



File Reputation Filtering and File Analysis

This chapter contains the following sections:

- [Overview of File Reputation Filtering and File Analysis](#) , on page 1
- [Configuring File Reputation and Analysis Features](#), on page 4
- [File Reputation and File Analysis Reporting and Tracking](#) , on page 11
- [Taking Action When File Threat Verdicts Change](#) , on page 13
- [Troubleshooting File Reputation and Analysis](#) , on page 14

Overview of File Reputation Filtering and File Analysis

Advanced Malware Protection protects against zero-day and targeted file-based threatsby:

- Obtaining the reputation of known files.
- Analyzing behavior of certain files that are not yet known to the reputation service.
- Continuously evaluating emerging threats as new information becomes available, and notifying you about files that are determined to be threats after they have entered your network.

This feature is available for.

The file reputation service is in the cloud. The file analysis service has options for either public- or private-cloud (on-premises).

- The private-cloud file reputation service is provided by Cisco AMP Virtual Private Cloud appliance, operating in either “proxy” or “air-gap” (on-premises) mode. See [Configuring an On-premises File Reputation Server](#), on page 5.
- The private-cloud file analysis service is provided by an on-premises Cisco AMP Threat Grid appliance. See [Configuring an On-Premises File Analysis Server](#) , on page 5.

File Threat Verdict Updates

Threat verdicts can change as new information emerges. A file may initially be evaluated as unknown or clean, and. If the threat verdict changes as new information becomes available, you will be alerted, and the file and its new verdict appear in the AMP Verdict Updates report. You can investigate the point-of-entry as a starting point to remediating any impacts of the threat.

Verdicts can also change from malicious to clean.

When the appliance processes subsequent instances of the same file, the updated verdict is immediately applied.

Information about the timing of verdict updates is included in the file-criteria document referenced in [Supported Files for File Reputation and Analysis Services](#) , on page 2.

Related Topics

- [File Reputation and File Analysis Reporting and Tracking](#) , on page 11
- [Taking Action When File Threat Verdicts Change](#) , on page 13

File Processing Overview

Communications between the appliance and the file reputation service are encrypted and protected from tampering.

After a file's reputation is evaluated:

- If the file is known to the file reputation service and is determined to be clean, .
- If the file reputation service returns a verdict of malicious, then the appliance applies the action that you have specified .
- If the file is known to the reputation service but there is insufficient information for a definitive verdict, the reputation service returns a score based on characteristics of the file such as threat fingerprint and behavioral analysis. If this score meets or exceeds the configured reputation threshold, the appliance applies the action that you have configured in the policy for .
- If the reputation service has no information about the file, and the file does not meet the criteria for analysis (see [Supported Files for File Reputation and Analysis Services](#) , on page 2), the file is considered clean and .
- For deployments with on-premises file analysis, the reputation evaluation and file analysis occur simultaneously. If the reputation service returns a verdict, that verdict is used, as the reputation service includes inputs from a wider range of sources. If the file is unknown to the reputation service, .
- If the file reputation verdict information is unavailable because the connection with the server timed out, the file is considered as Unscannable and the actions configured are applied.

If the file is sent for analysis:

- If the file is sent to the cloud for analysis: Files are sent over HTTPS.
- Analysis normally takes minutes, but may take longer.
- A file that is flagged as malicious after File Analysis may not be identified as malicious by the reputation service. File reputation is determined by a variety of factors over time, not necessarily by a single file analysis verdict.
- Results for files analyzed using an on premises Cisco AMP Threat Grid appliance are cached locally.

For information about verdict updates, see [File Threat Verdict Updates](#) , on page 1.

Supported Files for File Reputation and Analysis Services

The reputation service evaluates most file types. File type identification is determined by file content and is not dependent on the filename extension.

Some files with unknown reputation can be analyzed for threat characteristics. When you configure the file analysis feature, you choose which file types are analyzed. New types can be added dynamically; you will receive an alert when the list of uploadable file types changes, and can select added file types to upload.

Details about what files are supported by the reputation and analysis services are available only to registered Cisco customers. For information about which files are evaluated and analyzed, see *File Criteria for Advanced Malware Protection Services for Cisco Content Security Products*, available from . The criteria for evaluating a file's reputation and for sending files for analysis may change at any time.

In order to access this document, you must have a Cisco customer account with a support contract. To register, visit <https://tools.cisco.com/RPF/register/register.do>.

You should configure policies to block files that are not addressed by Advanced Malware Protection.

**Note**

A file (either in incoming mail or outgoing mail) that has already been uploaded for analysis from any source will not be uploaded again. To view analysis results for such a file, search for the SHA-256 from the File Analysis reporting page.

Related Topics

- [Enabling and Configuring File Reputation and Analysis Services](#) , on page 6
- [Ensuring That You Receive Alerts About Advanced Malware Protection Issues](#), on page 10
- [Archive or Compressed File Processing](#), on page 3

Archive or Compressed File Processing

If the file is compressed or archived,

- Reputation of the compressed or archive file is evaluated.
- In case of some selective file types, the compressed or archive file is decompressed and reputations of all the extracted files are evaluated.

For information about which archived and compressed files are examined, including file formats, see the information linked from [Supported Files for File Reputation and Analysis Services](#) , on page 2.

In this scenario,

- If one of the extracted files is malicious, the file reputation service returns a verdict of Malicious for the compressed or the archive file.
- If the compressed or archive file is malicious and all the extracted files are clean, the file reputation service returns a verdict of Malicious for the compressed or the archive file.
- If the verdict of any of the extracted files is unknown, the extracted files are optionally (if configured and the file type is supported for file analysis) sent for file analysis.
- If the extraction of a file fails while decompressing a compressed or an archive file, the file reputation service returns a verdict of Unscannable for the compressed or the archive file. Keep in mind that, in this scenario, if one of the extracted files is malicious, the file reputation service returns a verdict of Malicious for the compressed or the archive file (Malicious verdict takes precedence over Unscannable verdict).

**Note**

Reputation of the extracted files with safe MIME types, for example, text/plain, are not evaluated.

Privacy of Information Sent to the Cloud

- Only the SHA that uniquely identifies a file is sent to the reputation service in the cloud. The file itself is not sent.
- If you are using the file analysis service in the cloud and a file qualifies for analysis, the file itself is sent to the cloud.
- Information about every file that is sent to the cloud for analysis and has a verdict of "malicious" is added to the reputation database. This information is used along with other data to determine a reputation score.

Information about files analyzed by an on premises Cisco AMP Threat Grid appliance is not shared with the reputation service.

Configuring File Reputation and Analysis Features

- [Requirements for Communication with File Reputation and Analysis Services](#) , on page 4
- [Configuring an On-premises File Reputation Server](#), on page 5
- [Configuring an On-Premises File Analysis Server](#) , on page 5
- [Enabling and Configuring File Reputation and Analysis Services](#) , on page 6
- [\(Public Cloud File Analysis Services Only\) Configuring Appliance Groups](#) , on page 9
- [Ensuring That You Receive Alerts About Advanced Malware Protection Issues](#), on page 10
- [Configuring Centralized Reporting for Advanced Malware Protection Features](#) , on page 11

Requirements for Communication with File Reputation and Analysis Services

- All that use these services must be able to connect to them directly over the internet (excluding File Analysis services configured to use an on-premises Cisco AMP Threat Grid Appliance.)
- By default, communication with file reputation and analysis services .
- By default, communication with file reputation and cloud-based analysis services is routed through the interface that is associated with the default gateway. To route this traffic through a different interface, create a static route for each address in the Advanced section of the Security Services > File Reputation and Analysis page.
- The following firewall ports must be open:

Firewall Ports	Description	Protocol	In/Out	Hostname	Appliance Interface
32137 (default) or 443	Access to cloud services for obtaining file reputation.	TCP	Out	As configured in Security Services > Anti-Malware and Reputation, Advanced section, Cloud Server Pool parameter.	Management, unless a static route is configured to route this traffic through a data port.
443	Access to cloud services for file analysis.	TCP	Out	As configured in Security Services > Anti-Malware and Reputation, Advanced section.	

Configuring an On-premises File Reputation Server

If you will use a Cisco AMP Virtual Private Cloud appliance as a private-cloud file analysis server:

- You can obtain the Cisco Advanced Malware Protection Virtual Private Cloud Appliance documentation, including the Installation and Configuration of FireAMP Private Cloud guide, from <http://www.cisco.com/c/en/us/support/security/fireamp-private-cloud-virtual-appliance/tsd-products-support-series-home.html>

Use that documentation to perform the tasks described in this topic.

Additional documentation is available using the Help link in the AMP Virtual Private Cloud appliance.

- Set up and configure the Cisco AMP Virtual Private Cloud appliance in either “proxy” or “air-gap” (on-premises) mode.
- Ensure the Cisco AMP Virtual Private Cloud appliance software version is 2.2, which enables integration with Cisco .
- Download the AMP Virtual Private Cloud certificate and keys on that appliance for upload to this

**Note**

After you have set up the on-premises file-reputation server, you will configure connection to it from this ; see Step 6 of [Enabling and Configuring File Reputation and Analysis Services](#) , on page 6

Configuring an On-Premises File Analysis Server

If you will use a Cisco AMP Threat Grid Appliance as a private-cloud file analysis server:

- Obtain the Cisco AMP Threat Grid Appliance Setup and Configuration Guide and the Cisco AMP Threat Grid Appliance Administration Guide. Cisco AMP Threat Grid Appliance documentation is available from <http://www.cisco.com/c/en/us/support/security/amp-threat-grid-appliances/products-installation-guides%20list.html>.

Use this documentation to perform the tasks described in this topic.

Additional documentation is available from the Help link in the AMP Threat Grid appliance.

In the Administration Guide, search for information about all of the following: integrations with other Cisco appliances, CSA, Cisco Sandbox API .

- Set up and configure the Cisco AMP Threat Grid Appliance.
- If necessary, update your Cisco AMP Threat Grid Appliance software to version 1.2.1, which supports integration with Cisco.

See the AMP Threat Grid documentation for instructions for determining the version number and for performing the update.

- Ensure that your appliances can communicate with each other over your network. Cisco must be able to connect to the CLEAN interface of the AMP Threat Grid appliance.
- If you will deploy a self-signed certificate: Generate a self-signed SSL certificate from the Cisco AMP Threat Grid appliance to be used on your . See instructions for downloading SSL certificates and keys in the administrator’s guide for your AMP Threat Grid appliance. Be sure to generate a certificate that has the hostname of your AMP Threat Grid appliance as CN. The default certificate from the AMP Threat Grid appliance does NOT work.

- Registration of your with your Threat Grid appliance occurs automatically when you submit the configuration for File Analysis, as described in [Enabling and Configuring File Reputation and Analysis Services](#) , on page 6. However, you must activate the registration as described in the same procedure.



Note After you have set up the on-premises file-analysis server, you will configure connection to it from this Web Security appliance; see Step 7 of [Enabling and Configuring File Reputation and Analysis Services](#) , on page 6

Enabling and Configuring File Reputation and Analysis Services

Before you begin

- Acquire feature keys for the file reputation service and the file analysis service and transfer them to this appliance.
- Meet the [Requirements for Communication with File Reputation and Analysis Services](#) , on page 4.
- Ensure that a Data network interface is enabled on the appliance if you want to use a Data network interface for File Reputation and Analysis services. See [Enabling or Changing Network Interfaces](#)
- Verify connectivity to the update servers configured .
- If you will use a Cisco AMP Virtual Private Cloud Appliance as a private cloud file reputation server, see [Configuring an On-premises File Reputation Server](#), on page 5.
- If you will use a Cisco AMP Threat Grid Appliance as a private cloud file analysis server, see [Configuring an On-Premises File Analysis Server](#) , on page 5.

Step 1 Select **Security Services > Anti-Malware and Reputation**.

Step 2 Click **Edit Global Settings**.

Step 3 Click **Enable File Reputation Filtering** and optionally **Enable File Analysis**.

- If **Enable File Reputation Filtering** is checked, you must configure the section **File Reputation Server** (in **Step 6**), by either choosing the URL of an external public-reputation cloud server, or by providing the Private reputation cloud server connection information.
- Similarly, if **Enable File Analysis** is checked, you must configure the section **File Analysis Server URL** (in **Step 7**), providing either the URL of an external cloud server, or the Private analysis cloud connection information.

Step 4 Accept the license agreement if presented.

Step 5 Expand the **Advanced Settings for File Reputation** panel and adjust the following options as needed:

Option	Description
Cloud Domain	The name of the domain to be used for file reputation queries.

Option	Description
File Reputation Server	<p>Choose either: the host name of the public reputation cloud server, or Private reputation cloud.</p> <p>If you choose Private reputation cloud, provide the following:</p> <ul style="list-style-type: none"> • Server – The host name or IP address of the Cisco AMP Virtual Private Cloud appliance. • Public Key – Provide a valid public key for encrypted communications between this appliance and your private cloud appliance. This must be the same key used by the private cloud server: locate the key file on this appliance, and then click Upload File. <p>Note You must have already downloaded the key file from the server to this appliance.</p>
Routing Table	<p>The routing table (associated with an appliance network interface type, either Management or Data) to be used for Advanced Malware Protection services. If the appliance has both the Management interface and one or more Data interfaces enabled, you can select Management or Data.</p>
SSL Communication for File Reputation	<p>Check Use SSL (Port 443) to communicate on port 443 instead of the default port, 32137. Refer to the Cisco AMP Virtual Private Cloud Appliance user guide for information about enabling SSH access to the server.</p> <p>Note SSL communication over port 32137 may require you to open that port in your firewall.</p> <p>This option also allows you to configure an upstream proxy for communication with the file reputation service. If checked, provide the appropriate Server, Username and Passphrase information.</p> <p>When Use SSL (Port 443) is selected, you can also check Relax Certificate Validation to skip standard certificate validation if the tunnel proxy server's certificate is not signed by a trusted root authority. For instance, select this option if using a self-signed certificate on a trusted internal tunnel proxy server.</p> <p>Note If you checked Use SSL (Port 443) in the SSL Communication for File Reputation section of the Advanced Settings for File Reputation, you must add the AMP on-premises reputation server CA certificate to the certificate store on this appliance, using Network > Certificates (Custom Certificate Authorities) in the Web interface. Obtain this certificate from the server (Configuration > SSL > Cloud server > download).</p>
Heartbeat Interval	<p>The frequency, in minutes, with which to ping for retrospective events.</p>
Reputation Threshold	<p>The upper limit for acceptable file reputation scores. Scores above this threshold indicate the file is infected.</p> <ul style="list-style-type: none"> • Use value from Cloud Service (60) • Enter Custom Value – defaults to 60.
Query Timeout	<p>The number of elapsed seconds before the reputation query times out.</p>

Option	Description
Processing Timeout	The number of elapsed seconds before the file processing times out.
File Reputation Client ID	The client ID for this appliance on the File Reputation server (read-only).

Note Do not change any other settings in this section without guidance from Cisco support.

Step 6 If you will use the cloud service for file analysis, expand the Advanced Settings for File Analysis panel and adjust the following options as needed:

Option	Description
File Analysis Server URL	<p>Choose either: the name (URL) of an external cloud server, or Private analysis cloud.</p> <p>If specifying an external cloud server, choose the server that is physically nearest to your appliance. Newly available servers will be added to this list periodically using standard update processes.</p> <p>Choose Private analysis cloud to use an on-premises Cisco AMP Threat Grid appliance for file analysis, and provide the following:</p> <ul style="list-style-type: none"> • Server – The URL of the on-premises private analysis cloud server. • Certificate Authority – Choose either Use Cisco Default Certificate Authority, or Use Uploaded Certificate Authority. <p>If you choose Use Uploaded Certificate Authority, click Browse to upload a valid certificate file for encrypted communications between this appliance and your private cloud appliance. This must be the same certificate used by the private cloud server.</p>
Proxy Settings	<p>Check Use File Reputation Proxy checkbox to use the same File Reputation tunnel proxy that you have already configured, as an upstream proxy for file analysis.</p> <p>If you want to configure a different upstream proxy, uncheck the Use File Reputation Proxy checkbox and enter the appropriate Server, Port, Username, and Passphrase information.</p>
File Analysis Client ID	The client ID for this appliance on the File Analysis server (read-only).

Step 7 (Optional) Expand the Cache Settings panel, if you want to configure the cache expiry period for File Reputation disposition values.

Step 8 Submit and commit your changes.

Step 9 If you are using an on-premises Cisco AMP Threat Grid appliance, activate the account for this appliance on the AMP Threat Grid appliance.

Complete instructions for activating the “user” account are available in the AMP Threat Grid documentation.

- Note the File Analysis Client ID that appears at the bottom of the page section. This identifies the “user” that you will activate.
- Sign in to the AMP Threat Grid appliance.
- Select **Welcome... > Manage Users** and navigate to User Details.
- Locate the “user” account based on the File Analysis Client ID of your.

- e) Activate this “user” account for your appliance.

Important! Changes Needed in File Analysis Setting

If you plan to use a new public cloud File Analysis service, make sure you read the following instructions to maintain datacenter isolation:

- The existing appliance grouping information is not preserved in the new File Analysis server. You must regroup your appliances on the new File Analysis server.
- Messages that are quarantined to the File Analysis Quarantine are retained until the retention period. After the quarantine retention period, the messages are released from the File Analysis Quarantine, and re-scanned by the AMP engine. The file is then uploaded to the new File Analysis server for analysis but the message is not sent to the File Analysis Quarantine again.

For more details, refer to the Cisco AMP Thread Grid documentation from

<http://www.cisco.com/c/en/us/support/security/amp-threat-grid-appliances/products-installation-guides-list.html>.

(Public Cloud File Analysis Services Only) Configuring Appliance Groups

In order to allow all content security appliances in your organization to view file analysis result details in the cloud for files sent for analysis from any appliance in your organization, you need to join all appliances to the same appliance group.



Note You can configure appliance groups at the machine level. The appliance groups cannot be configured at the cluster level.

Step 1 Select **Security Services** > .

Step 2 In the Appliance Grouping for File Analysis Cloud Reporting section, enter the File Analysis Group ID.

- If this is the first appliance being added to the group, provide a useful identifier for the group.
- This ID is case-sensitive, and cannot contain spaces.
- The ID you provide must be identical on all appliances that will share data about files that are uploaded for analysis. However, the ID is not validated on subsequent group appliances.
- If you enter the Group ID incorrectly or need to change it for any other reason, you must open a case with Cisco TAC.
- This change takes effect immediately; it does not require a Commit.
- All appliances in the group must be configured to use the same File Analysis server in the cloud.
- An appliance can belong to only one group.
- You can add a machine to a group at any time, but you can do it only once.

Step 3 Click .

Which Appliances Are In the Analysis Group?

Step 1 Select **Security Services**> .

Step 2 In the Appliance Grouping for File Analysis Cloud Reporting section, click .

Step 3 To view the **File Analysis Client ID** of a particular appliance, look in the following location:

Appliance	Location of File Analysis Client ID
Email Security appliance	Advanced Settings for File Analysis section on the Security Services > File Reputation and Analysis page.
Web Security appliance	Advanced Settings for File Analysis section on the Security Services > Anti-Malware and Reputation page.
Security Management appliance	At the bottom of the Management Appliance > Centralized Services > Security Appliances page.

Ensuring That You Receive Alerts About Advanced Malware Protection Issues

Ensure that the appliance is configured to send you alerts related to Advanced Malware Protection.

You will receive alerts when:

Alert Description	Type	Severity
You are setting up a connection to an on-premises (private cloud) Cisco AMP Threat Grid appliance and you need to activate the account as described in Enabling and Configuring File Reputation and Analysis Services , on page 6	Anti-Malware	Warning
Feature keys expire	(As is standard for all features)	
The file reputation or file analysis service is unreachable.		Warning
Communication with cloud services is established.		Info
		Info
A file reputation verdict changes.		Info
File types that can be sent for analysis have changed. You may want to enable upload of new file types.		Info
Analysis of some file types is temporarily unavailable.		Warning

Alert Description	Type	Severity
Analysis of all supported file types is restored after a temporary outage.		Info

Related Topics

- [Several Alerts About Failure to Connect to File Reputation or File Analysis Servers](#) , on page 14
- [Taking Action When File Threat Verdicts Change](#) , on page 13

Configuring Centralized Reporting for Advanced Malware Protection Features

If you will centralize reporting on a Security Management appliance, see important configuration requirements in the Advanced Malware Protection sections in the reporting chapter of the online help or user guide for your management appliance.

File Reputation and File Analysis Reporting and Tracking

- [Identifying Files by SHA-256 Hash](#) , on page 11
- [File Reputation and File Analysis Report Pages](#) , on page 12
- [Viewing File Reputation Filtering Data in Other Reports](#) , on page 13
- [About Tracking and Advanced Malware Protection Features](#) , on page 13

Identifying Files by SHA-256 Hash

Because filenames can easily be changed, the appliance generates an identifier for each file using a Secure Hash Algorithm (SHA-256). If an appliance processes the same file with different names, all instances are recognized as the same SHA-256. If multiple appliances process the same file, all instances of the file have the same SHA-256 identifier.

In most reports, files are listed by their SHA-256 value (in an abbreviated format

File Reputation and File Analysis Report Pages

Report	Description
Advanced Malware Protection	<p>Shows file-based threats that were identified by the file reputation service.</p> <p>For files with changed verdicts, see the AMP Verdict updates report. Those verdicts are not reflected in the Advanced Malware Protection report.</p> <p>Note If one of the extracted files from a compressed or an archive file is malicious, only SHA value of the compressed or archive file is included in the Advanced Malware Protection report.</p> <p>The Malware Files by Category section shows the percentage of blacklisted file SHAs received from the AMP for Endpoints console that are categorised as Custom Detection.</p> <p>The threat name of a blacklisted file SHA obtained from AMP for Endpoints console is displayed as Simple Custom Detection in the Malware Threat Files section of the report.</p> <p>To view the file trajectory details of a blacklisted file SHA in the AMP for Endpoints console, perform the following steps:</p> <ol style="list-style-type: none"> 1. Choose Reporting > Advanced Malware Protection. 2. Click on the file SHA link for which you want to view the trajectory details. 3. Click on the AMP Console link in the More Details section.
Advanced Malware Protection File Analysis	<p>Displays the time and verdict (or interim verdict) for each file sent for analysis.</p> <p>Files that are whitelisted on the Cisco AMP Threat Grid appliance show as “clean.” For information about whitelisting, see the AMP Threat Grid online help.</p> <p>To view more than 1000 File Analysis results, export the data as a .csv file.</p> <p>Drill down to view detailed analysis results, including the threat characteristics and score for each file.</p> <p>You can also view additional details about an SHA directly on the AMP Threat Grid appliance or cloud server that performed the analysis by searching for the SHA or by clicking the Cisco AMP Threat Grid link at the bottom of the file analysis details page.</p> <p>Note If extracted files from a compressed or an archive file are sent for file analysis, only SHA values of these extracted files are included in the File Analysis report.</p>
Advanced Malware Protection Verdict Updates	<p>Lists the files processed by this appliance for which the verdict has changed since the. For information about this situation, see File Threat Verdict Updates, on page 1.</p> <p>To view more than 1000 verdict updates, export the data as a .csv file.</p> <p>In the case of multiple verdict changes for a single SHA-256, this report shows only the latest verdict, not the verdict history.</p> <p>Clicking a SHA-256 link displays</p> <p>To view all affected for a particular SHA-256 within the maximum available time range (regardless of the time range selected for the report) click.</p>

Viewing File Reputation Filtering Data in Other Reports

Data for file reputation and analysis is available in other reports where relevant. A "Advanced Malware Protection" column may be hidden by default in applicable reports. To display additional columns, click the Columns link below the table.

About Tracking and Advanced Malware Protection Features

When searching for file threat information in Tracking, keep the following points in mind:

- To search for malicious files found by the file reputation service, select in the Advanced section in Web Message Tracking.
- Tracking includes only information about file reputation processing and the original file reputation verdicts returned at the time a transaction message was processed. For example, if a file was initially found to be clean, then a verdict update found the file to be malicious, only the clean verdict appears in Tracking results.
- Verdict updates are available only in the AMP Verdict Updates report. The original details in Tracking are not updated with verdict changes. To see transactions, click a SHA-256 in the verdict updates report.
- Information about File Analysis, including analysis results and whether or not a file was sent for analysis, are available only in the File Analysis report.

Additional information about an analyzed file may be available from the cloud or on-premises File Analysis server. To view any available File Analysis information for a file, select **Reporting > File Analysis** and enter the SHA-256 to search for the file. If the File Analysis service has analyzed the file from any source, you can see the details. Results are displayed only for files that have been analyzed.

If the appliance processed a subsequent instance of a file that was sent for analysis, those instances will appear in Tracking search results.

Taking Action When File Threat Verdicts Change

-
- | | |
|---------------|---|
| Step 1 | View the AMP Verdict Updates report. |
| Step 2 | Click the relevant SHA-256 link to view tracking data for all that file that. |
| Step 3 | Using the tracking data, identify the users that may have been compromised, as well as information such as the file names involved in the breach and. |
| Step 4 | Check the File Analysis report to see if this SHA-256 was sent for analysis, to understand the threat behavior of the file in more detail. |
-

What to do next

Related Topics

[File Threat Verdict Updates](#), on page 1

Troubleshooting File Reputation and Analysis

- [Log Files](#) , on page 14
- [Several Alerts About Failure to Connect to File Reputation or File Analysis Servers](#) , on page 14
- [API Key Error \(On-Premises File Analysis\)](#) , on page 14
- [Files are Not Uploaded As Expected](#) , on page 15
- [Alerts about File Types That Can Be Sent for Analysis](#) , on page 15

Log Files

In logs:

- `AMP` and `amp` refer to the file reputation service or engine.
- `Retrospective` refers to verdict updates.
- `VRT` and `sandboxing` refer to the file analysis service.

Information about Advanced Malware Protection including File Analysis is logged in AMP Engine Logs.

In the log message “Response received for file reputation query” possible values for “upload action” are:

- 0: The file is known to the reputation service; do not send for analysis.
- 1: Send
- 2: The file is known to the reputation service; do not send for analysis.

Several Alerts About Failure to Connect to File Reputation or File Analysis Servers

Problem

You receive several alerts about failures to connect to the file reputation or analysis services in the cloud. (A single alert may indicate only a transient issue.)

Solution

- Ensure that you have met the requirements in [Requirements for Communication with File Reputation and Analysis Services](#) , on page 4.
- Check for network issues that may prevent the appliance from communicating with the cloud services.
- Increase the Query Timeout value:

Select **Security Services** > . The Query Timeout value is in the Advanced settings area .

API Key Error (On-Premises File Analysis)

Problem

You receive an API key alert when attempting to view File Analysis report details, or the is unable to connect to the AMP Threat Grid server to upload files for analysis.

Solution

This error can occur if you change the hostname of the AMP Threat Grid server and you are using a self-signed certificate from the AMP Threat Grid server, as well as possibly under other circumstances. To resolve the issue:

- Generate a new certificate from the AMP Threat Grid appliance that has the new hostname.
- Upload the new certificate to the.
- Reset the API key on the AMP Threat Grid appliance. For instructions, see the online help on the AMP Threat Grid appliance.

Related Topics

- [Enabling and Configuring File Reputation and Analysis Services](#) , on page 6

Files are Not Uploaded As Expected

Problem

Files are not evaluated or analyzed as expected. There is no alert or obvious error.

Solution

Consider the following:

- The file may have been sent for analysis by another appliance and thus already be present on the File Analysis server or in the cache of the appliance that is processing the file.

Alerts about File Types That Can Be Sent for Analysis

Problem

You receive alerts of severity Info about file types that can be sent for file analysis.

Solution

This alert is sent when supported file types change, or when the appliance checks to see what file types are supported. This can occur when:

- You or another administrator changes the file types selected for analysis.
- Supported file types change temporarily based on availability in the cloud service. In this case, support for the file types selected on the appliance will be restored as soon as possible. Both processes are dynamic and do not require any action from you.
- The appliance restarts, for example as part of an AsyncOS upgrade.

