AWS WAF & Shield

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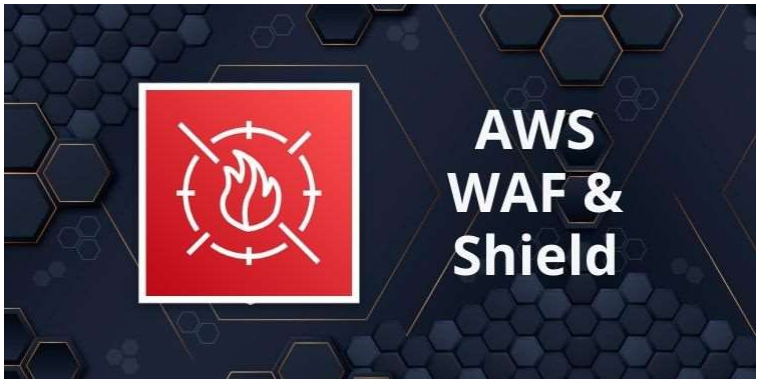
AWS WAF and AWS Shield help protect your AWS resources from web exploits and DDoS attacks.



AWS WAF is a web application firewall service that helps protect your web apps from common exploits that could affect app availability, compromise security, or consume excessive resources.

AWS Shield provides expanded DDoS attack protection for your AWS resources. Get 24/7 support from our DDoS response team and detailed visibility into DDoS events.

We'll now go into more detail on each service.

AWS Web Application Firewall (WAF)

AWS WAF is a web application firewall that helps protect your web applications from common web exploits that could affect application availability, compromise security, or consume excessive resources.

AWS WAF helps protect web applications from attacks by allowing you to configure rules that allow, block, or monitor (count) web requests based on conditions that you define.

These conditions include IP addresses, HTTP headers, HTTP body, URI strings, SQL injection and cross-site scripting.

Can allow or block web requests based on strings that appear in the requests using string match conditions.

For example, AWS WAF can match values in the following request parts:

- Header – A specified request header, for example, the User-Agent or Referer header.
- HTTP method – The HTTP method, which indicates the type of operation that the request is asking the origin to perform. CloudFront supports the following methods: DELETE, GET, HEAD, OPTIONS, PATCH, POST, and PUT.
- Query string – The part of a URL that appears after a ? character, if any.
- URI – The URI path of the request, which identifies the resource, for example, /images/daily-ad.jpg.
- Body – The part of a request that contains any additional data that you want to send to your web server as the HTTP request body, such as data from a form.
- Single query parameter (value only) – Any parameter that you have defined as part of the query string.
- All query parameters (values only) – As above buy inspects all parameters within the query string.

New rules can be deployed within minutes, letting you respond quickly to changing traffic patterns.

When AWS services receive requests for web sites, the requests are forwarded to AWS WAF for inspection against defined rules.

Once a request meets a condition defined in the rules, AWS WAF instructs the underlying service to either block or allow the request based on the action you define.

With AWS WAF you pay only for what you use.

AWS WAF pricing is based on how many rules you deploy and how many web requests your web application receives.

There are no upfront commitments.

AWS WAF is tightly integrated with Amazon CloudFront and the Application Load Balancer (ALB), services.

When you use AWS WAF on Amazon CloudFront, rules run in all AWS Edge Locations, located around the world close to end users.

This means security doesn't come at the expense of performance.

Blocked requests are stopped before they reach your web servers.

When you use AWS WAF on an Application Load Balancer, your rules run in region and can be used to protect internet-facing as well as internal load balancers.

Web Traffic Filtering

AWS WAF lets you create rules to filter web traffic based on conditions that include IP addresses, HTTP headers and body, or custom URIs.

This gives you an additional layer of protection from web attacks that attempt to exploit vulnerabilities in custom or third-party web applications.

In addition, AWS WAF makes it easy to create rules that block common web exploits like SQL injection and cross site scripting.

AWS WAF allows you to create a centralized set of rules that you can deploy across multiple websites.

This means that in an environment with many websites and web applications you can create a single set of rules that you can reuse across applications rather than recreating that rule on every application you want to protect.

Full feature API

AWS WAF can be completely administered via APIs.

This provides organizations with the ability to create and maintain rules automatically and incorporate them into the development and design process.

For example, a developer who has detailed knowledge of the web application could create a security rule as part of the deployment process.

This capability to incorporate security into your development process avoids the need for complex handoffs between application and security teams to make sure rules are kept up to date.

AWS WAF can also be deployed and provisioned automatically with AWS CloudFormation sample templates that allow you to describe all security rules you would like to deploy for your web applications delivered by Amazon CloudFront.

AWS WAF is integrated with Amazon CloudFront, which supports custom origins outside of AWS – this means you can protect web sites not hosted in AWS.

Support for IPv6 allows the AWS WAF to inspect HTTP/S requests coming from both IPv6 and IPv4 addresses.

Real-time visibility

AWS WAF provides real-time metrics and captures raw requests that include details about IP addresses, geo locations, URIs, User-Agent and Referers.

AWS WAF is fully integrated with Amazon CloudWatch, making it easy to setup custom alarms when thresholds are exceeded, or attacks occur.

This information provides valuable intelligence that can be used to create new rules to better protect applications.

AWS Shield

AWS Shield is a managed Distributed Denial of Service (DDoS) protection service that safeguards applications running on AWS.

AWS Shield provides always-on detection and automatic inline mitigations that minimize application downtime and latency, so there is no need to engage AWS Support to benefit from DDoS protection.

There are two tiers of AWS Shield – Standard and Advanced.

AWS Shield Standard

All AWS customers benefit from the automatic protections of AWS Shield Standard, at no additional charge.

AWS Shield Standard defends against most common, frequently occurring network and transport layer DDoS attacks that target web sites or applications.

When using AWS Shield Standard with Amazon CloudFront and Amazon Route 53, you receive comprehensive availability protection against all known infrastructure (Layer 3 and 4) attacks.

AWS Shield Advanced

Provides higher levels of protection against attacks targeting applications running on Amazon Elastic Compute Cloud (EC2), Elastic Load Balancing (ELB), Amazon CloudFront, AWS Global Accelerator and Amazon Route 53 resources.

In addition to the network and transport layer protections that come with Standard, AWS Shield Advanced provides additional detection and mitigation against large and sophisticated DDoS attacks, near real-time visibility into attacks, and integration with AWS WAF, a web application firewall.

AWS Shield Advanced also gives you 24×7 access to the AWS DDoS Response Team (DRT) and protection against DDoS related spikes in your Amazon Elastic Compute Cloud (EC2), Elastic Load Balancing (ELB), Amazon CloudFront, AWS Global Accelerator and Amazon Route 53 charges.

AWS Shield Advanced is available globally on all Amazon CloudFront, AWS Global Accelerator, and Amazon Route 53 edge locations.

Origin servers can be Amazon S3, Amazon Elastic Compute Cloud (EC2), Elastic Load Balancing (ELB), or a custom server outside of AWS.

AWS Shield Advanced includes DDoS cost protection, a safeguard from scaling charges because of a DDoS attack that causes usage spikes on protected Amazon EC2, Elastic Load Balancing (ELB), Amazon CloudFront, AWS Global Accelerator, or Amazon Route 53.

If any of the AWS Shield Advanced protected resources scale up in response to a DDoS attack, you can request credits via the regular AWS Support channel.

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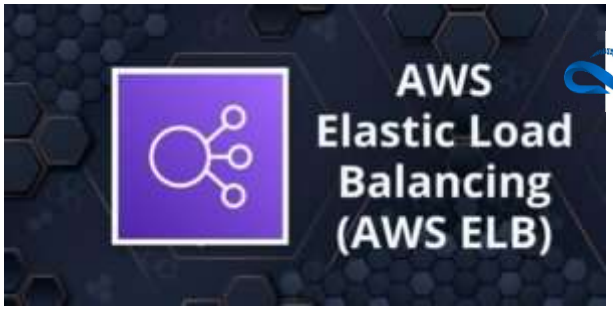

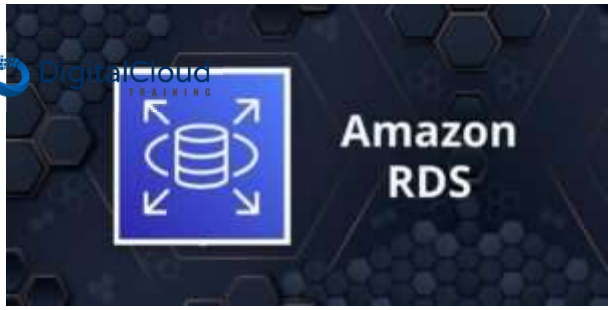

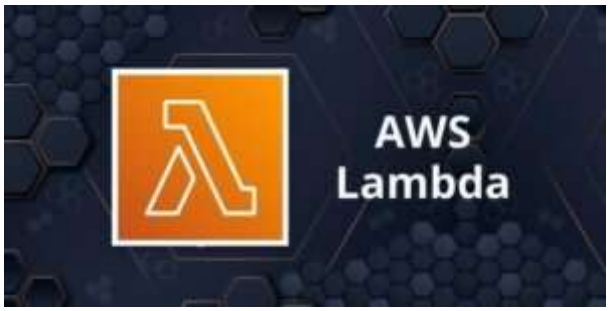

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