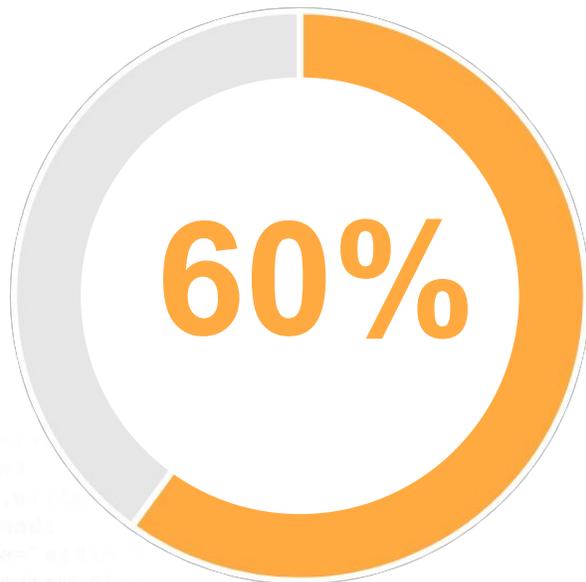
It's difficult to **detect attacks** specifically targeting your business in that noise



Understand your website traffic and business for better **threat detection**

# Threat from Operational Complexity

## 60% of security software remains unused



Source: Osterman Research

Top IT challenges are a lack of:

- **Business alignment**
- **Time/expertise to implement**
- **Staff to use product properly**

# The Better Web Application Firewall

## Not another thing to worry about



### Edge security

- Massive scale to mitigate and absorb attacks
- Insulates from collateral damage by attacks against other customers
- Removes malicious traffic from servers and networks, avoiding overprovisioning costs
- Prevents performance degradation from attacks consuming vital resources
- Delivers better end-user experience with content caching

# The Better Web Application Firewall

## Not another thing to worry about

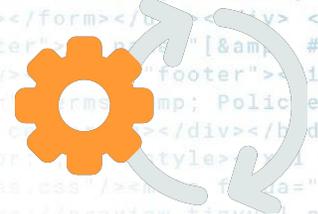


### Adaptive threat protection

- Maintains accuracy in fast changing threat landscape
- Data driven, best-in-industry research team
- Analysis of 15% to 30% of all internet traffic
- Continuous rule testing and tuning
- Automated rules designed for low false positives
- Special protection with custom rules

# The Better Web Application Firewall

## Not another thing to worry about



### Simple operation

- High degree of automation to increase operational agility and efficiency
- Automated rule updates offload your security teams
- Allows focus of resources and research on your high-value web assets
- Easy-to-read web analytics data in real time
- Dashboards support deep forensic analysis

# The Better Web Application Firewall

## Not another thing to worry about

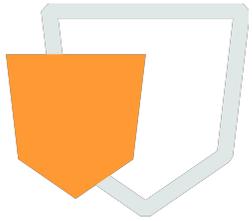


Integration that fits your business needs

- Self-service integration for vital protection
- Guided by experts to build a defense-in-depth solution
- Managed services for a complete security solution
- Technical and threat research support when you need it most

# The Better Web Application Firewall

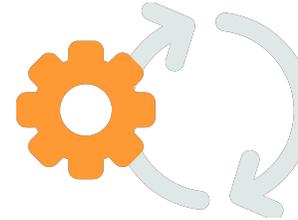
## What does it mean?



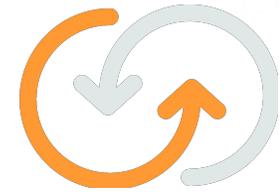
**Edge security  
for scale and  
performance**



**Adaptive  
threat  
protection**



**Simple  
operation with  
high  
automation**



**Integration  
that fits your  
business  
needs**

# Web Application Security

## Adaptive protection with more than just a firewall



### **Extend your security perimeter far beyond your site**

Scale your defense with a cloud edge WAF

### **Protect against all network layer DDoS attacks**

Reverse-proxy drops all traffic not on port 80 and 443

### **Refuse requests from countries outside your business**

Geo-based blocking of IP addresses

### **Protect from known attackers**

Positive or negative security model (black or white lists)

### **Protect against application layer DDoS attacks**

Rate controls block traffic that acts too fast or too slow

### **Use best WAF rules in the industry with confidence**

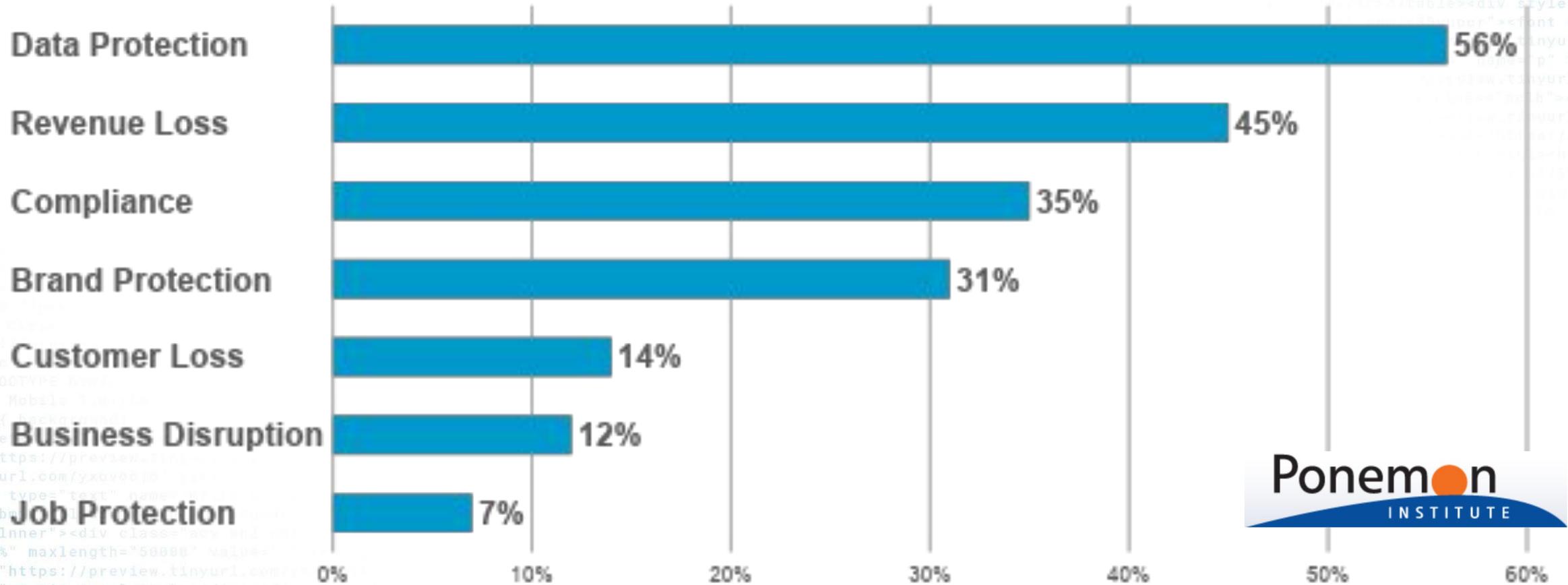
Data driven, continuously monitored and refined

### **Protect content servers, improving end-user experience**

Dynamic and static content caching

# Web Application Protection

## Addressing organizations' top concerns



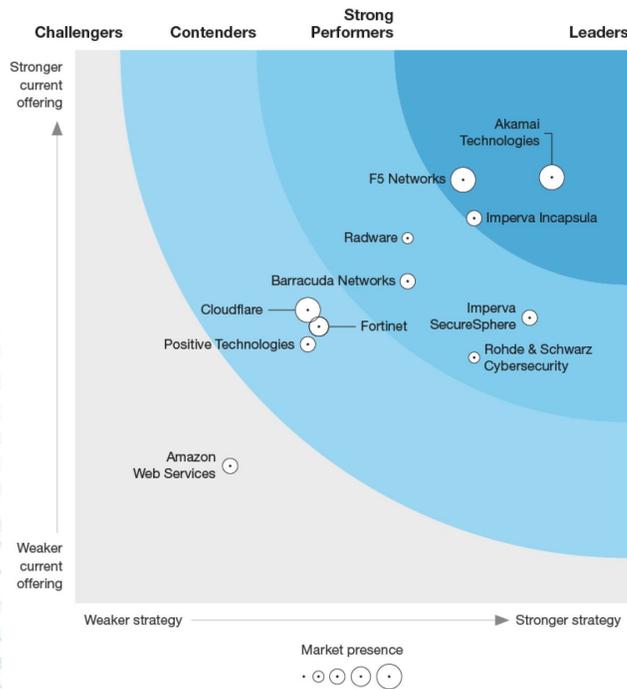
Source: Ponemon Report 9/17

# Market Leader in Security

## Named as a leader by Forrester and Gartner

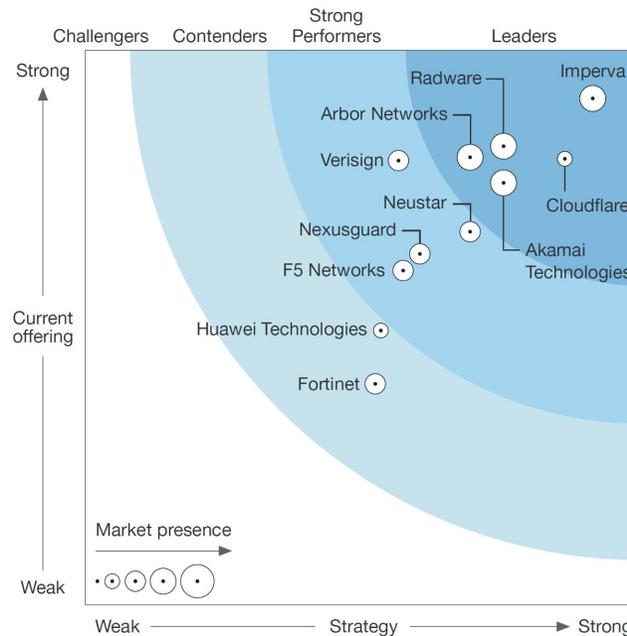
### Forrester Wave

Web Application Firewalls, Q2 2018



### Forrester Wave

DDoS Mitigation Solutions, Q4 2017



### Gartner Magic Quadrant

Web Application Firewalls, Aug 2018



#### Gartner Magic Quadrant

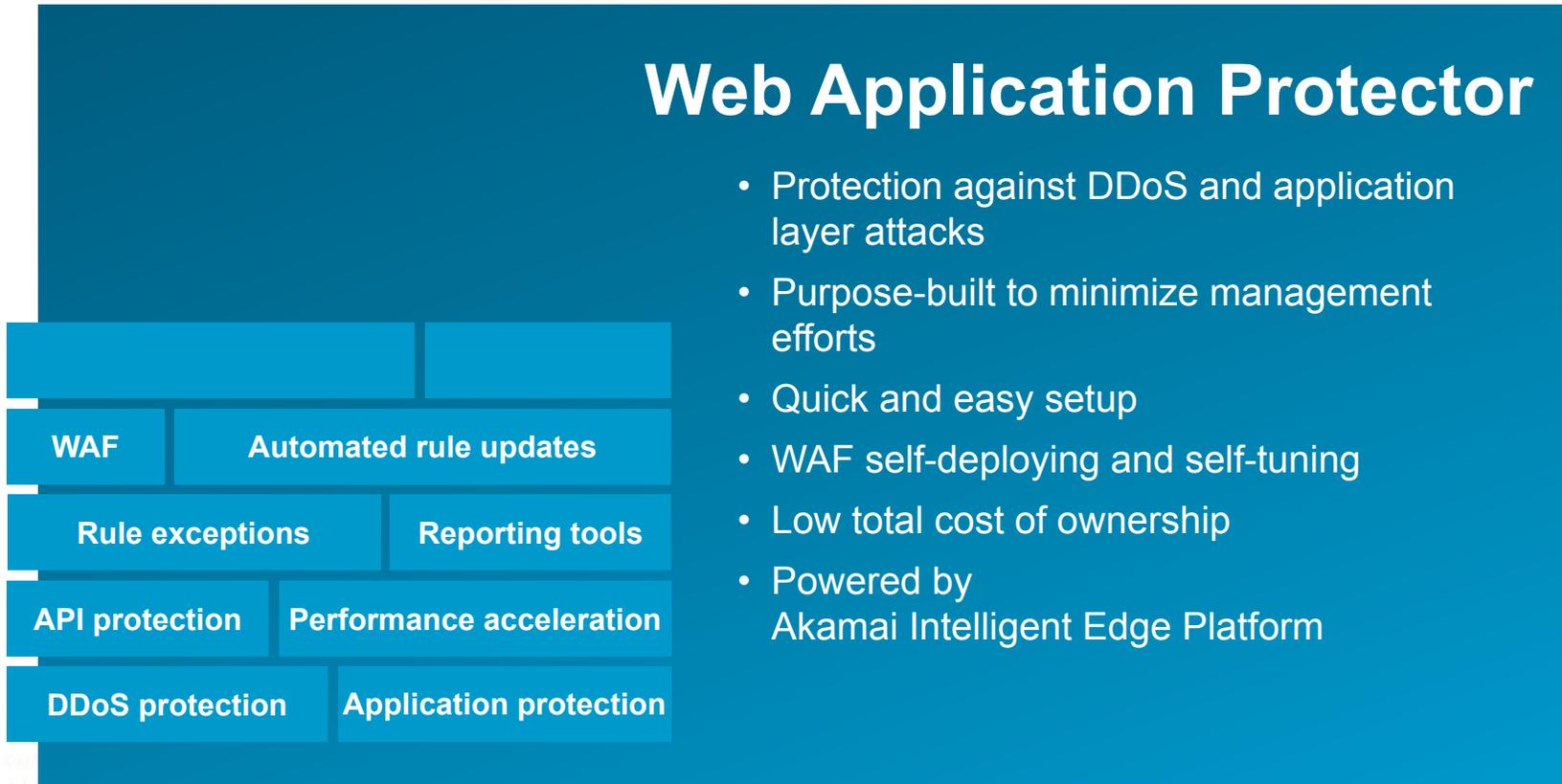
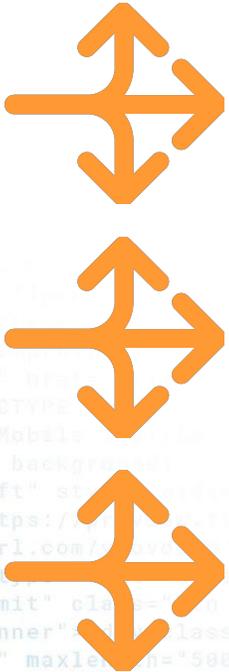
This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from Akamai.

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# Web Application Protector

## Simplifying application security

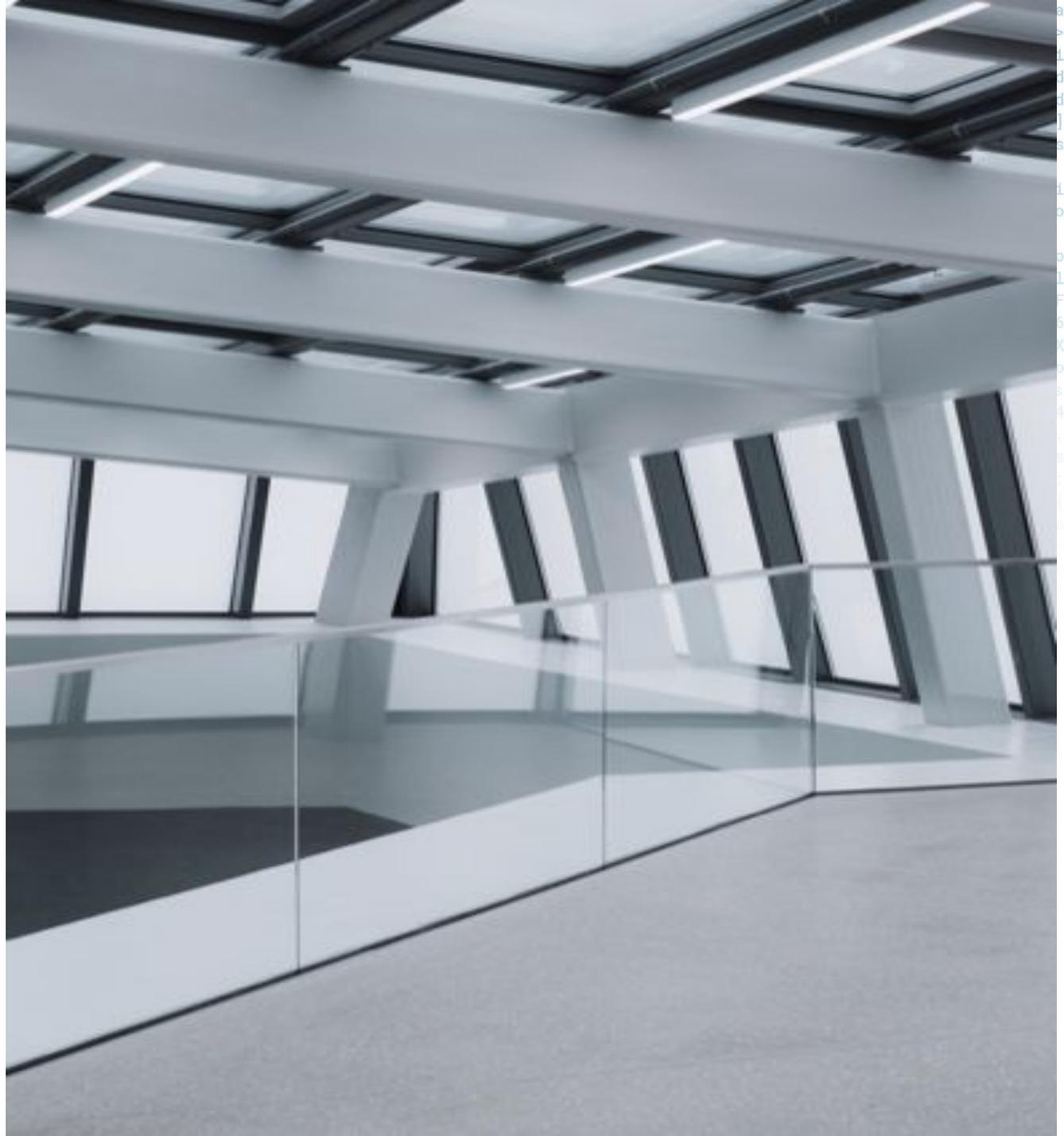
### Attacks



Your site

# *Protection with operational simplicity.*

## Web Application Protector



Ion



Intelligent automation  
and controls to maximize  
mobile and web user  
experiences

# PERFORMANCE is increasingly CHALLENGING

Real user analytics

Content weight & interactivity

Images and videos

3rd party content & Javascript

API Calls

Device & Network diversity

Cellular congestion

Bots and Security

34%

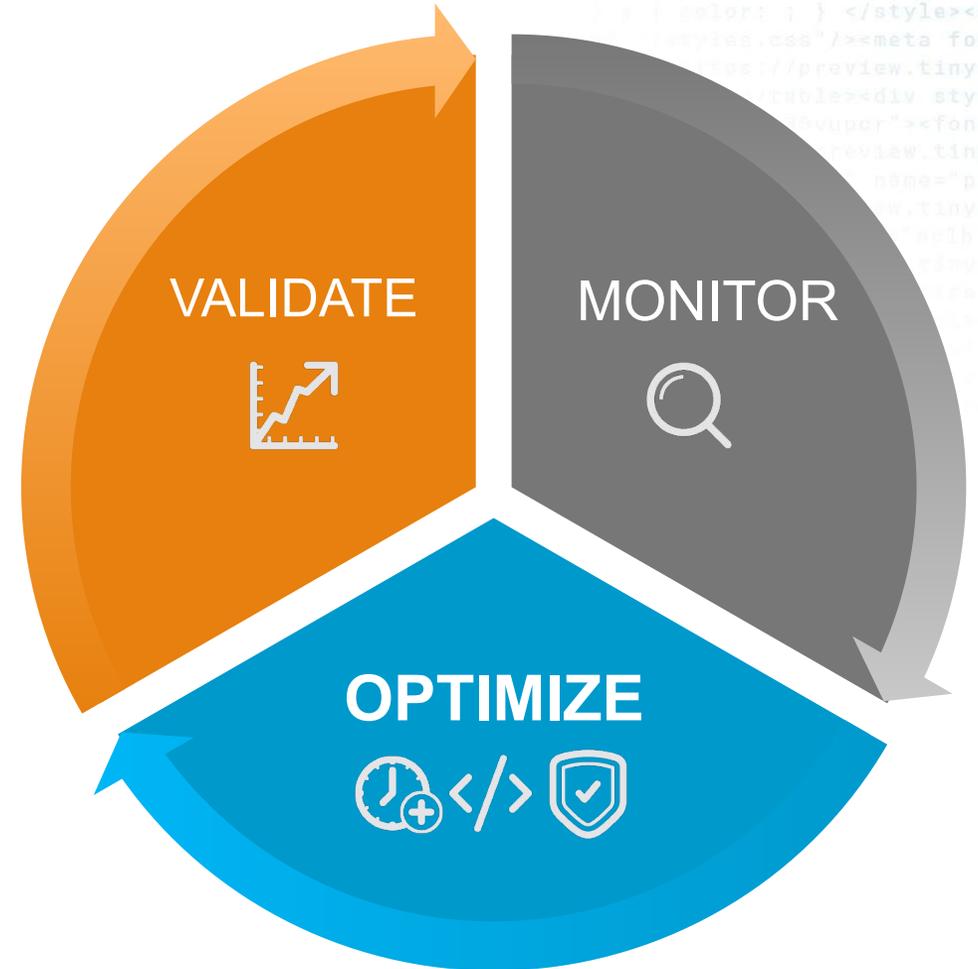
to switch to a competitor's app due to poor app experience



# Continuous Improvement Strategy

## Optimize customer experiences

- Insight into content, website and mobile app performance
- Technology to *maximize performance and optimize content*
- Tools to validate scalability and business impact



# Ion

Intelligent automation and controls to maximize user experiences



Infrastructure

**Akamai Intelligent Edge Platform**  
Scale, Reliability, Offload

Experience



Maximize Performance *Automatically*



Control Content *Easily*

Increased Agility *Seamlessly*

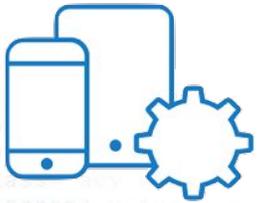
# Ion: Web and Mobile Performance

Intelligent automation and controls to maximize user experiences

## Maximize Performance *Automatically*

*Deliver superior web and mobile app experiences*

*Adaptive Acceleration automatically adapts to user behavior and real-time network conditions*



## Control Content *Easily*

Maximize the impact of personalized web & mobile apps

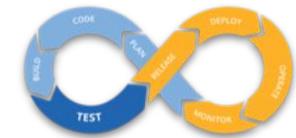
*Script Management and Advanced Client Cache enable policy-based, control over scripts and content to eliminate delays and errors*



## Increase Agility *Seamlessly*

Improve developer agility and accelerate time to market

*DevOps tools provide programmable interfaces and controls to enable automation and improve software quality*



# Ion: Web and Mobile Performance

Intelligent automation and controls to maximize user experiences

## Maximize Performance *Automatically*

**Why** - To deliver superior, differentiated web and mobile app experiences

**How** - Through automated, real user and network based, adaptive optimizations, with low level of effort

- Accelerate user interaction with faster browser and application rendering, and API acceleration
- Automatically ensure best network performance regardless of connectivity conditions



## Control Content *Easily*

**Why** - To create consistent, personalized apps

**How** - Through advanced, policy-based, script management, and cache control mechanisms

- Manage the impact of poorly performing 1st and 3rd party scripts
- Adapt resources, application, and content to users and network quality

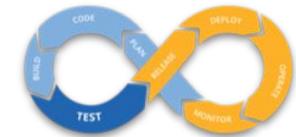


## Increase Agility *Seamlessly*

**Why** - To improve organizational agility and faster time to market

**How** - Through a wide range of programmable, automated, and repeatable interfaces and controls

- Easily integrate Akamai into your CI/CD workflows for rapid automation
- Streamline interactions and logic at the Edge
- Gain full visibility into platform health and performance



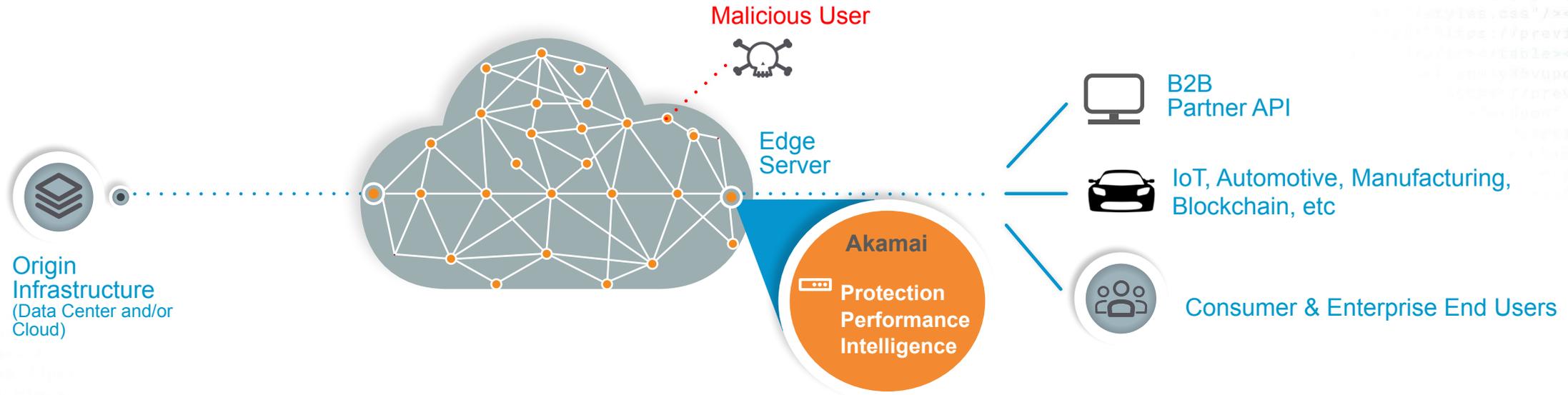


# Ion

## What's Inside?

# Akamai Intelligent Edge Platform

The foundation



## Protection

Down Time

Exploit

Abuse

## Performance

Scale and Offload

Reliability

Acceleration

## Intelligence

Data Analytics

Agility

Control

## ON THE AKAMAI EDGE PLATFORM...

Trillions of deliveries daily...

Processing 7.5 PB of telemetry data every day

Interacting with more than 1.3 billion unique client devices

113 EXABYTES delivered and 2.7 ingested every year

# The Platform

## Scale, Offload, Reliability

### What

→ Global reach, scale, reliability

→ Improved performance over origin

→ Reduced costs and offload

### How



#### Fast Network Acceleration

SureRoute (fixed), Protocol Optimization, Websockets, HTTP/2 Auto On



#### Compression

LMA, GZip, Brotli from origin



#### Caching and Offload

Resource and DNS Prefetch, Advanced Cache Optimizations and Cache Tags(Beta)

# The Platform

## Deliver Secure Experiences

### What

- PCI DSS compliant cloud-based network
- Secure delivery with managed and hosted third-party certificates
- Safeguard valuable assets with powerful access controls

### How



#### ESSL Network

HTTP2, TLS, TLS 1.3, Forward Secrecy ciphers



#### Certificate Provisioning

Suite of managed certificates (SAN, Wildcard, EV SAN) and support for customer-uploaded third-party ones



#### Access Control

Centralized Authorization, content access through IP, header, and auth, regional delivery (China CDN, Russia Secure CDN)

# Ion

## Maximize Performance *Automatically*

### What

- Accelerate websites, apps, and APIs
- Automate continuous performance improvements
- Maximize reliability and offload at global scale

### How



#### Adaptive Acceleration

Automatic Push and Preconnect, Resource Optimizer, Font Preloading, Script's adaptive Single Point of Failure



#### Fast Mobile Performance

SoureRoute for Cellular, Adaptive Network Optimizations, API Acceleration



#### Advanced Caching & Compression

Brotli, Zopfli, Universal Cache, API caching

# Ion

## Control Content *Easily*

### Why

- Adapt scripts and other resource behavior for the best experience
- Ensure rich application content is delivered **consistently**
- Manage policies with **intuitive** controls

### How



#### Script Management

Manage and mitigate the impact from scripts



#### Adaptive Application Behavior

Network awareness, content targeting

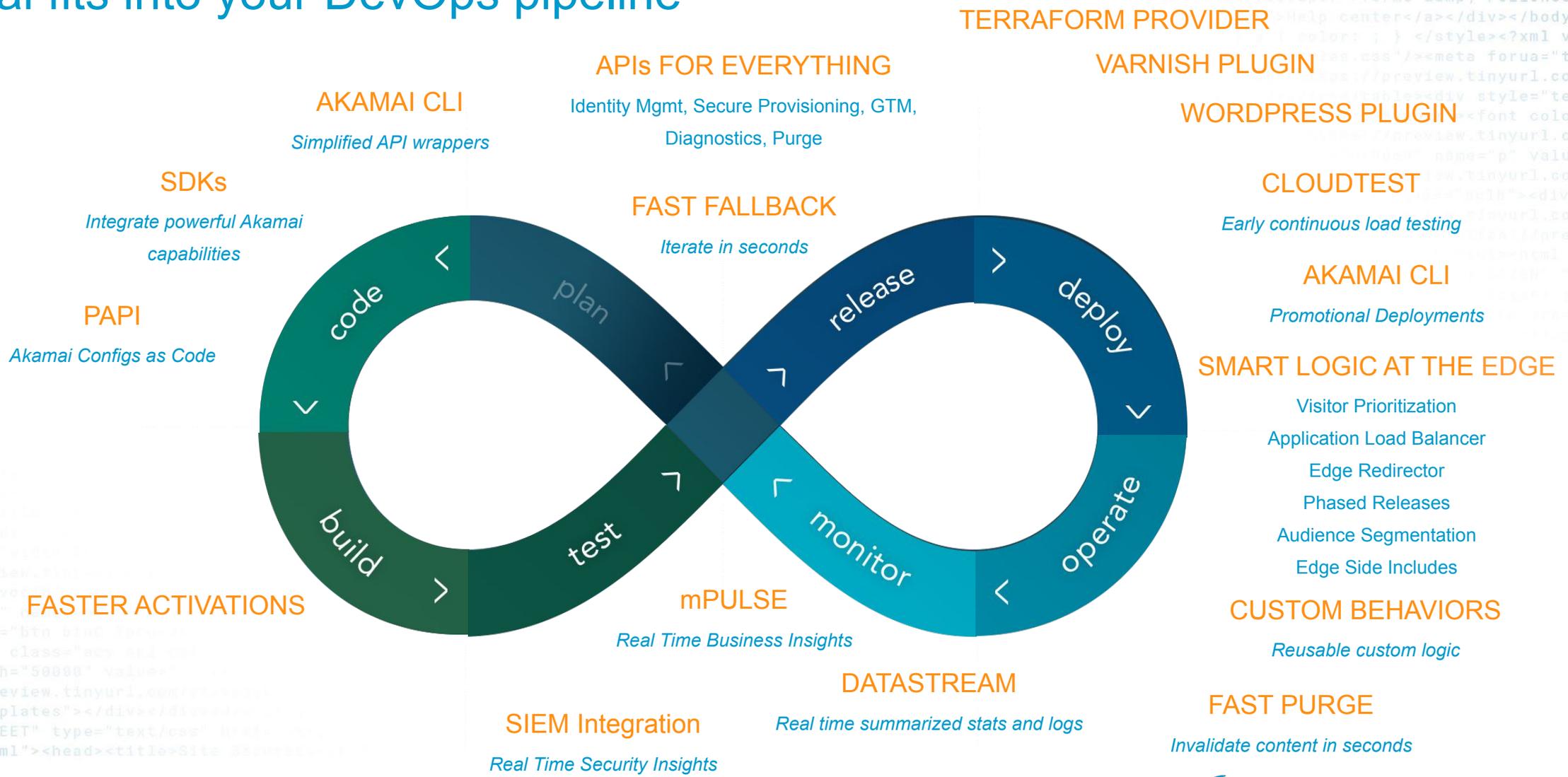


#### Client Cache Control

Contextual prepositioning, fast purge

# Increase Agility Seamlessly

## Akamai fits into your DevOps pipeline



# Case Studies



# CASE STUDY

## Eurail: Improving UX with Script Management

22%

faster page loads



4.5%

lower bounce rate

43%

cost savings

# ATTRIBUTED TO AKAMAI



<https://www.akamai.com/us/en/our-customers/customer-stories-eurail-dot-com.jsp>

# CASE STUDY

## AliExpress: Global Performance Attribution Model

**↑ 36%**

faster page loads

**↑ 10.5%**

more orders placed

**↑ 27%**

conversion

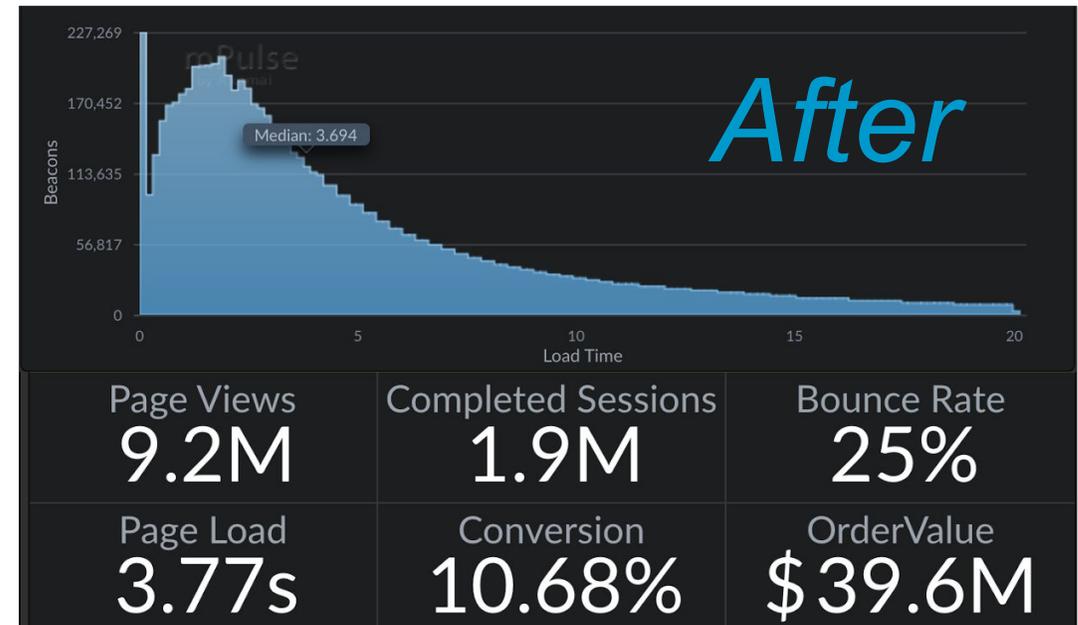
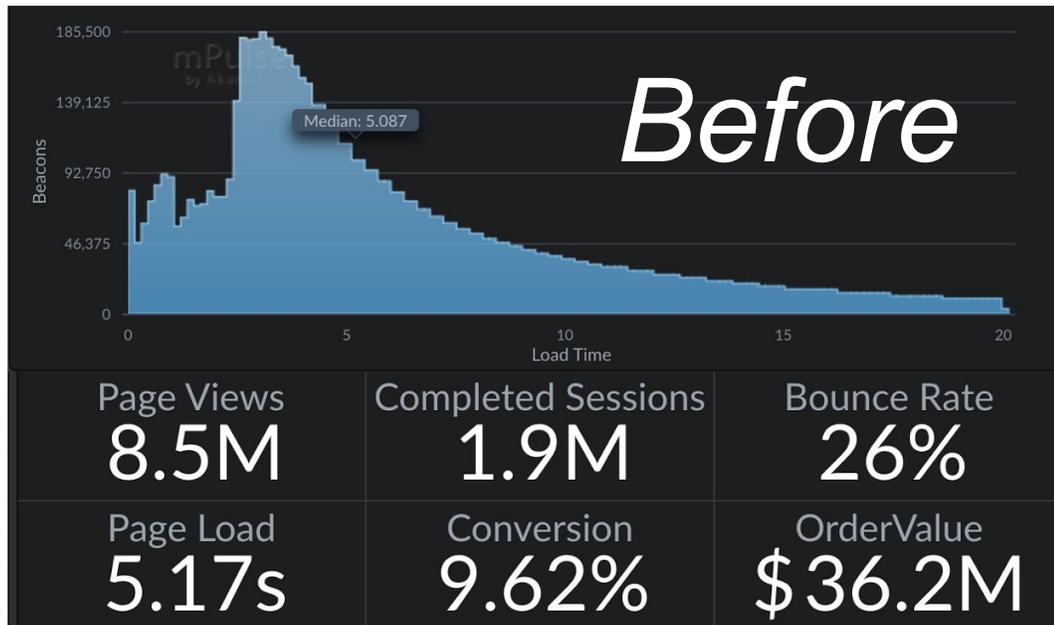
**80% ATTRIBUTED TO AKAMAI**

**AliExpress™**

# CASE STUDY

## Global Travel: Monitor, Optimize and Validate Performance

### 10% increase in revenue



# The Portfolio

## Ion and DSA

	<b>DSA</b> Dynamic Site Acceleration	<b>Ion</b> Adaptive Acceleration for Websites, Mobile Apps and APIs
<b>Scale, Reliability, Offload</b> (caching, compression, fast routing)	X	X
<b>Secure Delivery</b>	X	X
<b>Agility/DevOps Enabled</b>	X	X
<b>Adaptive Website Acceleration</b>		X
<b>Automated Mobile App Optimization</b>		X
<b>Advanced Content Control</b> (script management, application behavior)		X

# Ion Benefits

- Differentiated web and mobile apps, with low effort
  - Automated acceleration, advanced caching & compression, fast routing, and content control
- Maximize uptime and reach, reducing costs
  - Global scale, reliability and offload
- Faster time to market, increased agility
  - DevOps enabled CDN operations
- Protect online experiences, grow customer trust
  - Secure delivery of websites, apps and APIs



**Fast, Reliable, Secure**

# Why Akamai?

- Maximum online digital success
- Higher reliability, scale, performance
- Security at the edge for a cloud-based world



# Akamai

*Experience the Edge*