

F5[®] BIG-IQ[®] Centralized Management: Fraud Protection Service

Version 6.0



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Configuring How BIG-IQ FPS Processes Alerts

Before you start managing alerts

Before you can start using Fraud Protection Service (FPS) to manage alerts, you need to deploy a data collection device (DCD) cluster. This cluster includes the BIG-IQ[®] Centralized Management devices and Data Collection devices needed to manage and store the alert data generated from your BIG-IP[®] devices. Additionally, you need to configure your BIG-IP devices to send their FPS alerts to the DCD cluster. These tasks are detailed in the document *Planning and Implementing an F5[®] BIG-IQ[®] Centralized Management Deployment*.

Configure a web service

Before you can perform this task, you must be logged in as Admin and, if you plan to use a proxy for WebService traffic, you must have configured a proxy server that your data collection device cluster can access.

Important: *To use a proxy, you must configure a proxy on each device (data collection devices and BIG-IQ[®] devices) in the cluster. Additionally, the proxy names you specify for each node in the cluster must match exactly.*

You can add or remove a WebService configuration. You need a web service to download new alert transform rules from the SOC. You also need a web service so you can forward received alerts to the Security Operations Center (SOC) so that the SOC can inspect them.

1. At the top of the screen, click **Monitoring**.
 2. On the left, click **EVENTS > Fraud Protection Service > Configuration**.
 3. Click **WebService Configuration**, and then select the web service you want to configure.
 - To configure an existing service, click the name of the service.
 - To configure a new service click **Create**.
-

Note: *If you create a web service with a particular set of SOC credentials, and then use that web service in forwarding rules or scheduled alert rule downloads and later delete and recreate it with a different name, then attempts to restore that snapshot will fail. To successfully restore snapshots, you must recreate the web service with the same name.*

Important: *When you make changes to your web service configuration, allow up to 5 minutes for these changes to propagate to all of your managed FPS devices before you look for the impact of the configuration changes.*

4. For the **WebService Name**, type a name for the web service that you would like to forward alerts to. The Security Operations Center (SOC) is the only option.
5. For **Description**, type a description of the account that you would like to send alerts to.
6. For **WebService URI**, use the default value supplied by the BIG-IQ.
7. For **Remote Account ID**, type the remote account ID provided by the SOC.
8. For **SOC User**, type the user name provided by the SOC.
9. For **SOC Password**, type the password provided by the SOC.

10. If you want the alert traffic for this web service to route through a proxy, select **Use Proxy**, and then select the proxy you want to use.
11. For **Test SOC Connection**, click the **Test** button to make sure the alert goes through.

***Important:** A successful test confirms only that the alert was successfully sent (or, if you specified a proxy, that the alert reached the proxy server). You should confirm with the recipient that the test message is received.*

12. Click **Save & Close**

You have configured a web service that can download alert rules from the SOC and forward alerts to the SOC.

Create an alert transform rule

Before you can perform this task, you must be logged in as Admin.

An alert transform rule is used to modify alerts matching a set of criteria. It might take a few minutes after alert transform rules are created before they take effect.

When you create an alert transform rule, you create a set of criteria that tells your system what to do with incoming alerts. An example of this would be if the system finds a particular string in the alert query when there is generic malware present. If the alert matches all of the criteria that you set up, then the system changes the alert severity, details, recommendation, and status. You can use alert transform rules to ignore a type of alert that is harmless, or you can use alert transform rules to give an alert a higher severity and change the alert status to Monitor.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service > Configuration**.
3. Click **Alert Transform Rules**.
4. To add an alert transform rule, click the **Create** button.
The New Alert Transform Rule screen opens.
5. In **Transform Rule Name**, type a name for the rule.
6. In **Status**, select the **Enabled** check box if you want the transform rule to be enabled immediately after creating it.
If the **Enabled** check box is not selected, the transform rule is inactive until this setting is changed.

***Note:** Enabling a rule does not apply it on alerts. To apply the rule, you must enable it and then click **Apply**.*

7. In **Description**, type a description of the alert rule.
8. In **Find**, type the text that you want the BIG-IQ® to search for in the alert data.
The BIG-IQ searches for this text in the areas you specify in the **Where** field, and the alert transform rule can be applied on alerts where this text is found.
9. For the **Where** setting, select which parts of the alert should be searched.
The BIG-IQ searches for the text you specify in the **Find** field in the parts of the alert you specify here.
10. For the **When** setting, select which types of alerts should be searched.
11. For the **Accounts** setting, retain the default, **All Accounts**, or clear the check box and specify on which accounts the rule should be applied.
12. For **Alert Severity**, select a severity number for the rule.
By default, most rules are given a severity number of 50.
13. In **Alert Details**, type additional information to display in the rule.

14. In **Alert Recommendation**, type a recommendation to display in the rule.
15. For **Alert Status**, select a status that will be assigned to matching alerts.
16. Select the check box next to **Use regex to obfuscate the user name from selected fields** if you want the rule to hide the user name in selected alert fields.
If you select this check box, the properties **User Regular Expression** and **Match User Regular Expression on** appear.
 - a) For **User Regular Expression**, type a regular expression for identifying a user name in an alert.
If the BIG-IQ finds this regular expression, the actual user name is replaced with `username`. For example, if you specify the regex: `username=([a-zA-Z]*)` and the alert URL is `https://myusername.com?username=johndoe`, after the regex is matched and applied, the alert URL renders it as `https://djohndoe.com?username=USERNAME`.
 - b) For **Match User Regular Expression on**, select the parts of the alert that you want the BIG-IQ to search to determine if they contain the regular expression.
17. Click **Save & Close**.

Creating a schedule to download alert transform rules from the SOC

Before you can create a new download schedule, you must configure a web service.

You can set up a schedule to download alert transform rules from the Security Operations Center (SOC). You can start downloads immediately, or repeat them on a daily, weekly, or monthly basis. You can only create one repeating schedule. However, you can create a new schedule that will run immediately.

Note: Transform rules are downloaded only for the account configured in the SOC WebService.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service > Configuration**, and then click **Transform Rule Import Schedule**.
3. Click the **Create** button.
The New FPS Download Schedule screen opens.
4. Type a **Name** and **Description** for the schedule.
5. From the **WebService** list, select the service you want to use.
6. For **Import Alert Rules Frequency**, select the frequency for downloading the transform rules .
7. For **Start Date**, specify the date and time that you want the first download to start.
8. For **End Date**, either select **No End Date**, or specify the date and time that you want downloads to stop.
9. Select **Should Apply** if you want the downloaded alert transform rules to be immediately applied on alerts in the BIG-IQ.
10. Select **Should Forward** if you want to forward notifications about alerts that were modified by the transform rule to a third party, according to the forwarding rules configured in the BIG-IQ.
11. Click **Save & Close**.
The FPS Download Schedules screen opens and the schedule that you created is listed.

After a successful download occurs, you can check the download results in the FPS Download Schedules screen, including the following information:

- **Total Rules:** The total number of transform rules that were received in the download.
- **Total Rules Ignored:** The total number of rules that were ignored for either of the following reasons:
 1. The rule is not associated with the account that performed the download.
 2. Validation of the rule failed.
- **Total Rules Updated:** The total number of rules that were received in a previous download and were updated in the latest download.

Importing a CSV file with alert rules

Importing alert transform rules from a CSV file is helpful if you do not want to schedule a download of the alert transform rules from the Security Operations Center (SOC) over the Internet.

You can save alert rules (called *signatures*) from the SOC into a CSV file, then use the steps in this task to import the CSV file into FPS.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service > Configuration**, and then click **Alert Transform Rules**.
3. Click the **Import** button.
A popup screen opens.
4. Click **Choose File**, and then choose a CSV file to import.
5. Select a target account.
6. Click **Import**.
The imported alert transform rule is applied to the types of alerts the account is configured to receive.

Modifying alert forwarding rules

Before you can perform this task, you must be logged in as Admin, and if you plan to use a proxy to forward custom alerts, you must have configured a proxy server that your Data Collection Device cluster can access.

You can add, clone, or remove alert forwarding rules. You can forward alerts to a web service, an email address, a sys-log, or to a custom Webservice location.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service > Configuration**, and then click **Alert Forwarding Rules**.
3. On the Alert Forwarding Rules screen, select an action as appropriate:
 - To view details for an alert forwarding rule, click the rule name.
 - To create an alert forwarding rule, click **Create**.
 - To clone an alert forwarding rule, select the check box by the rule and click **Clone**.
 - To delete an alert forwarding rule, select the check box by the rule and click **Delete**.
 - To enable an alert forwarding rule, select the check box by the rule and click **Enable**.
 - To disable an alert forwarding rule, select the check box by the rule and click **Disable**.
4. On the New Alert Forwarding Rules screen, fill in the settings as needed:
 - a) For **Forwarding Rule Name**, type a name for the alert rule.
 - b) For **Description**, type a description of the alert rule.
 - c) For **Status**, select the **Enabled** check box to forward alerts.
5. On the left, click **Alerts Matching**, and fill in the settings as needed:
 - a) For **Alert Severity Equal OR Greater Than**, select the alert severity level from the list.
 - b) For **Alert Categories**, move an alert category from the **Available** list to the **Selected** list.
 - c) For **Alert Status**, select a status for the alert, and move it from the **Available** list to the **Selected** list.
 - d) To forward only alerts that include a user name, for **Username**, select **Must be Present**.
Enabling this setting significantly reduces the volume of alerts that FPS forwards.

- e) For **Accounts**, use the default **All Accounts**, or select a specific fraud protection account and move it to the **Selected** column. The alert forwarding rule will then only act on the alerts that the account is set to receive.
6. On the left, click **Notification Targets** and select one or more means for forwarding alerts.
- a) Enable **WebService** to send alert notifications to the F5 Security Operations Center (SOC) dashboard through the cloud WebService.
For additional details on how to use the fields in the WebService area, refer to WebService method forwarding detail.
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- Note: You must configure WebService Config in Fraud Protection Service before you can select this option.*
-
- b) Enable **Email** to send notifications to an email address.
For additional details on how to use the fields in the Email area, refer to Email forwarding method detail.
-
- Note: You must configure the DNS and SMTP server on your data collection devices to use this option.*
-
- c) Enable **Syslog** to send alert notifications to a Syslog server.
For additional details on how to use the fields in the Syslog area, refer to Syslog forwarding method detail.
- d) Enable **Custom** to send custom alert notifications to a third party web service.
For additional details on the Custom area, and how to use the fields in it, refer to Custom forwarding method detail.
7. Click **Save & Close**.

WebService forwarding method detail

When you use the WebService forwarding method, you use the web service tab to define how the alert is sent.

1. For **WebService**, select the web service to which you want the alert to be sent.
2. Specify the variables that you want to have included in the alert by using the arrow button to move them from the **Available** list to the **Selected** list.
For a list of forwarding method variables that you can use, refer to *Supported Forwarding Method variables*.
3. Click **Save & Close**.

Email forwarding method detail

When you use the Email forwarding method, you use the Email tab to define how the alert is sent.

1. For **Sender Name**, the screen specifies the name of the email sender (F5 Fraud Protection Service).
2. For **Sender Email Address**, type the email address from which you want the alert notifications forwarded.
3. For **Email Recipient(s)**, type the email address to which you want the alert notifications forwarded.
4. To run a test of the email addresses you specified above, click **Test**.

***Important:** A successful test confirms only that the alert was successfully sent. You should confirm with the recipient that the test message is received.*

5. For **Email Subject**, you can either use the default parameters to specify the alert email subject, or create your own using the supported parameters.
For a list of forwarding method variables that you can use, refer to *Supported Forwarding Method variables*.
6. For **Mail Template**, you can add or subtract from the default list of parameters.
Parameters listed here are included in the forwarded alert.
7. When you finish configuring the alert sending method, click **Save & Close**.

Syslog forwarding method detail

When you use the Syslog forwarding method, you use the Syslog tab to define how the alert is sent.

1. For **Syslog Facility**, type the facility number to which you want the alert notifications to be forwarded.
2. For **Syslog Severity**, select the severity level that you want to be appended to all forwarded alert notifications.
The severity level you select here is added to all forwarded alerts. This level is unrelated to the severity level number assigned independently to each alert.
3. For **Syslog Server**, type the IP address of the server to which you want the alerts to be forwarded.
4. For **Syslog Port**, type the port number to which you want the alerts to be forwarded.
5. For **Syslog Protocol**, select the protocol that the target syslog server uses to accept forwarded alerts.
6. To run a test of the specified settings, click **Test**.

Important: *A successful test confirms only that the alert was successfully sent. You should confirm with the recipient that the test message is received.*

7. For **Syslog Template**, you can add or subtract from the default list of parameters.
Parameters listed here are included in the forwarded alert. For a list of forwarding method variables that you can use, refer to *Supported Forwarding Method variables*.
8. When you finish configuring the alert sending method, click **Save & Close**.

Custom forwarding method detail

Before you can perform this task, if you plan to use a proxy to forward custom alerts, you must have configured a proxy server that your data collection device cluster can access.

When you are configuring an alert forwarding rule and select the Custom method, you use the Custom tab to define the details of how the alert is sent. This alert type specifies a number of parameters that the alert receiving entity has specified as requirements of the service they use to listen for forwarded alerts. You specify the values for these parameters so that the forwarded alerts satisfy the requirements of the alert receiving entity.

1. If the alert recipient uses a service that requires an alert token, select the check box for **Uses Token**.
The screen displays additional settings.
 - a) For **WS Token Timeout**, type the number of seconds that the alert recipient specifies for forwarded alert tokens.
 - b) For **WS Token URL**, type the IP address that the alert recipient specifies for forwarded alert tokens.
 - c) For **WS Token Method**, select the REST API method that the alert recipient specifies for forwarded alert tokens.
 - d) For **WS Token Headers**, type the required request header information specified by the alert recipient for forwarded alert token headers.

- e) For **WS Token Request**, type the required request body information specified by the alert recipient for forwarded alert tokens.
- f) For **WS Token Response**, type the required request response information specified by the alert recipient for forwarded alert responses.
2. If you want the alert traffic for this custom rule to route through a proxy, select **Use Proxy**, and then select the proxy you want to use.
3. For **WS Alert URL**, type the IP address specified by the alert recipient for forwarded alert responses.
4. For **WS Alert Method**, select the REST API method that the alert recipient specifies for forwarded alerts.
5. To run a test of the specified settings, click **Test**.

Important: A successful test confirms only that the alert was successfully sent (or, if you specified a proxy, that the alert reached the proxy server). You should confirm with the recipient that the test message is received.

6. For **WS Alert Headers**, type the required alert header information specified by the alert recipient for forwarded alert headers.
7. For **WS Alert Request**, type in the parameters that you want to be included in the forwarded alerts. Parameters listed here are included in the forwarded alert. For a list of forwarding method variables that you can use, refer to *Supported Forwarding Method variables*.
8. When you finish configuring the alert sending method, click **Save & Close**.

Supported forwarding method variables

There are a number of forwarding method variables that you can use when you create an alert rule.

Variable Name	Alert Field
<i>Account ID</i>	{accountid}
<i>Account Name</i>	{account}
<i>Alert Date (dd.mm.yyyy hh:mm)</i>	{date}
<i>Alert Date (yyyy-mm-dd hh:mm:ss)</i>	{datefull}
<i>Alert Date (Unix Timestamp)</i>	{unixdate}
<i>Alert Domain</i>	{domain}
<i>Alert Name</i>	{name}
<i>Alert Severity</i>	{severity}
<i>Alert Query</i>	{query}
<i>Alert Recommendation</i>	{recommendation}
<i>Alert Status (Numeric)</i>	{statusid}
<i>Alert Status (Textual)</i>	{status}
<i>Alert Type</i>	{type}
<i>Alert URL</i>	{url}
<i>Alert GUID</i>	{guid}
<i>Alert Referer</i>	{referer}
<i>Alert Details</i>	{details}
<i>Application Cookies</i>	{session_data}

Variable Name	Alert Field
<i>Authentication Token (For CustomWS Notifications)</i>	{token}
<i>Client Host Name</i>	{hostname}
<i>Client IP</i>	{ip}
<i>Client Language</i>	{language}
<i>Client Proxy Host Name</i>	{proxyname}
<i>Client Proxy IP</i>	{proxy}
<i>Client Username</i>	{user}
<i>Client User Agent</i>	{agent}
<i>Client Country</i>	{geoip_country}
<i>Client City</i>	{geoip_city}
<i>Client Device ID</i>	{device_id}
<i>Client Device Parameters</i>	{device_params}
<i>Full Alert HTML Data</i>	{ht_data}
<i>MD5 of Full Alert HTML</i>	{ht}
<i>MD5 of Minimal Alert HTML</i>	{min}
<i>Minimal Alert HTML Data</i>	{min_data}

Add a fraud protection account

You create Fraud Protection accounts in order to receive alerts related to alert identifiers that have been configured on the BIG-IP® system. You can then assign BIG-IQ® users to limit their view of alerts and rules.

Accounts are used to filter alerts, and to transform rules and forwarding rules based on the alert ID configured on the BIG-IP system. Each FPS account has an account ID, and all alerts have an account ID field. You can view only the alerts whose account ID field matches an FPS account ID to which your user login has been assigned access.

The account name you give is displayed in place of the alert ID. If you configure an account, set the default view for each user that you assign to the account. Alert transform rules and forwarding rules that have an account are applied to alerts with the matching alert ID. If no accounts are assigned, then all alerts are considered.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service > Configuration**, and then click **WebService Configuration**.
3. Click **Create**.
The New FPS WebService Configuration screen opens.
4. Fill in as appropriate:

Option	Description
WebService Name	Type a name for the account that you would like to send alerts to (for example, MortgageDept).
Description	Type a description of the account that you would like to send alerts to.

Option	Description
WebService URI	This value is always filled in by default. The only reason to change this is if you want to forward to another legacy dashboard.
Remote Account ID	Type the remote account ID provided to you by the SOC.
SOC User	Type the user name provided to you by the SOC By default, the administrator is selected to look at the account. <i>Note: To create a user, go to System Management > User Management > Users and click Add. Be sure to give the user a user role of <i>Fraud Protection Manager</i> or <i>Fraud Protection View</i></i>
SOC Password	Type the password provided to you by the SOC.
Proxy	To route the alert traffic for this web service through a proxy, select Use Proxy , and then select the proxy you want to use.
Test SOC Connection	To test the SOC connection, click the Test button to confirm that your settings are correct. <i>Important: A successful test confirms only that a test alert was successfully sent (or, if you specified a proxy, that the alert reached the proxy server). You should confirm with the recipient that the test message is received.</i>

5. Click Save & Close.

You now have a fraud protection account that can manage the alerts that you specify.

Managing BIG-IQ Fraud Protection Service

Fraud Protection Service overview

BIG-IQ[®] Fraud Protection Service (FPS) sends alerts to users whenever they are victims of malware or phishing attacks. BIG-IQ filters all alerts into different types and displays them for you to monitor. FPS has the ability to create rules to modify alerts, rules for forwarding alerts, or download rules from the Security Operations Center (SOC). Types of alerts include:

Uninspected Alerts

This list contains all alert types that have a status of new.

Monitored Alerts

This list contains all monitored alert types.

Note: If you have configured fraud protection accounts, then you can view only the alerts that have been specified for your account to view.

Phishing Alerts

Phishing alerts include phishing user, copied pages, and user defined phishing. These alerts are created when a phishing victim enters user credentials onto a phishing web site, or when a phishing site has been detected by JavaScript. The user name that appears in the alert is the user name that is entered into the phishing site.

Malware Alerts

Malware alerts are separated into generic malware, targeted malware, external scripts, page modification, and user defined malware. The Malware Detection component thus enables the organization to take the necessary steps to mitigate the risks of the attack in real time. This component helps the organization to keep track of its affected users and reveal malicious money transaction attempts.

Suspicious Transactions

Suspicious Transactions include browser automation, remote access tools, transaction modification, and user defined. Suspicious transactions prevent automatic requests to the application's server by confirming that the request was made by a human and not issued automatically. Automatic requests can be issued by a Trojan horse attack injecting a malicious JavaScript code to the user's browser in order to perform an automatic money transfer to the attacker's account, or by random bots attempting to automatically scrape data from the application automation.

Suspicious Logins

Suspicious logins include stolen credentials and user inspection. These alerts provide protection against Trojan horse attacks, providing an encryption for the information at the application layer on the client side. This ensures that the information that is exposed to the Trojan horse attack will be encrypted. The encryption is conducted on the client side, using a public key generated by the web server and provided uniquely per session. When the encrypted information is received by the web server, it is decrypted using a private key that is kept on the server side.

Mobile

Mobile alerts integrate with the applications of financial service providers, improving protection against the aforementioned threats and provides alerts received on possible attacks. Mobile alerts neutralizes local threats found on customers' mobile devices, without altering the user experience.

These alerts are created when the system detects an infected mobile device. Alert types that are included in this category are Mobile Malware, Mobile Man-in-the-middle (MITM), Mobile Security, and User Defined. Prevents phishing, Trojan horse attacks, and pharming attacks on mobile devices in real time, through detection, prevention, and application-level encryption.

Validation Errors

Validation error alerts are created when the expected cookie is missing or corrupted. Validation errors include transaction errors, encryption errors, missing components, and mobile errors.

Unfiltered Alerts

Unfiltered alerts are unfiltered views of all alerts except those that have the status of Ignore.

Saved Filters

Saved filters is a list of custom filters that you create and save. These are unique to each user. Saved filters are helpful if you would like to create your own view of alerts. If you are trying to track down a specific type of attack, you can save a unique filter to repeatedly check on a specific type of alert. The BIG-IQ® Fraud Protection Service provides a rich set of querying features which allow you to quickly and efficiently locate alerts that you are interested in.

FPS Alerts overview

There are a number of things you can do to specify the response to different kinds of alert types.

Each alert type has its own user interface, but the controls used to edit the rules that govern the response to these alerts are very similar.

Most alert types are organized into groups. On any list screen, you can click the little black triangle to expand the list.

- To access the Filter Alerts screen, click the **Filter** button at the top left of the screen. On the Filter Alerts screen you can view the existing query that defines the current alert rule. You can specify additional detail to further refine the query or create a new custom query.
- To refresh the list of alerts on the screen, click **Refresh**.
- To create a rule based on an alert, select the check box of the alert you want to use as the basis for the rule, and click **Create Rule**.
- To filter the list of alerts so that only alerts generated during one session are displayed, select the check box of the alert you are interested in, and click **Filter Related**.
- To export one or more alerts files to a CSV file that you can edit or inspect, click **More**, and then select **Export**.
- To change the status for an alert, select the check box for that alert, click **More**, and then select **Change Status**.

Note: If all the check boxes are selected in a list, you can choose to either change the status for all of the alerts that are in view, or change the status for all of the alerts that match the query.

- To remove an alert, select the check box for that alert, click **More**, and then select **Delete**.

Note: If all the check boxes are selected in a list, you can choose to either remove all of the alerts that are in view, or remove all of the alerts that match the query.

When you select a single alert, two changes take place:

- A **Filter Related** button becomes active. Click this button to view only alerts that have the same session global unique identifier (GUID) as the selected alert.
- A preview pane opens to show you details about the selected alert.

To use the Filter field in the right corner:

1. From the **Filter** control, select the type of match (**Contains**, or **Exact**) that you want to use.
2. In the **Filter** field, type the filter criteria you want to use, and press Enter.
3. A **Filtered by** field displays the alert criteria you applied, and the screen displays only alerts that match that criteria.
4. To see the rest of the alerts again, click the **X** to clear your filtered by alert criteria.

To display additional information about a specific alert, select the check box that corresponds to it. A preview pane opens.

When you select a single alert, a preview pane opens to show you details about the selected alert. The tabs that display depend on what data is available for the selected alert.

Details	<p>This tab displays details about the URL that triggered the alert.</p> <ul style="list-style-type: none"> • Alert URL: The URL of the site that was in use when the alert was sent. • Alert Status: The current status of the alert. • Alert Severity: The severity of the alert. By default, new alerts have a 50% severity, unless the alert matches an existing rule. • Referrer: The URL of the site that was visited just before the Alert URL was visited. • User Agent: User browser type and operating system. • Language: User browser and operating system language. • Domain: The name of the domain that triggered the alert. • User: The name of the dashboard user who performed an action that triggered the alert. • Alert Details: The display varies depending on the type of alert. • Device ID: The ID of the device that triggered the alert. • Matched URL: The portion of the URL that matched and triggered the alert.
HTML	<p>This tab is visible only if the alert includes these details. It shows you the raw HTML that was included in the alert.</p>
Data	<p>This tab is visible only if the alert includes these details. It shows you the raw HTML and other data that was extracted for further diagnosis of the alert condition.</p> <p>If the alert type is External Sources or Trojan Validator, this tab displays the malware detection alerts.</p> <p>If the alert type is External Sources, the alert type is 6 and the alert component is 5 and the value contains the forbidden added HTML element and its contents in escaped base64 format.</p> <p>If the alert type is Trojan Validator, the alert type is 6 and the alert component is 3. The value contains the bait signatures in escaped base64 format.</p>
About	<p>This tab gives a brief summary of details about the alert type.</p>
Advanced	<p>This tab displays the exact query that was sent in the alert. This information can be used to debug alerts and understand the cause of the alert. It is helpful for the Security Operations Center (SOC).</p>

Add an advanced query filter

Before you can perform this task, you must be logged in as Admin.

BIG-IQ® Fraud Protection Service provides a rich set of querying features that allow you to quickly and efficiently locate the alerts that you are interested in.

When you select the **Filter** button from an alerts screen, or when you select add/edit from the Saved Filters screen, you see a dialog box that allows you to specify what alerts you want to filter for.

The screen provides the most common filters in list and text boxes, but you can specify additional filters. The filters that display initially depend on the type of alert you are configuring.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service**, and then click **Alerts**.
3. On the left, select the type of alert for which you want to specify advanced filter alerts. The Filter Alerts screen opens.
4. To add filter details, click the **Filter** button. The Filter Alerts popup screen opens.
5. Complete the Filter Alerts screen:
 - a) For **Filter Name**, if you want to save this query for future use, type a name for this set of query details.
 - b) For **Category**, select one or more categories to specify the type of alert.
 - c) For **Date**, you can specify **last 2 weeks**, **last month**, **last three months**, **last six months**, or select a custom date range. If you only specify a start date, BIG-IQ selects all alerts from the start date to the current date.
 - d) For **Alert Severity**, type the minimum and maximum severity of the alerts that you want to match. If the maximum is not entered, the default is 100.
 - e) For **Status**, if you choose one of the options, only alerts of that status are shown. If multiple status are needed, then specify them in the **Additional Query Parameter** field (near the bottom of the screen).
 - f) For **Location**, select the geographic location on which you want to filter.
 - g) For **User**, type the name of the user that triggered the alert. You can use a wildcard *. For example `p*` matches all users whose name starts with the letter P.
 - h) For **Domain**, type the domain of the site that was in use when the alert was sent. You can use a wildcard *. For example `p*` matches all host domains whose name starts with the letter P. You can also type the domain of the phishing site or the host of the site that was detected.
 - i) For **Client IP**, type the IP address of the victim of the alert in which you are interested.
 - j) For **Alert URL**, type the source URL that caused the alert.
 - k) For **Guid**, type the unique identifier for the set of alerts that make up one session. To find the guid, select the alert, and then click the **Advanced** tab. Under Query Parameters, look for **fpm_guid**.
- l) For **Additional Query Parameters**, if what you want cannot be specified with the quick selections, you can use the query language. The format for these query parameters is: `key1: value1 key2: value2 (key3:value3 OR key4)`. **OR** is implied if it is not supplied.

Important: The query string syntax is parsed into a series of terms and operators. A term can be a single word or a phrase. Note that phrases must be surrounded by double quotes. In general the query string syntax observes the Lucene query syntax. The following characters are reserved and cannot be used in a query:

```
+ - = && || > < ! ( ) { } [ ] ^ " ~ * ? : \ /
```

For example: `(alertType:6 OR alertType:8) language:*us`

For a list of advanced query parameters refer to *Advanced Query Parameter Syntax*.

6. Click **Save**.

Additional Query Parameters

If what you want can not be specified with the quick selections, you can use the query language. Available query parameters are listed here.

Parameter Name	What it means
category	The type of alert. Select one or more categories. If none are selected, the search will apply to all categories.
alertUrl	Type the source URL that caused the alert.
alertType	A specific type of alert within a category.
device	A specific variation within a type of alert.
component	A specific variation within a type of alert.
domain	Type the domain of the site that was in use when the alert was sent. You can also type the domain of the phishing site, or the host of the site that was detected.
clientIp	Type the IP address of the victim of the alert that you are interested in.
details	This parameter can contain many different values depending on the type of alert.
device	The device ID of the machine generating the alert (typically a mobile device).
alertId	A unique ID configured on the BIG-IP® device for each virtual IP address.
severity	Specifies the ID of the customer in the dashboard. When configuring a mobile security anti-fraud profile, you must ensure that the value you assign here for Alert Identifier is the same value used for VMobile's customer parameter in the init iOS method and Android constructor.
status	The status assigned by the SOC.
userAgent	The user browser type and operating system.
continent	The continent code.
country	The country code.
region	The region code.
language	User browser and OS language.
referer	The URL of the site that was visited just before the alert URL was visited.
uri	The URI to which the client requested to go.
user	Type the name of the user that triggered the alert.
guid	Type the unique identifier for the set of alerts that make up one session.
rule	As set by the user in the rule.
alertDetails	As set by the user in the rule.
recommendation	As set by the user in the rule.
date	You can specify last 2 weeks , last month , last three months , last six months or select a custom date range. If you only specify a start date, BIG-IQ® selects all alerts from the start date to the current date.
cookie	Cookie information associated with this alert.
dateType	Type the number of days back from which to start the query.

Create and save a custom filter

Before you can perform this task, you must be logged in as Admin.

You can create and save custom filters. This process is very similar to creating an advanced query filter, except you start with no default set of filters.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service**, and then click **Alerts**.
3. Click **Saved Filters**.
The Saved Filters screen opens.
4. Click **Create** to create a new filter.
The New Saved Filter screen opens.
5. In the **Filter Name** field, type a name for the alert filter.
6. For **Category**, select the type of alert from the list.
7. For the **Date**, select from the options in the list.
The options are, **Last 2 weeks**, **Last month**, **Last three months**, **Last six months**, or a **Custom** date range. If you only specify a start date, the system selects all alerts from the start date to the current date.
8. For **Alert Severity**, select the severity level of the alert. The **From** and **To** fields include numbers ranging from 1 to 100.
9. For **Status**, select the status from the list. You can pick one of the options, and only alerts of that status are shown. If you need more than one status, you can specify that in the **Additional Query parameter** field.
10. For **Location**, select the location from the list.
11. For **User**, type the user name.
12. In the **Domain** field, type the domain.
The system only matches on exact match, and is case sensitive.
13. In the **Client IP** field, type the client IP address.
14. In the **Alert URL** field, type the alert URL.
15. In the **Guid** field, type the unique identifier.
16. If what you want can't be specified with the quick selections, you can use the query language in the **Additional Query Parameter** setting. or example:
This is the format: `key1: value1 key2: value2 (key3:value3 OR key4)`. For example:

```
(alertType:6 OR alertType:8)
after Feb 02 2015 07:56:26 before Feb 10 2015 23:56:26
host:versafe.com alertId:ddd
severityGE:2 severityLE:94
status:new rule:rule1
```

17. Click **Save & Close**

You have now created and saved alert filters.

Change an alert status

Before you can perform this task, you must be logged in as Admin.

You can change the status of alerts in Fraud Protection Service. An alert status change is performed by an admin, security manager, or FPS manager to indicate that an alert has been inspected, and what the status of the alert is.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service**, and then click **Alerts**.
3. Click **Unfiltered Alerts**.
4. Select the check box of the alert type for which you want to change the status.
5. Click the **More** button, and then select **Change Status**.
6. Under **Select the new status to set on alerts**, select the new status from the list.

Option	Description
New	The SOC team has not yet handled this item.
Open	The SOC team is currently handling this item.
Handle	The SOC team has finished handling this item.
Monitor	The SOC team has monitored this item.
Close	The SOC team has closed this item.
Ignore	The SOC team is familiar with the alert and has decided that it is not malicious (the alert is a false positive). Ignored alerts can be seen only when using filters.
Official	The SOC team has determined that this specific URL is legitimate.

7. Click **Change Selected**.
Changing alert statuses displays while your request is processes.
8. Click **Close** when the alert status change completes.

Remove an alert

Before you can perform this task, you must be logged in as Admin.

You can delete the alerts that you have created in FPS.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service**, and then click **Alerts**.
3. On the left, select the alert type that you want to delete.
4. Select the specific alert you want to delete, then click the **More** button, and select **Remove**.

***Note:** If the header check box is selected, when you click **Remove** you are prompted to select whether you want to remove all of the alerts that are currently selected (only 50 to 75 at a time are selected at a time due to memory constraints), or all the alerts that match the query.*

The specified alerts are deleted.

Export an alert

Before you can perform this task, you must be logged in as Admin.

You can export the alerts that you have created in FPS.

1. At the top of the screen, click **Monitoring**.
2. On the left, click **EVENTS > Fraud Protection Service**, and then click **Alerts**.

3. On the left, select the alert type that you want to export.
4. Select the alert you wish to export, then click the **More** button, and select **Export**.

The specified alerts are exported to a `.csv` file in your Downloads folder.

Signature files overview

FPS malware signatures allow the BIG-IP® system to discover generic malware targeting web sites and mobile apps, and enhances protection of your anti-fraud profile. It is important to help keep the fraud protection on your system up to date by updating malware signatures with a signature file provided by F5®.

Signature file updates can be downloaded from the F5 Update server or uploaded from a local server. The upload option is relevant in a case where F5 has provided you directly with a signature file update.

Signature file updates can be downloaded from the F5 update server either manually or automatically. If you choose the automatic download option, you can configure the time interval for the periodic updates.

Downloading a signature file from the F5 update server

This procedure requires at least one BIG-IP® device with Fraud Protection Service discovered on your BIG-IQ® system.

Download a malware signature file from the F5 update server to ensure that you have the most up-to-date protection of your anti-fraud profile on the BIG-IP system.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Signature Files** and then click **Signature File List**.
3. Click **Download**.
The Choose download and install option screen opens.
4. Choose one of the options:
 - **Download latest files:** Choose this option to download the most up-to-date file but not install it at this time.
 - **Download latest files and install on All devices:** Choose this option to download the most up-to-date file and install it immediately after download on all BIG-IP devices in the cluster.
 - **Download latest files and install on Active devices:** Choose this option to download the most up-to-date file and install it immediately after download on the primary BIG-IP devices in the cluster.
5. Click **OK**.

The most up-to-date signature file is downloaded to the BIG-IQ system and appears in the list in the Signature Files List screen. If you chose the download and install option, the file is pushed to the BIG-IP devices in the cluster and installed on them.

If you did not choose the download and install option, you need to manually install the updated signature file to complete the update of malware signatures on the BIG-IP system.

You can check the status of the download by going to **SECURITY > Fraud Protection Services > Signature Files > Download Process** and clicking on the name of the signature file in the list. If you chose the download and install option, check the status at **SECURITY > Fraud Protection Services > Signature Files > Download and Install**.

Uploading a signature file stored locally

This procedure requires at least one BIG-IP® device with Fraud Protection Service discovered on your BIG-IQ® system.

You can upload a locally stored malware signature file to the BIG-IQ system if you do not want to download the updated malware signature file from the F5 update server.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Signature Files** and then click **Signature File List**.
3. Click **Import**.
The Import FPS Signature File screen opens.
4. Choose one of the following actions:
 - Click **Choose File**, and then perform the following steps:
 1. Navigate to the updated signature file.
 2. Click **Open**. The file name appears in the Import FPS Signature File screen.
 3. Click **Import** at the bottom of the Import FPS Signature File screen. The updated file now appears in the Signature Files list.
 - Drag and drop the updated signature file from its original location to the area labeled Drop Update File Here. After doing this, the Signature Files list appears, showing the updated file.

Manually install the updated signature file to finish updating malware signatures on the BIG-IP system.

Installing a signature file

Before you can install a signature update file, you must either download the file from the F5 update server or upload it locally.

Install a signature update file to one or more BIG-IP® devices to ensure that you have the most up-to-date protection of your anti-fraud profile on the BIG-IP system.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Signature Files** and then click **Signature File List**.
3. In the Signature Files list, click the name of the signature file you want to install.
The Properties screen for the signature file opens.
4. For the **Install to Devices** setting, select the BIG-IP device(s) where you want to install the file.
5. From the **Install To** list, choose whether to install the file on all BIG-IP devices in the cluster or on just the active (primary) devices in the cluster.
6. Click **Install**.
The BIG-IQ system pushes the file to the BIG-IP devices that you selected and the file is installed on those devices.

You can check the status of the installation by going to **SECURITY > Fraud Protection Services > Signature Files > Install Status** and clicking the name of the signature file in the list.

Scheduling automatic signature file updates

This procedure requires at least one BIG-IP® device with Fraud Protection Service discovered on your BIG-IQ® system.

Schedule automatic signature file updates to automate the process of downloading and installing updated malware signature files according to a specified time interval.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Signature Files** and then click **Signature File List**.
3. Click **Settings**.
The Settings screen opens.
4. For **Remote Updates**, select the **Enabled** check box.
5. For **Interval**, select a time interval for the automatic update.
 - a) If you choose **Custom**, select a time interval from the Custom list.
6. For **Starting At**, choose a date and time for when the automatic update should start.
7. If you are using a proxy, select it from the **Proxy** list.
8. From the **Install To** list, choose whether you want the automatic update to install the signature file on all BIG-IP devices in the cluster or on just the active (primary) devices in the cluster.
9. Click **Save & Close**.
The Signature Files list appears.
10. Follow these steps for every BIG-IP device that you want to receive the automatic signature file update:
 - a) Go to **SECURITY > Fraud Protection Services > Devices**.
 - b) Click the device name in the Devices List.
The device Properties screen opens.
 - c) Under Signature File Version, select the **Allow Automatic Install** check box.
 - d) Click **Save & Close**.

Automatic signature file updates are configured, and will begin on the start date that you selected.

You can check the status of the download and installation by going to **SECURITY > Fraud Protection Services > Signature Files > Download and Install** and clicking the name of the signature file in the list.

Engine files overview

The FPS JavaScript Engine allows the BIG-IP[®] system to discover generic malware targeting web sites and mobile apps, and enhances protection of your anti-fraud profile. It is important to help keep the fraud protection on your system up to date by updating the engine with an engine file provided by F5[®].

Engine file updates can be downloaded from the F5 update server or uploaded from a local server. The upload option is relevant in a case where F5 has provided you directly with an engine file update.

Engine file updates can be downloaded from the F5 update server either manually or automatically. If you choose the automatic download option, you can configure the time interval for the periodic updates.

***Note:** F5 recommends not using the automatic engine file update option, and to perform engine file updates manually.*

Downloading an engine file from the F5 update server

This procedure requires at least one BIG-IP[®] device with Fraud Protection Service discovered on your BIG-IQ[®] system.

Download a JavaScript engine file from the F5[®] update server to ensure that you have the most up-to-date protection of your anti-fraud profile on the BIG-IP system.

1. At the top of the screen, click **Configuration**.

2. On the left, click **SECURITY > Fraud Protection Services > Engine Files** and then click **Engine File List**.
3. Click **Download**.
The Choose download and install option screen opens.
4. Choose one of the options:
 - **Download latest files:** Choose this option to download the most up-to-date file but not install it at this time.
 - **Download latest files and install on All devices:** Choose this option to download the most up-to-date file and install it immediately after download on all BIG-IP devices in the cluster.
 - **Download latest files and install on Active devices:** Choose this option to download the most up-to-date file and install it immediately after download on the primary BIG-IP devices in the cluster.
5. Click **OK**.

The most up-to-date engine file is downloaded to the BIG-IQ system and appears in the list in the Engine Files List screen. If you chose the download and install option, the file is pushed to the BIG-IP devices in the cluster and installed on them.

If you did not choose the download and install option, you need to manually install the updated engine file to complete the update.

You can check the status of the download by going to **SECURITY > Fraud Protection Services > Engine Files > Download Process** and clicking on the name of the engine file in the list. If you chose the download and install option, check the status at **SECURITY > Fraud Protection Services > Engine Files > Download and Install**.

Uploading an engine file stored locally

This procedure requires at least one BIG-IP[®] device with Fraud Protection Service discovered on your BIG-IQ[®] system.

You can upload a locally stored JavaScript engine file to the BIG-IQ system if you do not want to download the updated engine file from the F5[®] update server.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Engine Files** and then click **Engine File List**.
3. Click **Import**.
The Import Engine File screen opens.
4. Choose one of the following actions:
 - Click **Choose File**, and then perform the following steps:
 1. Navigate to the updated engine file.
 2. Click **Open**. The file name appears in the Import Engine File screen.
 3. Click **Import** at the bottom of the Import EngineFile screen. The updated file appears in the Engine Files list.
 - Drag and drop the updated engine file from its original location to the area labeled Drop Update File Here. The Engine Files list appears, showing the updated file.

Manually install the file to finish updating the JavaScript engine on the BIG-IP system.

Installing an engine file

Before you can install an engine file, you must either download the file from the F5[®] update server or upload it locally.

Install an engine update file to one or more BIG-IP® devices to ensure that you have the most up-to-date protection of your anti-fraud profile on the BIG-IP system.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Engine Files** and then click **Engine File List**.
3. In the Engine Files list, click the name of the engine file you want to install.
The Properties screen for the engine file opens.
4. For the **Install to Devices** setting, select the BIG-IP device(s) where you want to install the file.
5. From the **Install To** list, choose whether to install the file on all BIG-IP devices in the cluster or on just the active (primary) devices in the cluster.
6. Click **Install**.
The BIG-IQ system pushes the file to the BIG-IP devices that you selected and the file is installed on those devices.

You can check the status of the installation by going to **SECURITY > Fraud Protection Services > Engine Files > Install Status** and clicking the name of the engine file in the list.

Scheduling automatic engine file updates

This procedure requires at least one BIG-IP® device with Fraud Protection Service discovered on your BIG-IQ® system.

Schedule automatic engine file updates to automate the process of downloading and installing updated engine files according to a specified time interval.

Note: F5 recommends not using the automatic engine file update option, and to perform engine file updates manually.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Engine Files** and then click **Engine File List**.
3. Click **Settings**.
The Settings screen opens.
4. For **Remote Updates**, select the **Enabled** check box.
5. For **Interval**, select a time interval for the automatic update.
 - a) If you choose **Custom**, select a time interval from the Custom list.
6. For **Starting At**, choose a date and time for when the automatic update should start.
7. If you are using a proxy, select it from the **Proxy** list.
8. From the **Install To** list, choose whether you want the automatic update to install the engine file on all BIG-IP devices in the cluster or on just the active (primary) devices in the cluster.
9. Click **Save & Close**.
The Engine Files list appears.
10. Follow these steps for every BIG-IP device that you want to receive the automatic engine file update:
 - a) Go to **SECURITY > Fraud Protection Services > Devices**.
 - b) Click the device name in the Devices List.
The device Properties screen opens.
 - c) Under Engine File Version, select the **Allow Automatic Install** check box.
 - d) Click **Save & Close**.

Automatic engine file updates are configured, and will begin on the start date that you selected.

You can check the status of the download and installation by going to **SECURITY > Fraud Protection Services > Engine Files > Download and Install** and clicking the name of the engine file in the list.

Configuring F5 DataSafe Profiles

F5 DataSafe Overview

F5® DataSafe™ protects web sites from Trojan attacks by encrypting data at the application layer on the client-side. Encryption is performed on the client-side using a public key generated by the BIG-IP® system and provided uniquely per session. When the encrypted information is received by the BIG-IP system, it is decrypted using a private key that is kept on the server-side. Users can view alerts on potential encryption attacks in the Data Protection log in the BIG-IP system or in a remote Syslog Server if you choose to configure one for receiving alerts.

The F5 BIG-IQ® system improves the usability of DataSafe profiles by allowing configuration of a single DataSafe profile that can be used on multiple BIG-IP systems. In order to apply F5 DataSafe protection on your web site, you need to perform the following preliminary configurations in the BIG-IQ system:

- Configure a virtual server for the DataSafe profile.
- Create an initial DataSafe profile.
- Associate that profile with the virtual server.

***Note:** In most cases, the virtual server that you create for your profile will be an SSL virtual server.*

***Important:** F5 DataSafe profiles containing SPA views or wildcard parameters are not deployable on BIG-IP versions 13.x and lower. When performing **Evaluate and Deploy** for Fraud Protection, check the Critical Errors column to ensure that your DataSafe profile does not contain any features rendering it undeployable on your BIG-IP devices.*

Create a web application server node

Local traffic pools use nodes as resources for load balancing. A *node* is an IP address that represents a server resource, which hosts applications.

***Note:** If you plan to add your F5 DataSafe profile to an existing virtual server (that is, you are not going to create a new virtual server for your profile), you do not need to create a new web application node.*

1. At the top of the screen, click **Configuration**.
2. On the left, click **LOCAL TRAFFIC > Nodes**.
The Nodes list appears.
3. Click the **Create** button.
The New Node screen opens.
4. In the **Name** field, type a descriptive label for the node.
Names are case-sensitive.
5. In the **Device** field, select the BIG-IP device of the node.
6. In the **Address** field, type the IP address of the web application server.
7. Click **Save & Close**.
The Nodes list screen opens, showing the node you just created.

Create a web application pool

You can create a pool of servers that you can group together to receive and process traffic.

Note: If you plan to add your F5 DataSafe profile to an existing virtual server (that is, you are not going to create a new virtual server for your profile), you do not need to create a new web application pool.

1. At the top of the screen, click **Configuration**.
2. On the left, click **LOCAL TRAFFIC > Pools**.
The Pools list opens.
3. Click **Create**.
The New Pool screen opens.
4. In the **Name** field, type a unique name for the web application pool.
5. In the **Device** field, select the BIG-IP device of the pool.
6. Click **New Member**.
The New Pool Member screen opens.
7. For **Node Type**, select **Existing Node**.
8. From the **Node** list, select the IP address of the web application server.
9. From the **Port** list, select **HTTP** or **HTTPS**.
10. Click **Save & Close** in the New Pool Member screen.
11. Click **Save & Close** in the New Pool screen.

The new pool appears in the Pools list.

Create a log publisher

You create a log publisher to specify where the BIG-IP system sends alert messages.

1. At the top of the screen, click **Configuration**.
2. On the left, click **LOCAL TRAFFIC > Logs > Log Publishers**.
The Log Publishers list screen opens.
3. Click **Create**.
4. In the **Name** field, type a unique, identifiable name for this publisher.
5. At **Log Destinations**, from the **Available** list select **local-syslog**, and use the Move button -> to move the destination to the **Selected** list.
6. Click **Save & Close**.
The Log Publishers list screen opens, showing the log publisher you just created.

Create a custom HTTP profile

You should perform this procedure only if SNAT or Auto Map is used for Source Address Translation in the virtual server.

You create an HTTP profile to define the way that you want the system to manage HTTP traffic.

1. At the top of the screen, click **Configuration**.
2. On the left, click **LOCAL TRAFFIC > Profiles**.
3. Click **Create**.
The New Profile screen opens.
4. In the **Name** field, type a unique name for the profile.
5. From the **Type** list, select **Profile HTTP**.
6. For the **Insert X-Forwarded-For** setting, select **Enabled**.
7. Click **Save & Close**.

The custom HTTP profile now appears in the HTTP profile list screen.

Create a virtual server

You create a virtual server to receive application requests from the clients. The virtual server manages the network resources for the web application that you are securing with a security policy.

1. At the top of the screen, click **Configuration**.
2. On the left, click **LOCAL TRAFFIC > Virtual Servers**.
3. Click the **Create** button.
The New Virtual Server screen opens.
4. In the **Name** field, type a unique name for the virtual server.
5. In the **Device** field, choose a BIG-IP device for the virtual server.
6. In the **Destination Address** field, type an address, as appropriate for your network.
The supported format is address/prefix, where the prefix length is in bits. For example, an IPv4 address/prefix is 10.0.0.1 or 10.0.0.0/24, and an IPv6 address/prefix is `ffe1::0020/64` or `2001:ed8:77b5:2:10:10:100:42/64`. When you use an IPv4 address without specifying a prefix, the BIG-IP® system automatically uses a /32 prefix.
7. In the **Service Port** field, type 80, or select **HTTP** from the list.
8. From the **HTTP Profile** list:
 - a) If you previously created an HTTP profile, then select the profile you created.
 - b) Otherwise, select **http**.
9. From the **Source Address Translation** list, select the appropriate translation.
10. From the **Default Pool** list, select the pool that is configured for the application server.
11. Click **Save & Close**.

Configure general properties for an F5 DataSafe profile

Before configuring the profile's general properties, you must have created a web application server node, a web application pool, and a log publisher for the profile.

You configure general properties for a F5 DataSafe profile to ensure proper encryption of data on your web site.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. Click **Add**.
The Add DataSafe Profile screen opens, with the General Properties area showing.
4. In the **Name** field, type a unique name for the profile.
5. From the **Parent Profile** list, choose which parent profile you want to base your profile on.

Note:

- All undefined properties in the profile you are creating will be inherited from the parent profile. Any future changes to those properties in the parent profile will be automatically inherited by the profile you are creating.
 - URL properties are not inherited.
-

6. In the **Log Publisher** list, select the Log Publisher that you created.
7. If your web application is case-sensitive to URLs, do the following:
 - a) Click **Advanced** in the General Settings section.

The Advanced settings appear.

- b) For the **URLs are case sensitive** setting, select the **Enabled** check box.

Note:

- You should enable this setting only if your web application is case-sensitive to URLs.
 - This setting cannot be changed after initial creation of your profile and does not affect URL parameters in the profile.
-

8. Click Save & Close.

The system has created the F5 DataSafe profile.

After creating your the profile, you should define the URLs that you want to include in your profile.

Define URLs in the profile

You should set the profile's general properties before defining URLs in the profile.

Define URLs in your profile to ensure proper protection of your web site.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. From the list of profiles, select the profile on which you want to define a URL.
The DataSafe profile properties screen opens.
4. Click **URLS** and then the **Add** button.
The Add URL screen opens.
5. In the **URL Path** field, choose one of the following types for the URL path:
 - **Explicit:** Assign a specific URL path.
 - **Wildcard:** Assign a wildcard expression URL. Any URL that matches the wildcard expression is considered legal and will receive protection. For example, typing the wildcard expression `/*` specifies that any URL is allowed.

Note: All URLs must start with a slash (/), for both Explicit and Wildcard types.

- a) If you chose **Explicit**, type the URL path.
- b) If you chose **Wildcard**, type the wildcard expression URL and if you want it to include a query string, select the **Include Query String** check box.

The syntax for wildcard entities is based on shell-style wildcard characters. This following table lists the wildcard characters that you can use so that the entity name matches multiple objects.

Wildcard character	Matches
*	All characters
?	Any single character
[abcde]	Exactly one of the characters listed
[!abcde]	Any character not listed
[a-e]	Exactly one character in the range
[!a-e]	Any character not in the range

If a wildcard character is actually used as part of a real URL and you don't want it to be treated as a wildcard character, use \ and then the character to indicate that it should not be used as a wildcard character.

Note: Regular expressions should not be used in Wildcard URLs.

6. If you want the DataSafe Main JavaScript to run on the web page of the URL, select the **Enabled** check box for **Inject Main JavaScript** (selected by default).

*Note: You can disable **Inject Main JavaScript** for web pages that do not require encryption protection and only receive data from a protected page.*

7. If you want to change the default location where the DataSafe Main JavaScript is injected in the URL's web page, at **Location of Main JavaScript Injection**:
 - a) Select a position for the Main JavaScript (either before or after the tag you define).
 - b) In the **Tag** field, type the tag for determining where the Main JavaScript is placed.

Note: The DataSafe Main JavaScript must be injected into the web page HTML before the CSS Element.

8. If you want to change the default location of the Disabled JavaScript Detection Tag, at **Location of Disabled JavaScript Detection Tag** do the following:
 - a) Select a position for the Disabled JavaScript Detection Tag (either before or after the tag you define)
 - b) In the **Tag** field, type the tag for determining where the Disabled JavaScript Detection Tag is placed

The Disabled JavaScript Detection Tag detects if JavaScript has been disabled in your web browser.

9. Click **Save & Close** to save your initial URL settings.

After defining the URLs in your profile, you should set a URL to be a login page.

Set a URL to be a login page

Set a URL in your profile to be a login page if you want to encrypt data on a login page in your web site.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. Click **URLS**.
The URLs list screen opens.
5. Click the URL that you want to set as the login page, or click **Add** if you want to create a new URL to be a login page.
6. Click **PARAMETERS**.
7. Click the **Add** button.
The Add Parameter popup screen opens.
8. In the **Name** field, type a name for the parameter.
9. Select the **Identify as Username** check box.

*Note: Only one parameter per URL can have the attribute **Identify as Username**.*

10. Click **Add**.

11. Click **LOGIN PAGE PROPERTIES**.

Note: Configuring the Login Page properties is not required but recommended because a login cannot be verified as successful unless at least one of the criteria in the Login Page Properties screen is configured.

12. For the **URL is Login Page** setting, check the **Enabled** check box. The Login Page Properties appear.

*Note: If **URL is Login Page** is enabled, you must configure at least one of the Login Page properties. If you configure more than one Login Page property, then all the criteria for all properties must be fulfilled for the BIG-IP system to consider the login successful.*

13. In the **A string that should appear in the response body** field, type a string that should appear in the successful response to the login URL.

14. In the **A string that should NOT appear in the response body** field, type a string that should not appear in the successful response to the login URL.

15. In the **Expected HTTP response status code** field, select **Specify** and type the HTTP response status code that the server must return to the user upon successful login, or select **None**.

*Note: If you select **None**, HTTP response code is not used to determine a successful login.*

16. In the **Expected response header** field, type a header name that the successful response to the login URL must match.

17. In the **Expected cookie name** field, type a cookie name that the successful response to the login URL must include.

18. Click **Save & Close**.

The Login Page and Parameter settings are saved.

If the form action in the HTTP request from the login page does not refer to the login page URL, you need to also configure a post-login URL.

Configure a post-login URL

You need to configure a post-login URL only if the login page sends the login request to a URL that is different from the login URL. (For example, the login page URL is `/login.jsp`, but it sends the user name and password to `/validate.jsp`).

Configure a post-login URL to ensure that the BIG-IP system can retrieve the user name and decrypt the password.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. On the left, click **URLS**.
The URLs list appears.
5. Select the check box next to the login URL.
6. Click **Actions > Clone**.
The Clone URL screen opens.
7. In the **URL Path** field, type the URL that is referred to in the form action of the HTTP request.
8. Optional: In the **Description** field, type a description for the URL.
9. If you don't want to encrypt data on the web page of the post-login URL, disable the **Inject JavaScript** setting.

10. Click the **Clone** button in the Clone URL popup screen.

Note:

- The new URL inherits all the configured settings and parameters of the source URL
 - Once the new URL is created, there is no further dependency on the source URL and any future changes made to the source URL are not inherited by the new URL.
-

The BIG-IQ[®] system creates the new URL and it appears in the URLs list.

Associate an F5 DataSafe profile with a virtual server

In order to complete the process of applying F5 DataSafe protection to your web site, you need to associate the F5 DataSafe profile that you created with the virtual server that you created.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > Virtual Servers**.
The Virtual Servers list appears.
3. Click the name of the virtual server on which you want to associate the F5 DataSafe profile.
The virtual server properties screen opens.
4. From the **Attached Profile** list, select the DataSafe profile that you want to associate with this virtual server.
5. Click **Save & Close**.
The Virtual Server list appears, and the DataSafe profile that you chose in the previous step is now listed as being associated with the virtual server.

General Configuration Options for F5 DataSafe Profiles and URLs

Configure advanced general settings on an F5 DataSafe profile

Configure advanced general settings on an F5 DataSafe profile if you want to change the default settings that the BIG-IQ system assigns to profiles.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. In the **Alert Path** field, use the automatically generated path, or define your own path.

Note: If you define your own path, ensure that the path is not used by any other field in any profile that is deployed on the same BIG-IP device as the current profile, and that it is not an already existing URL.

5. In the **Suggested Username Header** field, use the default header or type a header that will be added to AJAX requests when the BIG-IP system detects an AJAX login attempt, which is common for Single Page Applications.
With this header, the BIG-IP system can detect the username that was used for the login. The client sends this header only for URLs in the profile that have a parameter set as Identify as Username.
6. For the **JavaScript Directory** field, use the automatically generated path, or define your own.

This path specifies the location of the main F5 DataSafe JavaScript. This path does not include the actual file name of the JavaScript.

Note:

- This path should be changed only if your application is already using a directory with the same path as the automatically assigned default path.
 - If you define your own path, ensure that the path is not used by any other field in any profile that is deployed on the same BIG-IP device as the current profile, and that it is not an already existing URL.
-

7. For the **JavaScript Configuration Directory** field, use the automatically generated path, or define your own path that specifies the location of the F5 DataSafe JavaScript containing profile configuration settings.

This path specifies the location of the configuration JavaScript. This path does not include the actual file name of the JavaScript.

Note:

- This path should be changed only if your application is already using a directory with the same path as the automatically assigned default path.
 - If you define your own path, ensure that the path is not used by any other field in any profile that is deployed on the same BIG-IP device as the current profile, and that it is not an already existing URL.
-

8. For the **JavaScript Removal Location** field, use the automatically generated path, or define your own path that specifies the location of the image file name that the system uses for detecting a JavaScript removal attack.
-

Note:

- This path should be changed only if your application is already using a directory with the same path as the automatically assigned default path.
 - If you define your own path, ensure that the path is not used by any other field in any profile that is deployed on the same BIG-IP device as the current profile, and that it is not an already existing URL.
-

9. For **JavaScript Grace Threshold**, change the default value if you want to raise or lower the maximum amount of time (in seconds) permitted between when a protected web page is loaded and its injected JavaScript activates.

10. Leave the **Additional function to be run before JavaScript load** field blank unless instructed otherwise by F5.

11. For the **Prevent duplicate alerts from Client Side** setting, select the **Enabled** check box to prevent the client from sending an alert with information that is identical to an alert previously sent by the client during the past 24 hours.

12. Click **Save & Close**.

The BIG-IQ system saves the changes that you made to the advanced settings.

Enable an iRule to handle logins and alerts

Enabling iRules® to handle logins and alerts is only relevant if you have written an iRule to handle the `ANTIFRAUD_ALERT` event, or the `ANTIFRAUD_LOGIN` event and the iRule is associated with the same virtual server as your profile.

Enable an iRule to handle logins and alerts if you want to use an iRule to disable alerts or record login events.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. Scroll to the bottom of the screen, and for the **Trigger iRule Events** setting, select the **Enabled** check box.
5. Click **Save**.
iRules are now enabled to handle logins and alerts.

iRule events

iRules[®] can subscribe to the ANTIFRAUD_ALERT event and the ANTIFRAUD_LOGIN event in F5[®] DataSafe[™].

iRule event	Description
ANTIFRAUD_ALERT	Occurs when alerts are sent to the BIG-IP [®] system.
ANTIFRAUD_LOGIN	Occurs when a user successfully logs in to the profile. Or if login validation is not configured, this event can occur if just the user name is identified.

iRule Examples

The following example shows how an iRule uses the ANTIFRAUD_ALERT event to log all available information about an alert that was sent by the BIG-IP system to the location `/var/log/ltm`.

```
when ANTIFRAUD_ALERT{
  log local0. "====Anti-Fraud Alert===="
  log local0. "Alert Identifier: [ANTIFRAUD::alert_id]"
  log local0. "Alert Type: [ANTIFRAUD::alert_type]"
  log local0. "Alert Component: [ANTIFRAUD::alert_component]"
  log local0. "Alert Details: [ANTIFRAUD::alert_details]"
  log local0. "Alert GUID: [ANTIFRAUD::alert_guid]"
  log local0. "Alert Device ID: [ANTIFRAUD::alert_device_id]"
  log local0. "Alert License ID: [ANTIFRAUD::alert_license_id]"
  log local0. "Alert Score: [ANTIFRAUD::alert_score]"
  log local0. "Alert Username: [ANTIFRAUD::alert_username]"
  log local0. "Alert HTTP Referrer: [ANTIFRAUD::alert_http_referrer]"
  log local0. "Alert Additional Info: [ANTIFRAUD::alert_additional_info]"
}
```

The following example shows how an iRule uses the ANTIFRAUD_ALERT event to disable a specific alert according to its type.

```
when ANTIFRAUD_ALERT{
  if {[ANTIFRAUD::alert_type] eq "components_validation"}{
    log local0. "Alert Type is components validation"
    ANTIFRAUD::disable alert
    log local0. "Disabled Alert"
  }
}
```

The following example shows how an iRule uses the ANTIFRAUD_LOGIN event with its commands.

```
when ANTIFRAUD_LOGIN{
  log local0. "====Anti-Fraud Login===="
  # read mode
  log local0. "Username: [ANTIFRAUD::username]"
  log local0. "GUID: [ANTIFRAUD::guid]"
}
```

```
# write mode
ANTIFRAUD::username "other_user"
}
```

Values for iRule commands

The following values can be used in iRule commands:

Value	Description
alert_id	For example, d4.
alert_type	The type of alert.
alert_component	An error type that is determined according to the alert_type.
alert_details	Additional information regarding the alert.
alert_device_id	Persistent browser identifier.
alert_license_id	crc32 of the license id in hex.
alert_transaction_data	Key-value list of all parameters marked to be attached.
alert_username	When this command is used without any additional arguments, this is the name of the user who triggered the alert. It is possible to use additional arguments to override the current user name (write mode), as shown in the ANTIFRAUD_LOGIN example above.
alert_http_referrer	The URL of the site that was visited just before the Alert URL was visited.
alert_additional_info	Shows additional information about the alert, such as the parameter values too long error message.
disable_alert	Disables the current alert.

For more information about iRules, go to F5 Networks DevCentral™ (<https://devcentral.f5.com/irules>).

Clone a profile

If you want to create a new profile with settings identical to an existing profile, you can clone the profile. Unlike parent-child profiles, the cloned profile is not dependent on the original one, and any changes made to the original profile after cloning are not inherited by the previously cloned profile.

Note: A cloned profile inherits all properties from the original profile including all URL properties, with the exception of system-generated random values. Once the cloned profile is created, there is no further dependency on the original profile and any changes made in the original profile are not received by the cloned profile, with the following exception:

- In the General Properties screen of a cloned profile, some of the settings have an override check box. If this check box is not checked, then any changes made in the original profile will be copied to the cloned profile. If it is checked, then changes in the original profile are not copied to the cloned profile.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**. The DataSafe Profiles list screen opens.
3. Select the check box next to the profile that you want clone.

4. Click the **Clone** button.
The Clone Profile pop-up screen opens.
5. In the Clone Profile pop-up screen, assign a new profile name.
6. Click **Clone**.
The new clone profile is created and appears in the list of profiles in the DataSafe Profiles screen.

Clone a URL

You can clone a URL if you want to create a new URL that inherits the settings on an existing URL.

***Note:** When cloning a URL, the new URL inherits all the configured settings and parameters of the source URL.*

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. From the list of profiles, select the profile with the URL you want to clone.
The DataSafe profile properties screen opens.
4. Click **URLS**.
The URLs list screen opens.
5. Select the check box next to the URL that you want clone.
6. Click **Actions > Clone**.
The Clone URL screen appears.
7. In the pop-up screen, assign a URL path or and (optionally) a description.
8. If you are cloning a URL and you want to encrypt data on the web page of the new URL, enable the **Inject JavaScript** setting.
9. Click the **Clone** button in the pop-up screen.

***Note:** Once the new URL is created, there is no further dependency on the source URL and any future changes made to the source URL/view are not inherited by the new URL.*

The BIG-IQ[®] system creates the new URL and the URL appears in the URLs list.

Encrypting Data on the Application Level

Overview: Encrypting data on the application level

Application Layer Encryption protects against credential theft from man-in-the-middle (MITM) and MITM browser attacks, verifies whether a user is trying to use a fabricated password, validates the client-side password, and encrypts credentials in real-time upon submission. F5[®] DataSafe[™] allows you to configure data encryption on the application level, so that sensitive data entered by a user on the client-side is protected against attempted fraud attacks that occur in the web application.

Encrypt data as it leaves the web browser

Encrypt data as it leaves the web browser if you want to protect data that was entered by the user as it leaves the web browser.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.

The DataSafe Profiles list screen opens.

3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. Click **URLS**.
The URLs list screen opens.
5. Select the URL on which you want to encrypt data.
The URL properties screen opens.
6. Click **APPLICATION LAYER ENCRYPTION**.
The Application Layer Encryption settings are displayed.
7. Ensure that the **Enabled** check box for **Application Layer Encryption** is selected.
8. If you want to use a custom encryption algorithm on parameters (instead of the BIG-IP® default encryption function), in the **Custom Encryption Function** field, type your custom encryption function.

The custom encryption function encrypts all URL parameters where **Encrypt** is disabled and **Substitute Value** is enabled on the parameter.

Note: If you use a custom encryption function, you can not enable **Real-Time Encryption** on this URL. Real-Time Encryption encrypts passwords as the user types them.

9. Click **PARAMETERS**.
10. Click the **Add** button.
The Add Parameter popup screen opens.
11. In the **Name** field, type a name for the parameter.
12. Select the **Encrypt** check box.
13. If the parameter is for a password field and you want to use substitute values when the user inputs the password, select the **Substitute Value** check box.

Note:

- This attribute should be applied only on parameters with the input type `password`.
- If you assign **Substitute Value** to a password parameter, the web browser's auto-complete feature for passwords does not work on this parameter.

Important: If you want a custom encryption function to be applied to this parameter, do not select the check boxes for both **Encrypt** and **Substitute Value** on the parameter. If you do this, the custom encryption function will not be applied to this parameter.

14. Click **Add**.
The parameter settings are saved.
15. Repeat steps 10-14 for every parameter you want the system to encrypt.
16. Click **Save & Close**.
The URL configuration settings are saved.

If the form action in the HTTP request from the web page you created above does not refer to the URL of the web page, you need to also configure a URL for decrypted data.

Configure a URL for decrypting data

You need to configure a separate URL for decrypting data only if the form action in the HTTP request from the client does not refer to the URL from which the request is being sent.

Configure a URL for decrypting data to ensure that your server can read and verify encrypted data that was sent from the client.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. Click **URLS**.
The URLs list screen opens.
5. Select the check box next to the URL where the client sends encrypted data.
6. Click **Actions > Clone**.
The Clone URL screen opens.
7. In the **URL Path** field, type the URL that is referred to in the form action of the HTTP request.
8. Optional: In the **Description** field, type a description for the URL.
9. Ensure that the **Inject JavaScript** setting is disabled.
10. Click the **Clone** button in the Clone URL popup screen.

Note:

- The new URL inherits all the configured settings and parameters of the source URL
 - Once the new URL is created, there is no further dependency on the source URL and any future changes made to the source URL are not inherited by the new URL.
-

Apply AJAX encryption on a URL

Apply Ajax encryption on your web page if the web page sends data using AJAX and you want the data to be encrypted.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. Click **URLS**.
The URLs list screen opens.
5. Select the URL on which you want to apply AJAX encryption.
The URL Properties screen appears.
6. Click **APPLICATION LAYER ENCRYPTION**.
The Application Layer Encryption settings are displayed.
7. Select the **Enabled** check box for **Full AJAX Encryption**.
8. If your web page uses JSON format for submitting data, do the following for every parameter that you want to have AJAX encryption:
 - a) Click **PARAMETERS** tab.
 - b) Click the **Add** button.
The Add Parameter popup screen opens.
 - c) In the **Name** field, type a name for the parameter.
 - d) Select both the **Encrypt** check box and the **Substitute Value** check box.
 - e) In the **AJAX Mapping** field, type a mapping key for the parameter that is sent from the client to the server.

For example, if you have a single page application form with an input field **name** or **ID** called **A** and you want to send it in the **B** key in the JSON file, type **B** in this text box.

*Note: If the input field **name** or **ID** in the HTML of your web page has the same **name** or **ID** as the key of the JSON file, you do not need to type a mapping key in this text box.*

- f) Click **Add**.
The parameter settings are saved and the URL Properties screen appears.
9. Click **Save & Close** in the URL properties screen.
The configuration settings for the URL are saved.

Configure HTML field obfuscation

Before you can configure HTML field obfuscation, **Application Layer Encryption** must be enabled on the URL.

Configure HTML field obfuscation if you want the BIG-IP® system to encrypt the `name` attribute of all defined HTML `<input>` fields, and then decrypt them back to the original `name` on the BIG-IP system.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
4. Click **URLS**.
The URLs list screen opens.
5. Select the URL on which you want to configure HTML field obfuscation.
The URL properties screen opens.
6. Click **APPLICATION LAYER ENCRYPTION**.
The Application Layer Encryption settings are displayed.
7. Select the **Enabled** check box for the **HTML Field Obfuscation** setting.
The **Add Decoy Inputs** and **Remove Element IDs** fields are displayed.
8. Select the **Enabled** check box for the **Add Decoy Inputs** setting if you want the system to randomly, and continuously, generate and remove decoy `<input>` fields that are added to the web page.

Enabling **Add Decoy Inputs** makes it harder for an attacker to identify sensitive information with either JavaScript or a proxy.
9. Select the **Enabled** check box for the **Remove Element IDs** setting if you want the system to remove the ID attribute from URL parameters that have the **Obfuscate** property.
10. Click **PARAMETERS**.
11. Click the **Add** button.
The Add Parameter popup screen opens.
12. In the **Name** field, type a name for the parameter.
13. Select the **Obfuscate** check box.
14. Click **Add**.
The parameter settings are saved.
15. Repeat steps 11-14 for every parameter you want the system to obfuscate.
16. Click **Save & Close** in the URL Properties screen.
The configuration settings for the URL or view are saved.

Remove JavaScript event listeners from parameters

Before you can remove JavaScript event listeners from parameters, Application Layer Encryption must be enabled on the URL.

You can remove JavaScript event listeners from parameters to protect sensitive data in parameters from being obtained by potential attackers.

***Note:** Some web applications add non-malicious event listeners that improve functionality. If you choose to activate removal of event listeners on parameters, this will remove all event listeners, including non-malicious ones added by the web application. Take this into account before deciding to activate removal of event listeners.*

1. At the top of the screen, click **Configuration**.
 2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
 3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.
 4. Click **URLS**.
The URLs list screen opens.
 5. Select the URL on which you want to remove JavaScript event listeners.
The URL Properties screen opens.
 6. Click **APPLICATION LAYER ENCRYPTION**.
The Application Layer Encryption settings are displayed.
 7. Select the **Enabled** check box for the **Remove Event Listeners** setting.
 8. Click **PARAMETERS**.
 9. Click the **Add** button.
The Add Parameter popup screen opens.
 10. In the **Name** field, type a name for the parameter as follows:
 - **Explicit:** Assign a specific parameter name.
 - **Wildcard:** Assign a wildcard expression for the parameter name. Any parameter name that matches the wildcard expression is considered legal and receives protection. For example, typing the wildcard expression * specifies that any parameter name is allowed.
 11. Select the **Obfuscate** check box or the **Substitute Value** check box.
-
- Note:** If you assign the **Substitute Value** attribute to a password parameter, the web browser's auto-complete feature for passwords does not work on this parameter.*
-
12. Click **Add**.
The parameter settings are saved.
 13. Repeat steps 9-12 for every parameter on which you want to remove JavaScript event listeners.
 14. Click **Save & Close** in the URL Properties screen.
The configuration settings for the URL are saved.

Configure advanced encryption on a URL

Before configuring advanced encryption on a URL, **Application Layer Encryption** must be enabled on the URL.

Configure advanced encryption on a URL if you want to apply F5 DataSafe advanced encryption methods on your web page.

1. At the top of the screen, click **Configuration**.
2. On the left, click **SECURITY > Fraud Protection Services > DataSafe Profiles**.
The DataSafe Profiles list screen opens.
3. In the list of profiles, click the relevant profile.
The DataSafe Profile Properties screen opens.

4. Click **URLS**.
The URLs list screen opens.
5. Select the URL on which you want to apply advanced encryption methods.
The URL Properties screen appears.
6. Click **APPLICATION LAYER ENCRYPTION**.
The Application Layer Encryption settings are displayed.
7. Select the **Enabled** check box for the **Identify Stolen Credentials** setting.

When this setting is enabled, the system examines whether the user is trying to use a password that was stolen from a parameter where **Substitute Value** is enabled.
8. Select the **Enabled** check box for the **Hide Password Revealer Icon** setting.

When this setting is enabled, the system hides the password revealer icon on a web page, for browsers that use a password revealer icon (for example, Internet Explorer versions 10 and later).

*Note: If you are using **JavaScript Function for Substitute Values** or **Custom Encryption Function**, you must enable **Hide Password Revealer Icon**. Otherwise, the user will see the actual substitute value if the user clicks the Password Revealer icon in the browser.*

9. Select the **Enabled** check box for the **Keylogger Protection** setting.

When this setting is enabled, the system protects against in-browser key loggers.
10. Select the **Enabled** check box for the **Real-Time Encryption** setting.

Real-Time Encryption encrypts input field parameters as the user types them.

Note:

- The **Real-Time Encryption** setting does not appear if you don't have at least one parameter with the **Encrypt** attribute.
 - Real-Time Encryption cannot be enabled if you are also using a custom encryption function on the URL.
-

11. If you do not want to use the default F5 DataSafe JavaScript function for assigning substitute values for HTML password input fields and prefer to use your own JavaScript function, in the **JavaScript Function for Substitute Values** field, type your JavaScript function.

The JavaScript function you type here must return substitute values for all passwords input field parameters where **Substitute Value** is enabled on the parameter. If you leave this field blank, the default F5 DataSafe JavaScript function is used.
12. Click **Save & Close** in the URL Properties screen.
The configuration settings for the URL are saved.

Legal Notices

Legal notices

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