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Web应用防火墙

Announcements & Updates

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Alibaba Cloud

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Document conventions

Style	Description	Example
Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	Danger: Resetting will result in the loss of user configuration data.
Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	Notice: If the weight is set to 0, the server no longer receives new requests.
Note	A note indicates supplemental instructions, best practices, tips, and other content.	Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click **Settings**> **Network**> **Set network type**.
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click **OK**.
`Courier font`	Courier font is used for commands	Run the `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

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1.Announcement on the retirement of the full log feature

Dear Alibaba Cloud users,

To improve user experience, we have replaced the full log feature of Web Application Firewall (WAF) with the Log Service for WAF feature. As of November 30, 2021, the full log feature of WAF is no longer available.

The Log Service for WAF feature provides more log fields and delivers advanced capabilities such as custom storage and custom query and analysis. To enable the Log Service for WAF feature, you can go to the WAF console and upgrade your WAF instance. The logs that are stored by the full log feature cannot be migrated.

Thank you for your continued support. We apologize for the inconvenience.

If you have any questions, submit a ticket.

2.Release notes

This topic describes the release notes for Web Application Firewall (WAF) features.

2021

Release date	Feature	Description	References
2021-09-18	Support for custom header fields that record the actual IP addresses of clients	Custom header fields can be used to record the actual IP addresses of clients. When you add a website to WAF, you can enable the WAF traffic marking feature and configure custom header fields to record the actual IP addresses of clients. After you enable the WAF traffic marking feature, origin servers can obtain the actual IP addresses of clients from custom header fields that are contained in WAF back-to-origin requests. You can use the WAF traffic marking feature only after you configure the custom header fields that record the actual IP addresses of clients for the origin servers.	网站接入
2021-08-13	Upgraded Log Service for WAF	The Log Service for WAF feature is upgraded. • Some log fields are added. Log fields are classified into optional fields and required fields. If you enable the Log Service for WAF feature for the first time, only the required fields are included in logs by default. You can modify the log settings to include optional log fields in logs. • Log settings can be modified. For example, you can modify the log storage period, adjust optional log fields, and change the log storage type on the Log Settings page. The log storage type can be Logs or Block Logs. • Logs can be queried by using search conditions. After you specify search conditions, the system automatically generates the query statement.	Log fields supported by WAF Modify log settings

Release date	Feature	Description	References
2021-07-30	Support for origin SNI	**Enable Origin SNI** is supported in CNAME record mode. If your website uses HTTPS and the origin server hosts multiple domain names, you can enable this feature after you select HTTPS. This way, you can add a Server Name Indication (SNI) field in a WAF back-to-origin request to specify the domain name that you want to access.	网站接入
2021-06-22	Support for server ports in custom protection policies	The **Server-Port** field is added and can be used as a match field in custom protection policies. The field is supported only for WAF instances that run Business Edition or higher.	Fields in match conditions
2021-05-11	Support for console-based cluster deployment and node management in Hybrid Cloud WAF	The following features are supported by Hybrid Cloud WAF: • You can install the WAF agent on your on-premises servers to support the remote deployment, upgrade, and management of protection clusters. • You can configure the initial settings of your protection clusters in the WAF console. You can create node groups, add nodes to the node groups, and manage nodes in the node groups. The management operations include querying and deleting nodes from a node group.	Install the WAF agent Deploy a protection cluster for Hybrid Cloud WAF
2021-05-08	Support for custom header fields that are used to obtain actual IP addresses of clients	The **Obtain Source IP Address** parameter is supported in CNAME record mode. If a Layer 7 proxy, such as Anti-DDoS Pro, Anti-DDoS Premium, or Alibaba Cloud CDN, is deployed in front of WAF, you can use the value of the specified header field as the actual IP address of the client. If multiple header fields are specified, you can obtain the actual IP address of the client from the fields in sequence.	网站接入
2021-04-01	Support for IPv6 addresses of origin servers	The IPv6 addresses of origin servers can be specified for **Destination Server (IP Address)** in CNAME record mode. This feature is suitable for users that need to upgrade their network from IPv4 to IPv6 in the finance, government, and enterprise sectors.	网站接入

Release date	Feature	Description	References
2021-03-23	Support for threat event analysis on the Overview page	The threat event analysis module is added to the Overview page. Threat events are generated based on the analysis of a large number of attack alerts. This module helps you identify attack sources and defend against the attacks. This feature is suitable for scenarios in which your services are at risk of web attacks and you want to obtain threat events based on a large number of alerts.	View protection history on the WAF Overview page
2021-03-18	Support for false positive ignoring on the Security Report page	False positives can be ignored on the Security Report page. WAF can automatically generate whitelist rules for specific rules. You can also add whitelist rules for Web Intrusion Prevention based on specific rule IDs or rules types. This way, the user experience is improved. This feature is suitable for scenarios in which false positives must be managed at a fine-grained granularity without affecting protection effects.	View security reports
2021-01-29	Scenario-specific configuration feature released	The scenario-specific configuration feature is released. You can use this feature to customize anti-crawler rules to protect your business from malicious crawlers.	Configure anti-crawler rules for websites
2021-01-15	Support for custom settings of TLS versions and cipher suites	Transport Layer Security (TLS) protocol versions and cipher suites can be selected based on your business requirements. This helps ensure security compliance and compatibility for HTTPS communication in different scenarios. This feature is suitable for scenarios in which some TLS protocols and cipher suites need to be disabled or enabled due to classified protection requirements and compatibility requirements.	Configure custom TLS settings

2020

Release date	Feature	Description	References
2020-10-21	Security report optimized	The security report feature is optimized to filter attack records by rule ID.	View security reports

Release date	Feature	Description	References
2020-06-04	Optimized custom protection rule groups and Overview page	• Rules in custom rule groups can be automatically updated, which improves the security and availability of the groups. • The protection rule details and impact scopes of zero-day vulnerabilities are displayed on the Overview page.	Customize protection rule groups View protection history on the WAF Overview page
2020-05-20	Big Data Deep Learning Engine optimized	Attack probability thresholds can be adjusted to achieve optimal protection effects for various business scenarios.	Configure the Big Data Deep Learning Engine
2020-05-18	Support for Terraform	Terraform is supported to meet the operations and maintenance (O&M) requirements of large enterprises. Terraform allows you to perform basic operations, such as domain name management and policy management, by using code. **Note** This feature also enables automated operations in the console. This way, high operational efficiency is achieved and human errors are eliminated. For more information, see Terraform documentation.	None
2020-04-10	User experience optimized	Data on the Overview page can be drilled down to the Security report page, and data on the Security report page can be drilled down to the Log Service page. As a result, the loop of operations data closes. • Data in the Protection statistics section of the **Overview** page can be drilled down to the Security report page. The ranking on the **URL Requests** tab shows the domain name information. • Statistics on the **Access Control/Throttling** tab of the **Security Report** page can be drilled down to the Log Service page. **Custom access control rules** that match access requests can be viewed and edited.	View protection history on the WAF Overview page View security reports

Release date	Feature	Description	References
2020-04-02	Support for bot management	Value-added services such as bot management and app protection are supported to provide intelligent protection against automated attacks and intelligent protection for bot traffic. The bot management module provides trusted communications to protect native apps and defends against bot script abuse. **Note** The bot management and app protection modules are available only in the new protection engine that was released in January 2020. If you use a protection engine of an earlier version, we recommend that you upgrade your protection engine at the earliest opportunity.	Configure a whitelist for Bot Management Overview of app protection
2020-03-10	Upgrade guide released for the new protection engine	An upgrade guide is provided to help existing users upgrade their protection engines without service interruption.	Protection engine upgrade
2020-03-04	Support for intelligent load balancing among multiple SLB service nodes	Intelligent load balancing is supported. WAF connects to multiple Server Load Balancer (SLB) service nodes to enable automatic disaster recovery and optimal routing with low latency.	Intelligent load balancing
2020-02-14	Upgraded Log Service for WAF and optimized user experience	Log Service for WAF is upgraded. You can enable the full log feature for specific domain names.	None
2020-02-10	Alert feature upgraded	The alert notification feature is upgraded to provide basic statistics and details about security events and workload monitoring. Related alerts are provided to support routine O&M.	Configure WAF alerting

Release date	Feature	Description	References
2020-01-15	Protection capabilities upgraded	Fine-grained throttling and robust protection against malicious network traffic are supported in the new protection engine of WAF. The account security feature can be enabled to protect against common HTTP flood attacks, dictionary attacks, and weak password sniffing. **Note** The protection capabilities can be used by all users. However, only the users who purchased WAF instances in the console can directly enable these capabilities. Existing users must wait until March 2020 before they can upgrade their WAF instances to enable the protection capabilities.	Configure the Protection Rules Engine

2019

Release date	Feature	Description	References
2019-12-20	Features in the Exclusive edition optimized	Features in the WAF Exclusive edition are optimized. You can customize the request timeout period for your domain name.	Create an exclusive cluster
2019-11-28	Support for account security detection	The account security feature is used to detect account security risks on logon interfaces. The risks include dictionary attacks, brute-force attacks, spam user registrations, weak password sniffing, and SMS flood attacks.	Configure account security
2019-10-25	Exclusive edition released	The WAF Exclusive edition is released. The Exclusive edition allows you to customize items such as protection ports, TLS versions, cipher suites, and the response page that appears when a request is blocked. This edition meets your special requirements for web application protection.	Create an exclusive cluster

Release date	Feature	Description	References
2019-10-22	URL profiling supported for protected websites	URL profiling is supported. WAF can automatically identify business URL profiles and business volumes based on the normal network traffic that flowed through websites. This allows you to customize protection policies for different websites.	None
2019-10-16	Data of website scan protection provided on the Overview page	The volume of traffic blocked by the scan protection module, a list of blocked website scan attacks, attack details, and resolutions provided by security experts are displayed on the Overview page in the WAF console.	View protection history on the WAF Overview page
2019-08-22	Positive security model released	The positive security model is based on algorithms for intelligent big data learning. This model learns the historical network traffic of users in an iterative manner. This allows you to customize automatic protection policies.	Configure the positive security model
2019-07-18	Web attack details added to the Security report page	Web attack details are added to the Security report page to show the specific causes of blocked attacks. This improves the efficiency of security O&M.	View security reports
2019-06-27	Protection for HTTP/2-compliant applications	Protection for HTTP/2-compliant applications is supported. This feature increases the coverage rate of application protocols. This ensures that the applications of WAF users are fully protected.	网站接入
2019-06-13	Decoding methods of web request content in protection configuration	Decoding methods of web request content can be customized in the protection configuration.	Configure the Protection Rules Engine
2019-05-30	ACL rules optimized	Multiple IP addresses or CIDR blocks can be added to ACL rules for condition matching.	Create a custom protection policy

Release date	Feature	Description	References
2019-05-30	Overview page optimized	The Overview page in the WAF console is optimized. On this page, the system aggregates security operations events based on a large volume of log data and provides professional suggestions for event handling. This page also displays the number of attacks by type and the frequently attacked domain names. This way, the capabilities of WAF are enhanced.	View protection history on the WAF Overview page
2019-03-19	Threat intelligence feature released	The threat intelligence feature is released. This feature provides a library that contains scan attack information. You can customize the thresholds of network scan frequency and duration for blocking malicious scan attacks based on the information. This feature is used to prevent scan attacks with common signatures, such as path traversal.	Configure scan protection
2019-01-03	Support for custom countries and regions to block requests	The region blacklist is supported. You can specify countries and regions to block all requests from the IP addresses in the specified countries and regions.	Configure a blacklist

2018

Release date	Feature	Description	References
2018-12-20	API operations available for website tamper-proofing	API operations are available for website tamper-proofing. You can call these operations to update cached pages and add protection rules.	None
2018-12-13	Customization of protection rule groups for web applications	Protection rule groups for web applications can be customized. This allows you to configure rules based on your business requirements. This prevents false request blocking caused by default protection rules and ensures business security.	Customize protection rule groups
2018-11-16	Support for one-year storage of business logs	WAF is integrated with Log Service to collect, query, and analyze business logs of websites that are added to WAF in real time.	Overview of the Log Service for WAF feature
2018-10-24	Support for traffic marking	Traffic marking is supported. You can specify a header field name and value to mark the traffic forwarded by WAF.	网站接入

Release date	Feature	Description	References
2018-10-01	Support for security events and alerts	Security events and system alerts can be sent to you by using text messages or emails. You can customize metrics to detect business exceptions at the earliest opportunity.	Configure WAF alerting
2018-08-09	Support for the Big Data Deep Learning Engine	The Big Data Deep Learning Engine is supported. It offers powerful machine learning capabilities for WAF to identify exceptions and block potentially malicious requests.	Configure the Big Data Deep Learning Engine
2018-07-27	API operations provided	API operations for common configurations in the console are provided to facilitate batch processing.	List of operations by function
2018-04-27	Precise access control enhanced	More HTTP header fields can be used to set ACL rules and filter access requests.	Create a custom protection policy
2018-03-15	Support for release of WAF instances	WAF instances can be released in the console based on business requirements.	Terminate the WAF service

2017

Release date	Feature update	Description
2017-12-28	Non-standard ports added	More non-standard ports are supported for protection.
2017-11-24	Support for multiple load balancing algorithms	Multiple load balancing algorithms can be selected as required to meet different business requirements.
2017-10-30	Application security solutions provided	Application security solutions are provided to protect your applications from traffic flooding attacks and data crawling.
2017-10-26	Support for WebSocket	WebSocket-compliant website service is supported.
2017-08-31	Support for monitoring of error codes	Error codes can be monitored.
2017-08-31	Support for query of service bandwidth	The uplink and downlink bandwidth usage can be queried.

Release date	Feature update	Description
2017-08-31	Support for the query of queries per second (QPS)	The QPS can be queried by instance or domain name.
2017-08-16	Support for viewing of blackhole event details	The information such as attack thresholds and events generated when a blackhole occurs can be viewed.
2017-07-27	Exclusive WAF IP addresses released	Exclusive WAF IP addresses are released. You can purchase exclusive WAF IP addresses to protect specific domain names.
2017-07-25	Precise access control optimized	Policies for risk control on allowed access requests and region blocking can be configured in precise access control rules.
2017-07-25	CAPTCHA algorithm optimized	The CAPTCHA algorithm in custom HTTP flood protection rules is optimized, which improves the accuracy in blocking HTTP flood attacks.
2017-07-25	Support for more logical operators	Logical operators such as "Does not exist" and "Value length range" are added to define precise access control rules.
2017-07-25	Support for detection of more HTTP fields	Rules for detection of more HTTP fields are supported in precise access control.
2017-06-07	Support for back-to-origin domain names	Back-to-origin addresses can be set to domain names in website configuration.
2017-05-25	Data leakage prevention feature released	A sensitive data leakage prevention scheme is released based on network security regulations.
2017-04-12	HTTPS implementation with a few clicks	HTTPS-based website access is implemented with a few clicks, without changes in server configuration.
2017-04-12	Support for non-standard ports in multiple editions of WAF	Non-standard ports are supported in multiple editions of WAF for security protection.
2017-03-28	Support for the big-data threat intelligence feature	The big-data threat intelligence feature is supported. Services such as security score assessment, high-risk warning, and viewing of attack information are provided.
2017-03-08	Access experience optimized	DNS records can be added with a few clicks.

Release date	Feature update	Description
2017-02-09	Support for the website tamper-proofing feature	The website tamper-proofing feature is supported to protect web page data from being tampered with.
2017-01-05	Support for virtual hosts	Virtual hosts (HiChina) are supported for website security protection.

2016

Release date	Feature update	Description
2016-12-21	WAF V3.1 released	WAF V3.1 is released. This version improves the core protection capabilities of protection engines and provides features such as blocking IP addresses from specified regions and customizing protection rules to block HTTP flood attacks.
2016-12-01	Intelligent Semantic Analysis Engine provided	The Intelligent Semantic Analysis Engine is provided. Compared with the RegEx Protection Engine, this engine reduces false positives.

3.Security bulletin

3.1. Protection engine upgrade

From March 11, 2020, Web Application Firewall (WAF) upgraded the protection engine for all users. The new protection engine is reliable and easy to use.

The new protection engine offers the following benefits:

- Improved protection effects

  Functions are integrated into protection modules, such as web intrusion prevention, data security, bot management, and access control and throttling. The modules provide protection for your business.

  The new protection engine also provides precise throttling and account security capabilities. These capabilities allow you to protect your servers from unauthorized access, HTTP flood attacks, credential stuffing, weak password attacks, and brute-force attacks. After the upgrade, WAF displays a visual report of the security and protection services.

- Fine-grained throttling can be achieved by using custom protection policies.

  The custom protection policy feature allows you to configure more fields and rules. It also provides you with precise throttling capabilities under complex conditions. This feature enables you to manage unauthorized access requests in various business scenarios.

  - The custom HTTP flood protection rules in the original engine are integrated into custom protection policies to provide more precise throttling capabilities. For more information, see Create a custom protection policy.
  - The original HTTP ACL policy feature can be used to allow legitimate traffic. After the upgrade, you can configure website whitelists for each protection module to allow legitimate traffic. For more information, see Configure a website whitelist.

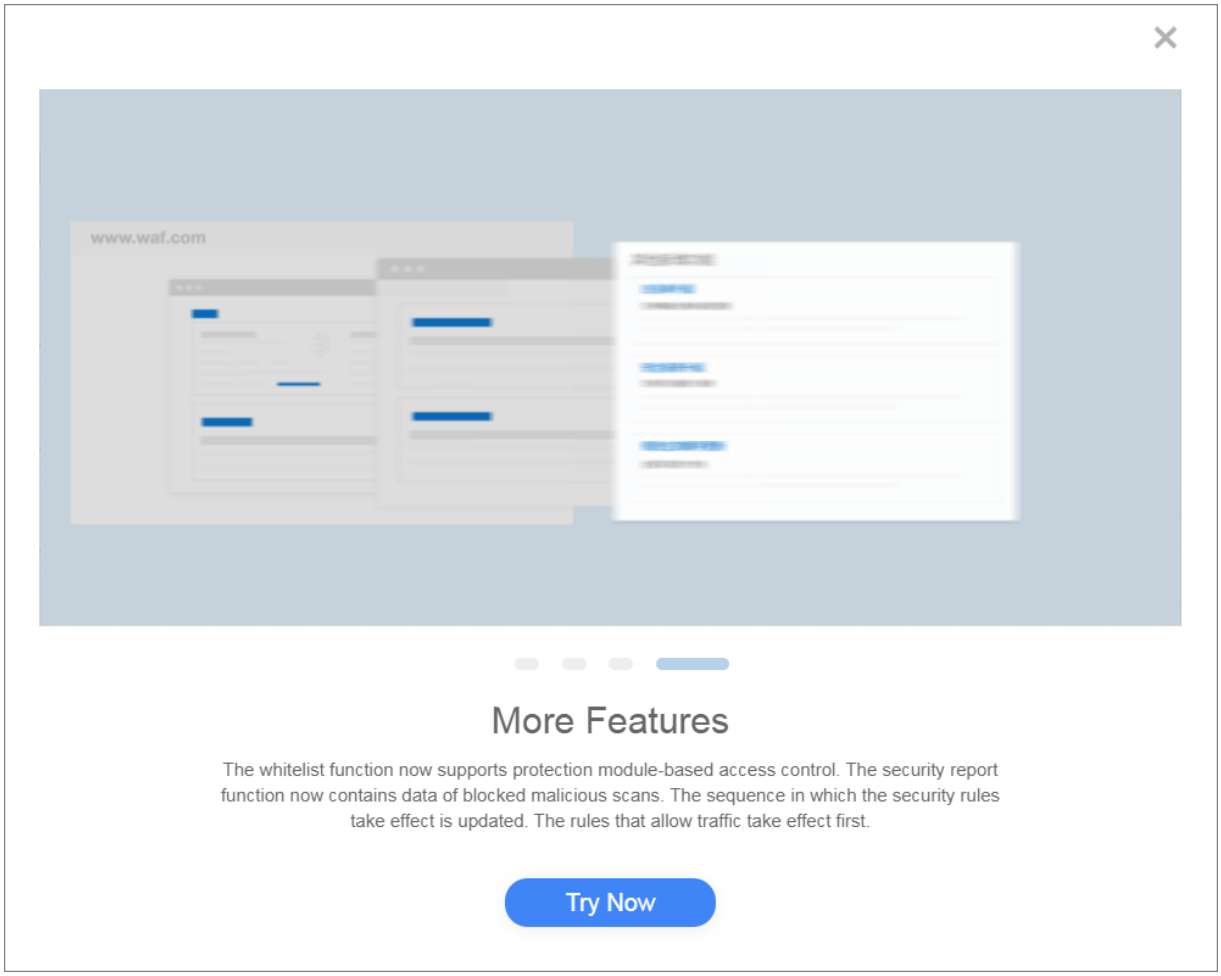
- Convenient IP address blacklist configuration

  You can add IP addresses, CIDR blocks, and the regions to which IP addresses belong to blacklists. This way, you can implement quick access control and block traffic.

You can configure the following items for each protection module: website whitelists, scan reports, and priorities of protection rules. For more information, see Configure RegEx Protection Engine.

Upgrade your protection engine

The protection engine will be upgraded for all users who activated WAF before January 2020. After the engine is upgraded in the backend, you will receive an upgrade notification when you log on to the WAF console. Then, you can click **Try Now** to experience your new protection engine.



3.2. Fastjson zero-day RCE vulnerability detected on July 23, 2019

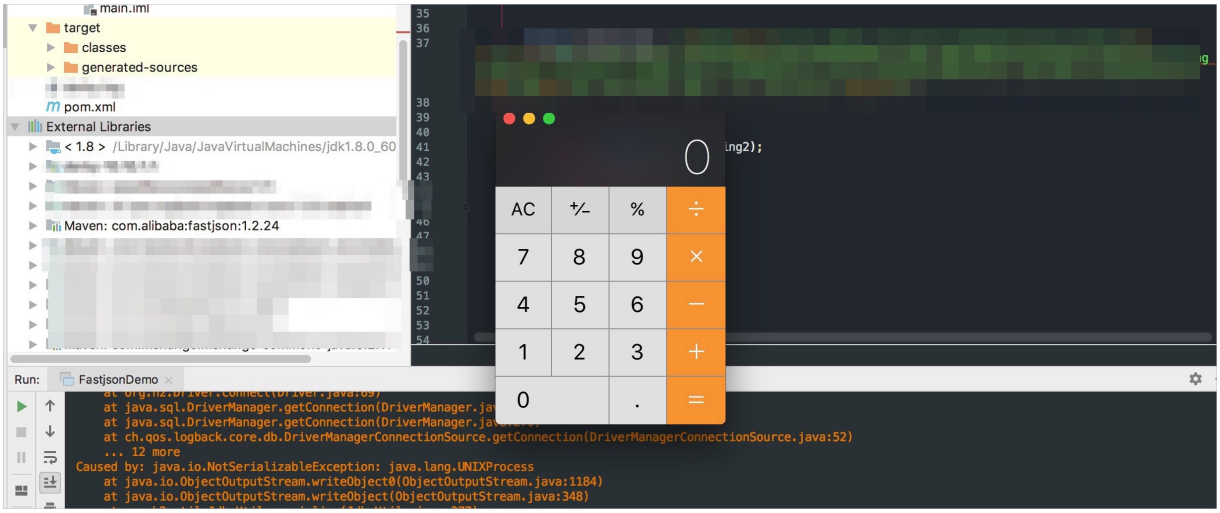
On July 23, 2019, Alibaba Cloud Security emergency response center discovered a zero-day remote code execution (RCE) vulnerability in Fastjson. Attackers can exploit the vulnerability and bypass blacklist policies to execute malicious code.

Vulnerability name

Fastjson zero-day RCE vulnerability

Vulnerability description

Attackers can exploit the zero-day vulnerability to craft a request and bypass Fastjson blacklist policies to execute malicious code. For example, an attacker can craft a request and remotely execute specified commands on a server. In this example, a calculator program is running.



Affected versions

- Fastjson 1.2.24 and earlier
- Fastjson 1.2.41 to 1.2.45

Solution

Upgrade Fastjson to the latest version. We recommend that you upgrade Fastjson to 1.2.58.

> **Note** We recommend that you also upgrade Fastjson outside the affected versions.

Upgrade method

You can update Maven dependency configurations to upgrade Fastjson to 1.2.58.

```
<dependency>
 <groupId>com.alibaba</groupId>
 <artifactId>fastjson</artifactId>
 <version>1.2.58</version>
</dependency>
```

Protection recommendations

By default, WAF protects against the zero-day vulnerability in Fastjson. You only need to enable the protection function.

3.3. Fastjson zero-day RCE vulnerability detected on June 22, 2019

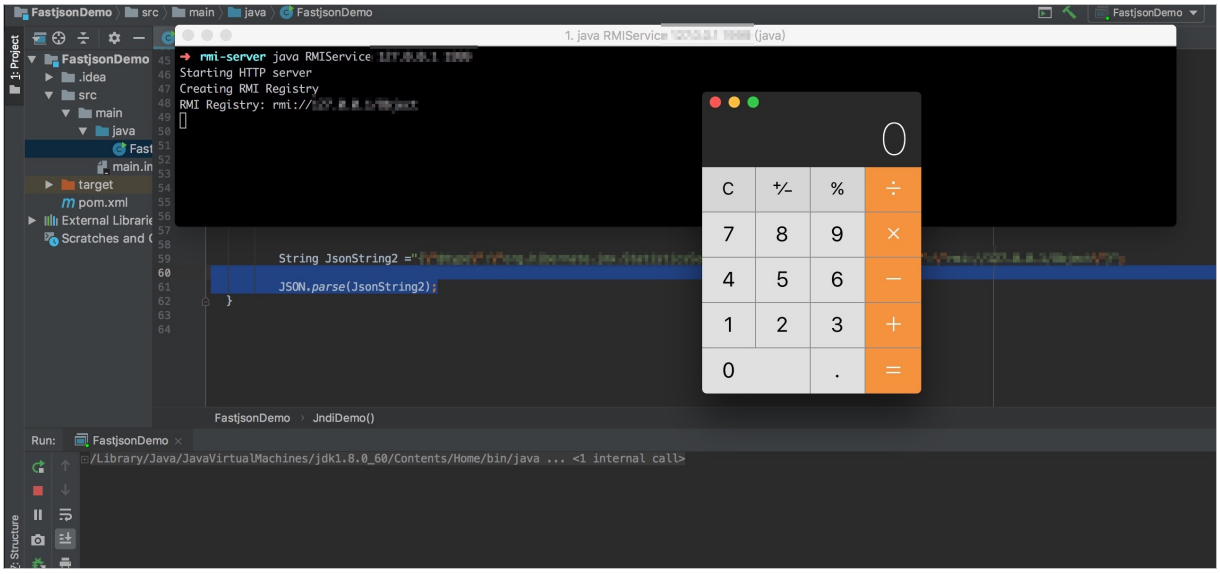
On June 22, 2019, Alibaba Cloud Security emergency response center discovered a zero-day remote code execution (RCE) vulnerability in Fastjson. Attackers can exploit the vulnerability and bypass blacklist policies to execute malicious code.

Vulnerability name

Fastjson zero-day RCE vulnerability

Vulnerability description

Attackers can exploit the zero-day vulnerability to craft a request and bypass Fastjson blacklist policies to execute malicious code. For example, an attacker can craft a request and remotely execute specified commands on a server. In this example, a calculator program is running.



Affected versions

Fastjson versions earlier than 1.2.48

Solution

Upgrade Fastjson to the latest version. We recommend that you upgrade Fastjson to 1.2.58.

> **Note** We recommend that you also upgrade Fastjson outside the affected versions.

Upgrade method

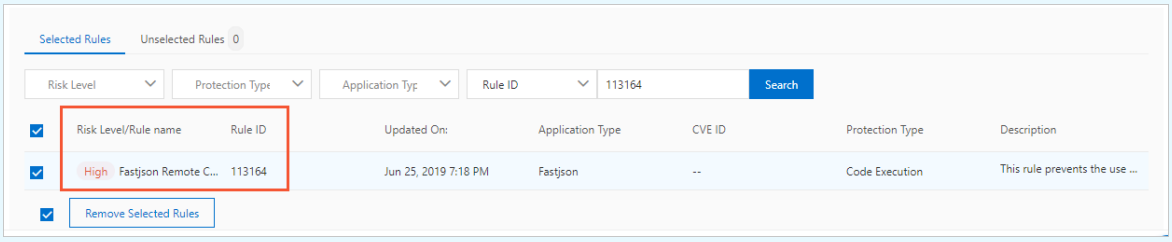
You can update Maven dependency configurations to upgrade Fastjson to 1.2.58.

```
<dependency>
 <groupId>com.alibaba</groupId>
 <artifactId>fastjson</artifactId>
 <version>1.2.58</version>
</dependency>
```

Protection recommendations

By default, WAF protects against the zero-day vulnerability in Fastjson. You only need to enable the protection function.

Note If you use custom protection rules, you must add the following rule to a custom rule group. For more information, see Customize protection rule groups.



3.4. RCE vulnerability in Consul service APIs

On November 27, 2018, Consul released a vulnerability notice on its official blog. The notice stated that a remote code execution (RCE) vulnerability might be caused by Consul with specific configurations, and outlined a solution to fix this vulnerability.

Consul is an open source tool developed by HashiCorp. This tool is used to discover and configure services in distributed systems and provides an end-to-end solution. Consul provides multiple features, such as service registration and discovery, consensus protocol implementation, health checking, key-value store, and multi-data center support. All this makes Consul simple to configure and independent of other tools, such as ZooKeeper.

Consul is written in Go and supports Linux, Windows, and Mac OS X. Therefore, it is portable. Consul is easy to deploy because its installation package contains only one executable file. Consul works well together with lightweight containers such as Docker.

Vulnerability name

RCE vulnerability in HashiCorp Consul service APIs

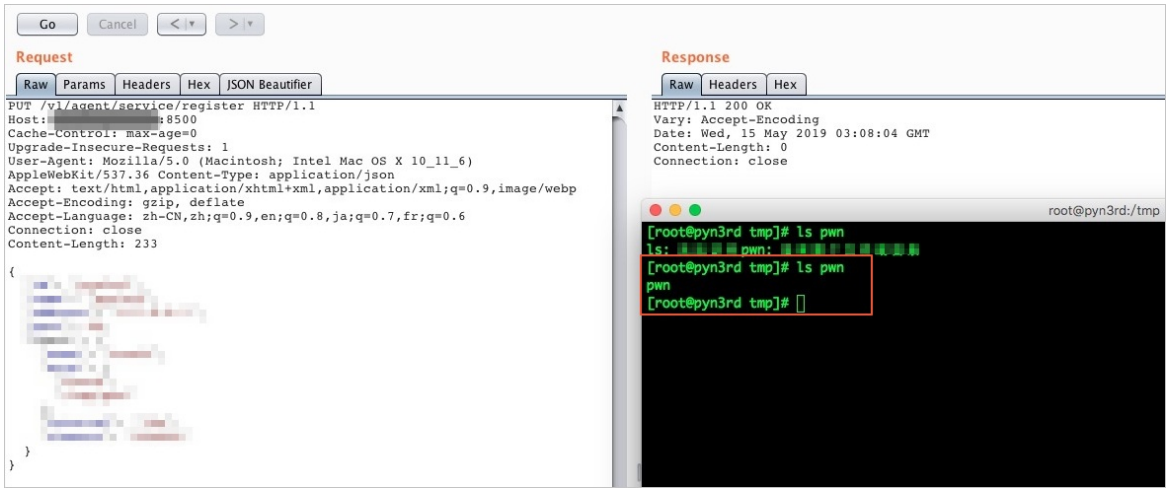
Vulnerability description

Attackers can send crafted HTTP requests and remotely execute commands without authorization on Consul servers that have specific configurations. For more information about the Consul vulnerability, see Protecting Consul from RCE Risk in Specific Configurations.

Reproduce the vulnerability

1. Verify whether your Consul server is exposed to the RCE vulnerability.

2. Craft an HTTP PUT request and remotely execute commands on the Consul server.



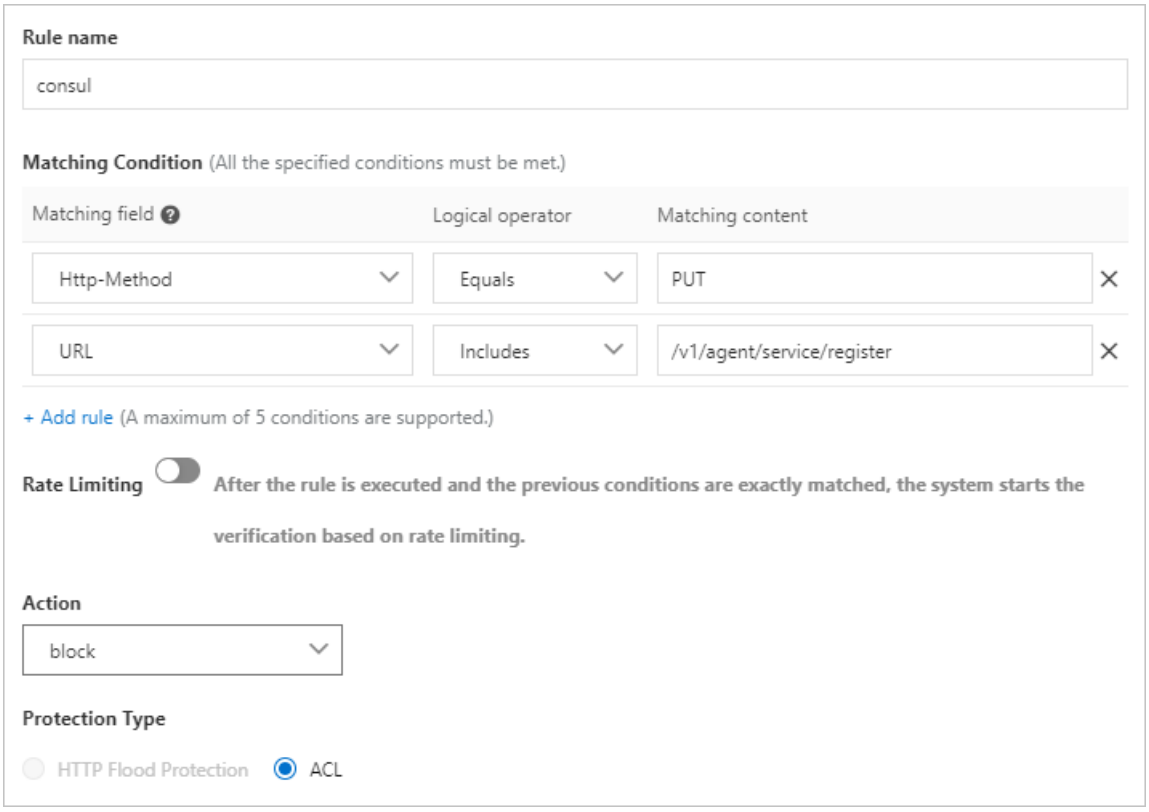
Affected versions

All versions of Consul in which -enable-script-checks is set to true to enable the script check function

Protection recommendations

To protect against this vulnerability, you can use one of the following solutions:

- Disable the script check function on the Consul server.
- If you need to use the script check function of Consul, upgrade Consul to one of the following versions: 0.9.4, 1.0.8, 1.1.1, or 1.2.4. This changes -enable-script-checks to -enable-local-script-checks. These versions of Consul support the -enable-local-script-checks parameter.
- Make sure that you cannot call or access Consul HTTP APIs over the Internet.
- Enable the custom protection policy feature of WAF and configure the protection rule shown in the following figure. This rule blocks requests that use the HTTP PUT method and contain `/v1/agent/service/register` in their URLs. For more information, see Create a custom protection policy.



3.5. Apache Solr deserialization RCE vulnerability (CVE-2019-0192)

On March 7, 2019, Alibaba Cloud Security emergency response center detected a Solr security bulletin issued by Apache. Attackers can call the Config API and modify the jmx.serviceUrl attribute to point to a malicious RMI service, which causes a deserialization remote code execution (RCE) vulnerability in Apache Solr.

CVE ID

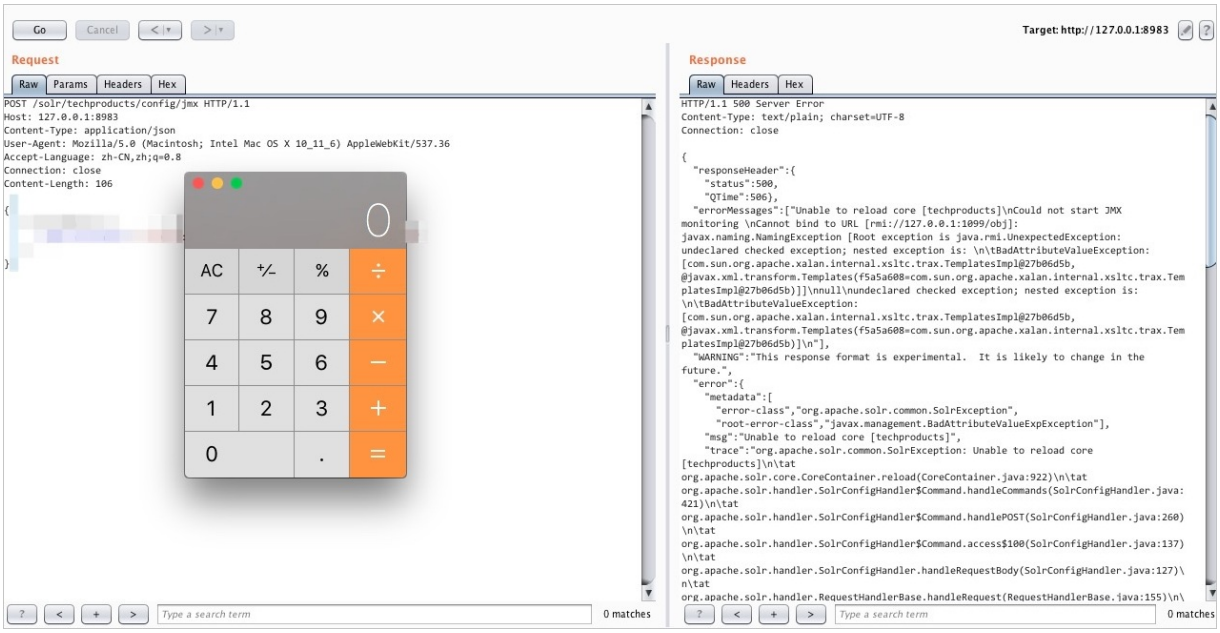
CVE-2019-0192

Vulnerability name

Deserialization RCE vulnerability in Apache Solr

Vulnerability description

The Config API allows to configure the jmx.serviceUrl attribute by using an HTTP POST request. This configuration modifies the Apache Solr JMX server. Attackers can point the request to a malicious RMI server and take advantage of the unsafe deserialization of Solr to trigger RCE.



Affected versions

- Apache Solr 5.00 to 5.5.5
- Apache Solr 6.00 to v6.6.5

Solution

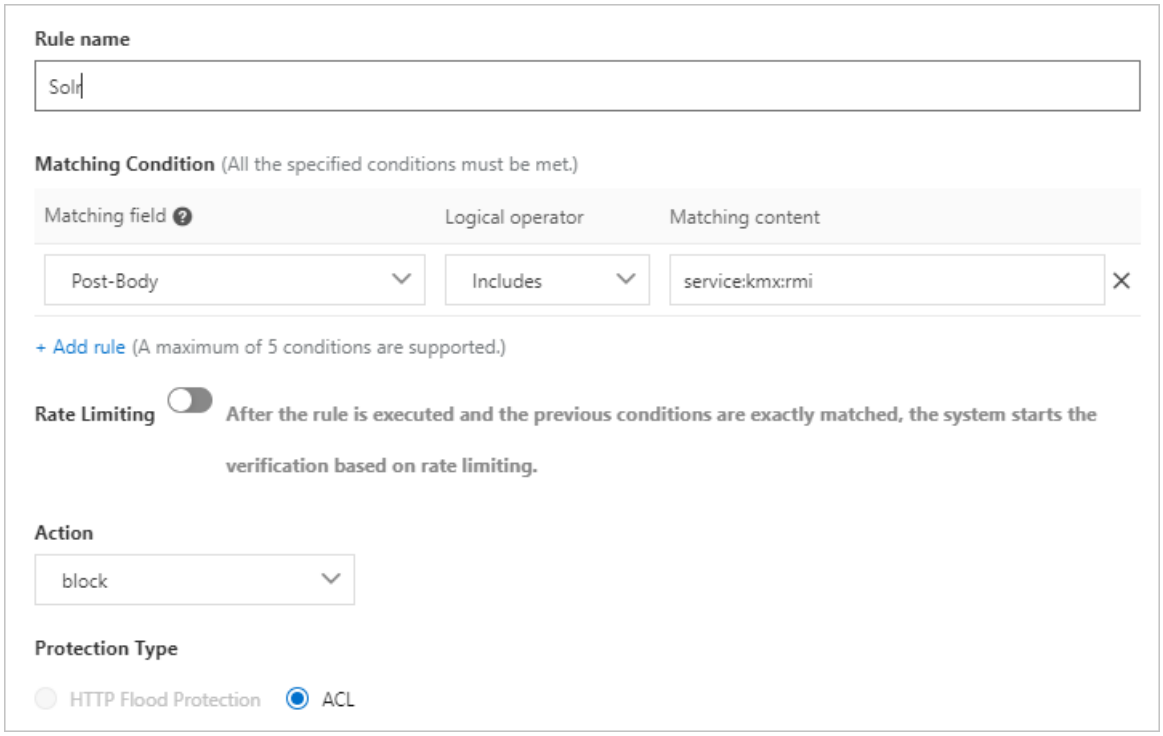
- Upgrade your Apache Solr to 7.0 or later.
- Disable the Config API by configuring `disable.configEdit=true`.
- Ensure that only trusted traffic is allowed to access the Solr server at the network layer.

If you cannot resolve the issue by using the first two solutions, recompile Solr by using the official patch.

Protection recommendations

If you do not want to upgrade Solr to resolve this vulnerability, we recommend that you use the custom protection policy feature provided by WAF to protect your business.

You can use the custom protection policy feature to restrict POST requests that contain specific JSON data, such as service:jmx:rmi. This can also prevent RCE attacks.



3.6. Arbitrary file read vulnerability in Jenkins (CVE-2018-1999002)

On July 18, 2018, Jenkins released its latest security bulletin and announced multiple security vulnerabilities. SECURITY-914 is an arbitrary file read vulnerability reported by Orange.

Attackers can exploit this critical vulnerability to read arbitrary files on Windows servers and, under specific conditions, read files on Linux servers. Attackers can also obtain credential information in Jenkins systems and therefore expose sensitive user information. Some credentials may be user passwords, which enable the attackers to log on to the Jenkins systems and execute commands.

CVE ID

CVE-2018-1999002

Vulnerability name

Arbitrary file read vulnerability in Jenkins

Vulnerability description

An arbitrary file read vulnerability in the Stapler web framework used by Jenkins allows unauthenticated users to send crafted HTTP requests. The requests return the contents of any file on the Jenkins master file system that is accessible by the Jenkins master process.

For more information about this vulnerability, visit Jenkins security advisory.

Affected versions

- Jenkins weekly 2.132 and earlier
- Jenkins LTS 2.121.1 and earlier

Solution

- Upgrade Jenkins weekly to 2.133.
- Upgrade Jenkins LTS to 2.121.2.

Protection recommendations

If you do not want to upgrade Jenkins to fix this vulnerability, we recommend that you use the custom protection policy feature provided by WAF to protect your business.

You can use this feature to create a rule that blocks requests whose header field Accept-Language contains `../`. This prevents attackers from exploiting this vulnerability to read arbitrary files by using directory traversal.

Protective effects

Based on the custom protection policy, WAF blocks the HTTP request that attempts to exploit the vulnerability.

> **Note** For more information about the custom protection policy feature, see Create a custom protection policy.

3.7. DoS vulnerability in the Apache Struts2 REST plug-in (CVE-2018-1327)

Two security experts (Yevgeniy Grushka and Alvaro Munoz) from Hewlett Packard Enterprise (HPE) found a denial of service (DoS) vulnerability in the Apache Struts2 REST plug-in. If you use the XStream library in the Struts REST plug-in, an attacker can construct a malicious XML request to launch a DoS attack.

CVE ID

CVE-2018-1327

Vulnerability name

DoS vulnerability in the Apache Struts2 REST plug-in (S2-056)

Vulnerability description

The S2-056 vulnerability exists in the Apache Struts2 REST plug-in. If you use the XStream library to deserialize a packet in the XML format and the data content is not validated, attackers can launch remote DoS attacks by sending malicious XML data.

If attackers initiate large amounts of attack requests, the CPU resources of the server where your applications reside will be used up rapidly.

For more information about the vulnerability, visit Official vulnerability disclosure.

Affected versions

Struts 2.1.1 to 2.5.14.1

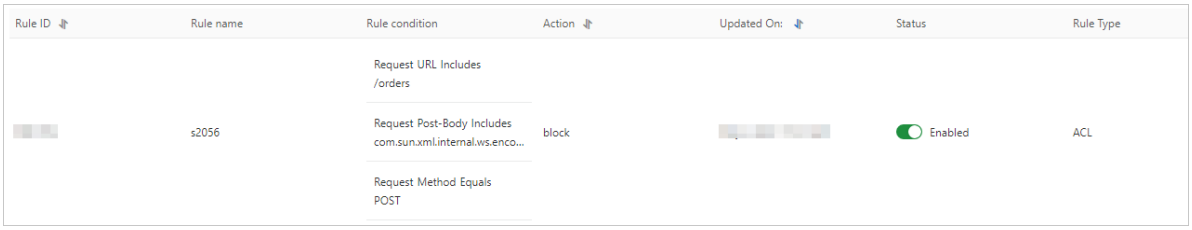
Solution

Upgrade your Apache Struts to 2.5.16.

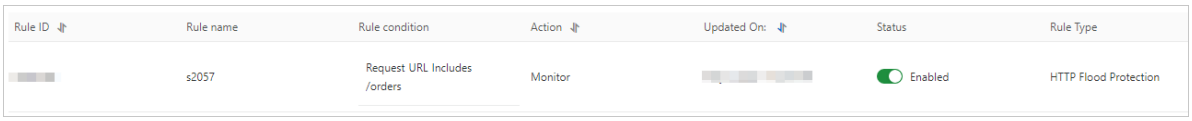
Protection recommendations

If you do not want to upgrade Apache Struts to fix the vulnerability, we recommend that you use the custom protection policy and HTTP flood protection features provided by WAF to protect your business.

- You can use the custom protection policy feature to create a rule. The rule blocks the POST requests that contain specific XML data (`com.sun.xml.internal.ws.encoding.xml.XMLMessage$XmlDataSource`). This prevents the DoS attack requests launched by using this vulnerability. For example, configure the following rule to block attack requests to applications that use Apache Struts whose REST plug-in uses the XStream library.



- You can use the HTTP flood protection feature to limit the frequency of requests from an IP address, for example, requests to applications that use Apache Struts whose REST plug-in uses the XStream library. For example, configure the following rule to make sure that the request frequency to a specified page does not exceed 100 times every 5 seconds.



For more information about the custom protection policy and HTTP flood protection features, see Create a custom protection policy.

3.8. WordPress DoS vulnerability (CVE-2018-6389)

On February 5, 2018, a security researcher disclosed a denial-of-service (DoS) vulnerability in WordPress. The vulnerability affects all versions of WordPress from 3.x to 4.x. Attackers can trigger a DoS attack and consume server resources by using WordPress to load multiple JavaScript files in a single request.

WAF is not affected by this vulnerability. However, if your website business uses WordPress, we recommend that you configure appropriate protection rules.

Vulnerability description

This vulnerability is found in the *load-scripts.php* file. *load-scripts.php* is the built-in script of WordPress, a Content Management System (CMS) system. The *load-scripts.php* file selectively calls required JavaScript files by passing their `names` into the `load` parameter. The `names` are separated with commas (,).

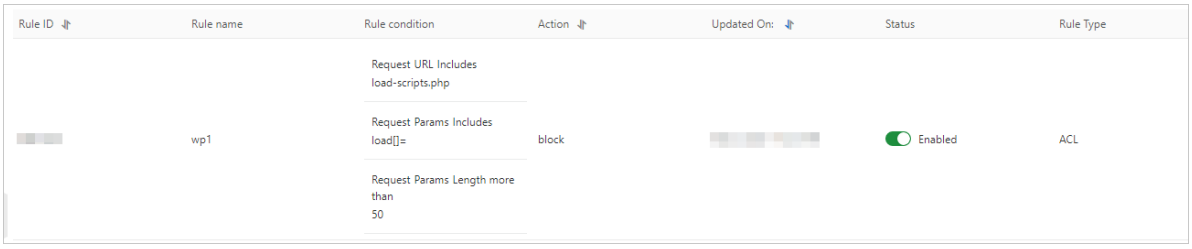
For example, in the request of `https://example.com/wp-admin/load-scripts.php?c=1&load[]=jquery-ui-core,editor&ver=4.9.1`, JavaScript files *jquery-ui-core* and *editor* are loaded.

All 181 JavaScript files defined in the *script-loader.php* file can be loaded in a single request. An attacker can send a large number of requests without authorization, and this results in increased server load and triggers DoS attacks.

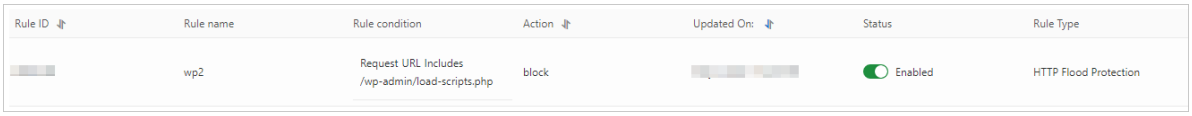
Protection recommendations

We recommend that you use the custom protection policy and HTTP flood protection features provided by WAF to protect your WordPress website.

- You can use the custom protection policy feature to restrict the number of parameters passed by *load-scripts.php*. For example, you can add the following rule to restrict the length of the parameter passed by *load-scripts.php* to up to 50 characters.



- You can also use the custom HTTP flood protection feature to restrict the frequency at which IP addresses can send requests to the *load-scripts.php* file. For example, you can add the following rule to restrict the frequency at which an IP address sends requests to the *load-scripts.php* file to up to 100 times per 5 seconds.



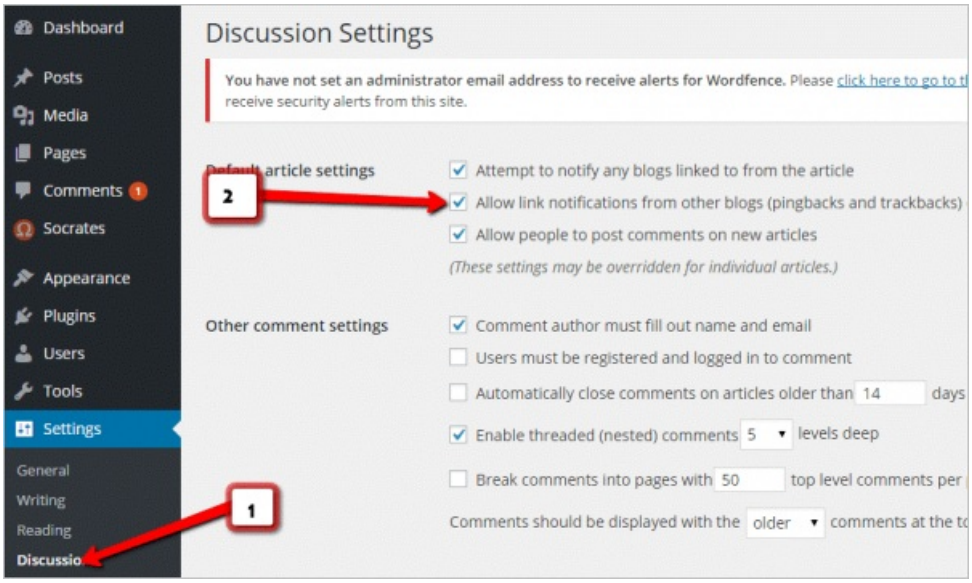
For more information about the custom protection policy and custom HTTP flood protection features, see Create a custom protection policy.

3.9. WordPress XML-RPC pingback attacks

This topic describes how to prevent WordPress pingback attacks by using WAF.

Introduction to WordPress pingback attacks

WordPress is a blog platform that is written in PHP, and a pingback is a plug-in of WordPress. Attackers can use the pingback to initiate WordPress pingback attacks against a website.



When WordPress pingback attacks occur, a large number of requests are displayed on the server log, and the User-Agent fields of these requests contain WordPress and pingback.

UA
WordPress/4.2.10; http://[redacted].vn; verifying pingback from 191.[redacted].54
WordPress/4.0.1; http://146.[redacted].90; verifying pingback from 191.[redacted].54
WordPress/4.6.1; https://www.[redacted].com; verifying pingback from 191.[redacted].54
WordPress/4.5.3; http://[redacted].edu; verifying pingback from 191.[redacted].54
WordPress/3.5.1; http://[redacted].com
WordPress/4.2.4; http://[redacted].tw; verifying pingback from 191.[redacted].54
WordPress/4.6.1; http://[redacted].com; verifying pingback from 191[redacted].54
WordPress/4.1.6; http://www.[redacted].nl; verifying pingback from 191.[redacted].54

As a variant of HTTP flood attacks, WordPress pingback attacks typically cause the following problems: slow web page loading, high CPU utilization, and no response from servers.

Use WAF to defend against WordPress pingback attacks

1. Log on to the WAF console.
2. In the left-side navigation pane, choose **Protection Settings > Website Protection**.
3. Click the **Access Control/Throttling** tab.
4. In the **Custom Protection Policy** section, click **Settings**.
5. Click **Custom Protection Policy** and add the following two rules.
   - Block access requests that contain pingback in User-Agent.
     - **Rule name**: Enter wp1.
     - **Matching field**: Select User-Agent.

- **Logical operator**: Select Includes.
- **Matching content**: Enter pingback.
- **Action**: Select block.

- Block access requests that contain WordPress in User-Agent.
  - **Rule name**: Enter wp2.
  - **Matching field**: Select User-Agent.
  - **Logical operator**: Select Includes.
  - **Matching content**: Enter WordPress.
  - **Action**: Select block.

> **Note** You must add the two rules separately.