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

- Application Layer
- Network Layer
- DNS Layer
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

Source: SOTI DDoS Attack update Summer 2017 vs. Summer 2018
DDoS Attack Trends
Attacks easily double in size

Peak traffic in Gbps

<table>
<thead>
<tr>
<th>Year</th>
<th>Peak Traffic (Gbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>130</td>
</tr>
<tr>
<td>2014</td>
<td>185</td>
</tr>
<tr>
<td>2015</td>
<td>179</td>
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<tr>
<td>2016</td>
<td>240</td>
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<tr>
<td>2017</td>
<td>119</td>
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<td>2018</td>
<td>321</td>
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<tr>
<td>2019</td>
<td>249</td>
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<tr>
<td>2020</td>
<td>140</td>
</tr>
<tr>
<td>2021</td>
<td>158</td>
</tr>
<tr>
<td>2022</td>
<td>171</td>
</tr>
<tr>
<td>2023</td>
<td>309</td>
</tr>
<tr>
<td>2024</td>
<td>289</td>
</tr>
<tr>
<td>2025</td>
<td>363</td>
</tr>
<tr>
<td>2026</td>
<td>623</td>
</tr>
<tr>
<td>2027</td>
<td>517</td>
</tr>
<tr>
<td>2028</td>
<td>120</td>
</tr>
<tr>
<td>2029</td>
<td>78</td>
</tr>
<tr>
<td>2030</td>
<td>189</td>
</tr>
<tr>
<td>2031</td>
<td>56</td>
</tr>
</tbody>
</table>

DDoS attacks cost $25 per hour

Price Source: CIO DIVE
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

<table>
<thead>
<tr>
<th>Country</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>238m</td>
<td>30%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>94m</td>
<td>12%</td>
</tr>
<tr>
<td>China</td>
<td>56m</td>
<td>7%</td>
</tr>
<tr>
<td>Brazil</td>
<td>49m</td>
<td>6%</td>
</tr>
<tr>
<td>Russia</td>
<td>35m</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source countries for web application attacks summer 2018
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

Top IT challenges are a lack of:

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

Source: Osterman Research
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

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Web Application Protector
Simplifying application security

Web Application Protector

- Protection against DDoS and application layer attacks
- Purpose-built to minimize management efforts
- Quick and easy setup
- WAF self-deploying and self-tuning
- Low total cost of ownership
- Powered by Akamai Intelligent Edge Platform

Attacks

Your site

WAF  Automated rule updates
Rule exceptions  Reporting tools
API protection  Performance acceleration
DDoS protection  Application protection
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

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

SMART LOGIC AT THE EDGE
Visitor Prioritization
Application Load Balancer
Edge Redirector
Phased Releases
Audience Segmentation
Edge Side Includes

APIs FOR EVERYTHING
Identity Mgmt, Secure Provisioning, GTM,
Diagnostics, Purge

FAST FALLOUT
Iterate in seconds

DATASTREAM
Real time summarized stats and logs

CUSTOM BEHAVIORS
Reusable custom logic

FASTER ACTIVATIONS

mPULSE
Real Time Business Insights

SIEM Integration
Real Time Security Insights

TERRAFORM PROVIDER

VARNISH PLUGIN

CLOUDTEST
Early continuous load testing

AKAMAI CLI
Promotional Deployments

SDKs
Integrate powerful Akamai capabilities

PAPI
Akamai Configs as Code

FASTER ACTIVATIONS

AKAMAI CLI
Simplified API wrappers

AKAMAI CLI
Promotional Deployments
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

CASE STUDY
AliExpress: Global Performance Attribution Model

36% faster page loads
10.5% more orders placed
27% conversion

80% ATTRIBUTED TO AKAMAI
CASE STUDY
Global Travel: Monitor, Optimize and Validate Performance

10% increase in revenue

Before

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Views</td>
<td>8.5M</td>
</tr>
<tr>
<td>Completed Sessions</td>
<td>1.9M</td>
</tr>
<tr>
<td>Bounce Rate</td>
<td>26%</td>
</tr>
<tr>
<td>Page Load</td>
<td>5.17s</td>
</tr>
<tr>
<td>Conversion</td>
<td>9.62%</td>
</tr>
<tr>
<td>Order Value</td>
<td>$36.2M</td>
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</tbody>
</table>

After

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Views</td>
<td>9.2M</td>
</tr>
<tr>
<td>Completed Sessions</td>
<td>1.9M</td>
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<tr>
<td>Bounce Rate</td>
<td>25%</td>
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<tr>
<td>Page Load</td>
<td>3.77s</td>
</tr>
<tr>
<td>Conversion</td>
<td>10.68%</td>
</tr>
<tr>
<td>Order Value</td>
<td>$39.6M</td>
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</table>
# The Portfolio
## Ion and DSA

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