Best Practices:
Enabling AMP on Content Security Products (ESA/WSA)

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CONTENT SECURITY – AMP BEST PRACTICES

Overview:

The vast majority of threats, attacks and nuisances faced by an organization often come through email in the form of spam, malware and blended attacks, as well as via normal every day web browsing.

Cisco's Email Security Appliances and Web Security Appliances include several different technologies and features to cut these threats off at the gateway, *before* they enter the organization, and this document will describe the best practice approaches to configuring our Advanced Malware Protection (AMP) feature.

Advanced Malware Protection – AMP is provided to detect and act upon known, unknown, zero day or targeted attacks. AMP on Content Security products includes a File Reputation SHA lookup, automated cloud sandboxing of files powered by Threat Grid, and retrospective alerting and detection of changes in the threat level of a file after it has left the email chain, or after the file is downloaded to the end user's workstation. The File Reputation and File Analysis Criteria for AMP for Cisco Content Security Products can be found here.

This guide covers configuration and best practices on both the ESA and WSA products for the Public Cloud AMP and Public Cloud Threat Grid, along with general tips and information towards the end of the document.

CONFIGURING AMP ON EMAIL SECURITY APPLIANCE (ESA)

Email Security Appliance (ESA) Code Requirements:

- **Minimum ESA Version 9.7.2-065**
- **Current Recommendation v10.0.1-087**

Security Management Appliance (SMA) Code Requirements:

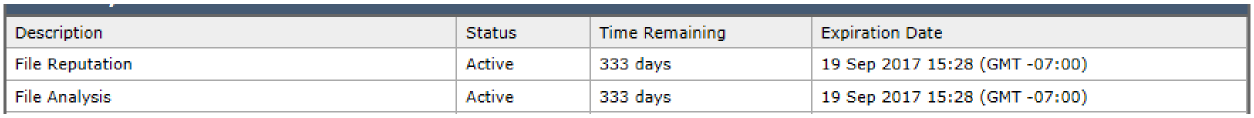
- **Minimum SMA Version 10.0.0-055**
- **Current Recommendation v10.1.0-037**

Cisco has supported AMP on ESA releases since v8.5.5, however there has been significant reporting and functionality enhancements since the original release. Customers are strongly recommended to follow the above recommendations for an optimal experience.

When using a SMA for centralized reporting and message tracking, ensure the appropriately paired SMA release for the ESA release. You may reference the compatibility matrix here. Generically it can be said to always keep the SMA on the latest GA code, and always update the SMA prior to a WSA or ESA reporting into it.

Confirming Advanced Malware Protection (AMP) Licensing

Confirm you have the appropriate licensing by navigating to *System Administration > Feature Keys*. You will need to have the File Reputation and File Analysis Keys listed and Active. If the status says Dormant, this just means the EULA needs to be accepted and the feature enabled.



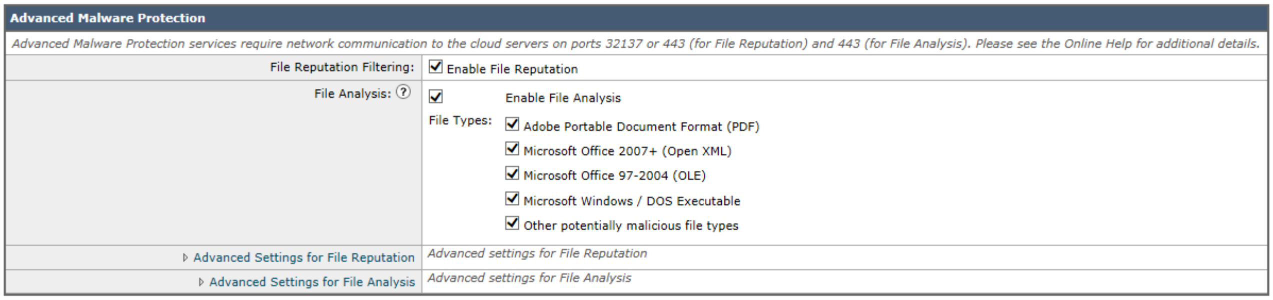
Description	Status	Time Remaining	Expiration Date
File Reputation	Active	333 days	19 Sep 2017 15:28 (GMT -07:00)
File Analysis	Active	333 days	19 Sep 2017 15:28 (GMT -07:00)

Configuring Advanced Malware Protection (AMP)

Once the keys are confirmed, navigate to *Security Services > File Reputation and Analysis*

Under “Advanced Malware Protection,” click “Edit the Global Settings”

You will want to Enable File Reputation, and Enable File Analysis. Cisco recommends enabling file analysis for all File Types.

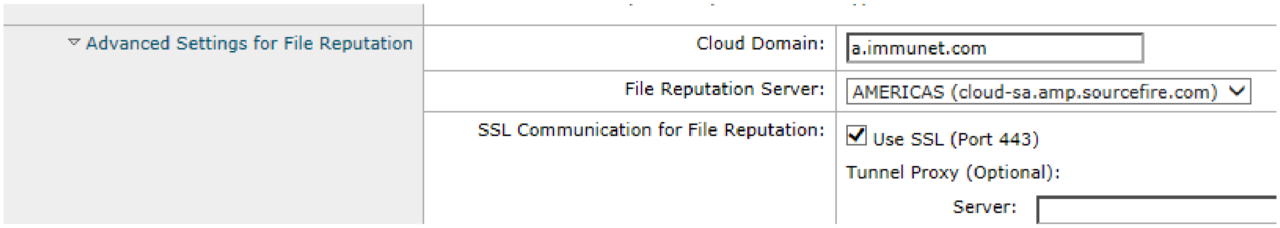


Advanced Malware Protection

Advanced Malware Protection services require network communication to the cloud servers on ports 32137 or 443 (for File Reputation) and 443 (for File Analysis). Please see the Online Help for additional details.

File Reputation Filtering:	☑ Enable File Reputation
File Analysis: ?	☑ Enable File Analysis File Types: ☑ Adobe Portable Document Format (PDF) ☑ Microsoft Office 2007+ (Open XML) ☑ Microsoft Office 97-2004 (OLE) ☑ Microsoft Windows / DOS Executable ☑ Other potentially malicious file types
▹ Advanced Settings for File Reputation	*Advanced settings for File Reputation*
▹ Advanced Settings for File Analysis	*Advanced settings for File Analysis*

By default, File Reputation communicates on port tcp/32137. As many customer environments do not have this port open, it may be required check the "Use SSL" checkbox under *Advanced Settings for File Reputation.* This will ensure communication over tcp/443, which is more commonly permitted. Additionally, you can configure the File Reputation query over a proxy in this same configuration area.



▿ Advanced Settings for File Reputation

Cloud Domain:	a.immunet.com
File Reputation Server:	AMERICAS (cloud-sa.amp.sourcefire.com)
SSL Communication for File Reputation:	☑ Use SSL (Port 443) Tunnel Proxy (Optional): Server:

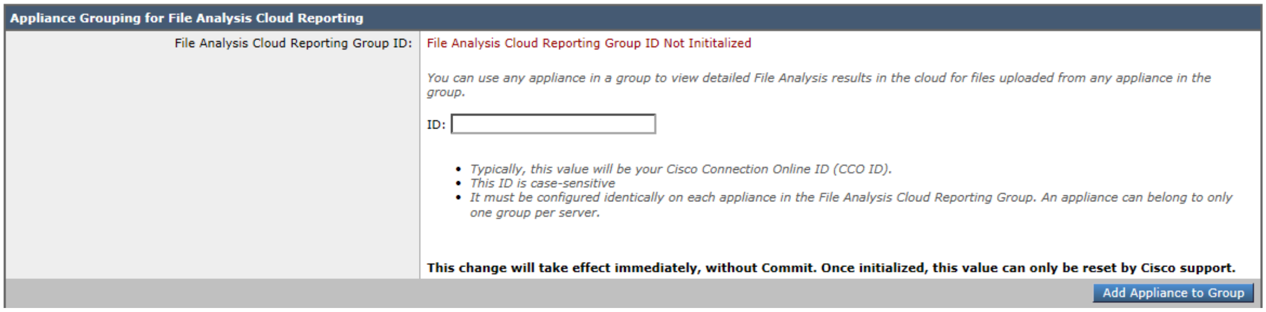
The final configuration item would be to ensure all of the ESA devices are configured with the same Reporting Group ID. This permits a SMA to review all the File Analysis reports for all of the ESA's sending files for File Analysis. Without this, you can only access the File Analysis reports via the ESA that submitted the file.

It is recommended to use an ID like COMPANYNAME-AMP. Despite the value recommendation in the GUI of a CCO ID, this is not an optimal item to use. If your organization already utilizes Threat Grid, and have access to use panacea.threatgrid.com, the naming should be based on the Organization name from panacea.threatgrid.com. This is found from looking at the User > My Account option on the Threat Grid portal. ***It is critical that every ESA has the same value in this space and that this matches what is configured on the SMA.***

In the event your organization has purchased a Threat Grid Premium subscription, you are able to tie the samples from your ESA/SMA to this account. This can be achieved by opening a case with Threat Grid support (support@threatgrid.com) and providing the Device IDs and Serial Numbers (or VLN) of your ESA/SMA architecture. More information can be found here. Please take note to understand that if using a virtual ESA (ESAv), that the VLN is part of the ID used for the integration with the full Threat Grid subscription. If the VLN license file changes and the VLN changes, this needs to be updated with Threat Grid support.

Configuration on ESA: *Security Services > File Reputation and Analysis.* **Note:** It is critical to do this configuration at the machine level, not the cluster level.

Configuration on SMA: *Management Appliance > Centralized Services > Security Appliances*



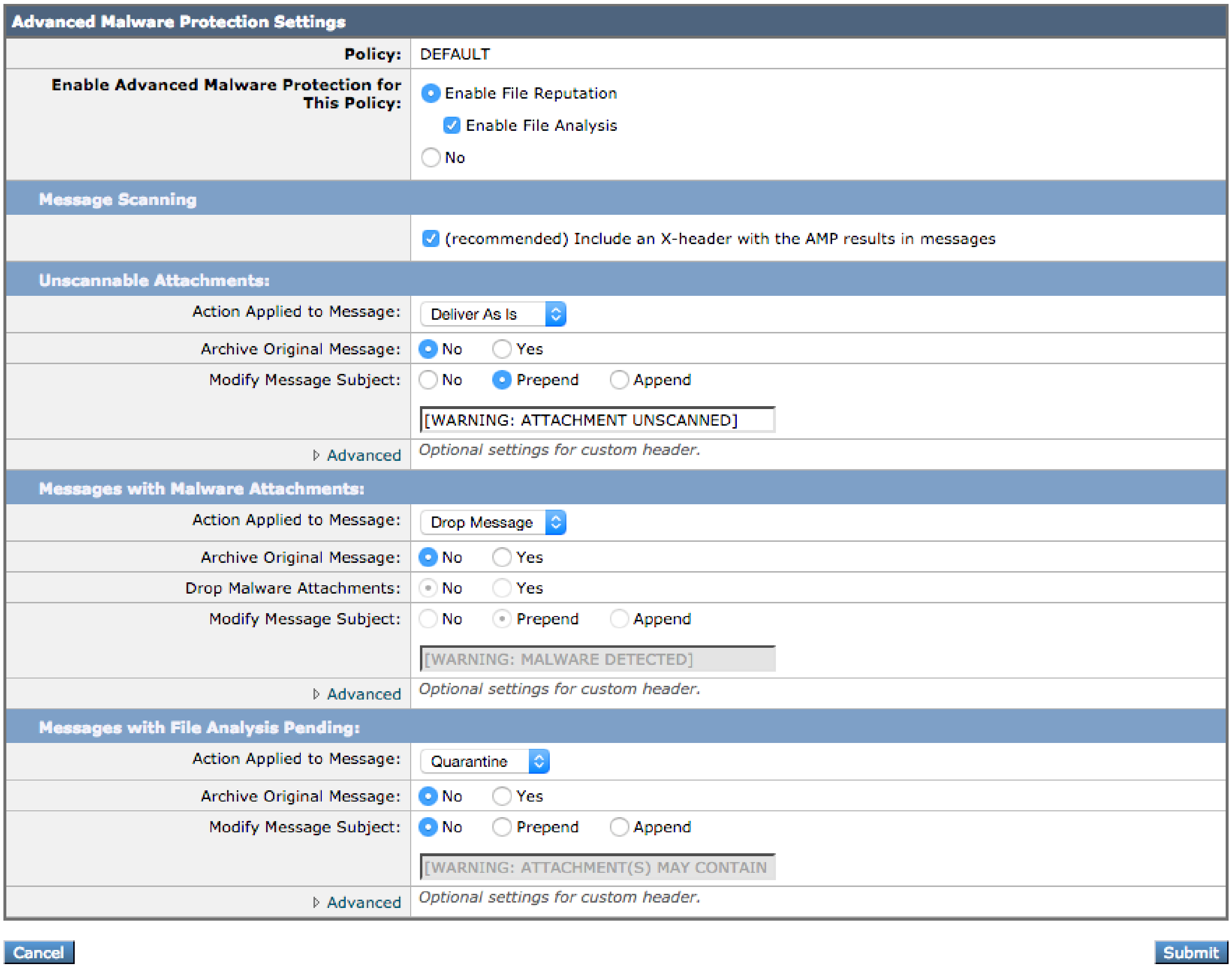
Appliance Grouping for File Analysis Cloud Reporting

File Analysis Cloud Reporting Group ID:	File Analysis Cloud Reporting Group ID Not Inititalized *You can use any appliance in a group to view detailed File Analysis results in the cloud for files uploaded from any appliance in the group.* ID: ____ • *Typically, this value will be your Cisco Connection Online ID (CCO ID).* • *This ID is case-sensitive* • *It must be configured identically on each appliance in the File Analysis Cloud Reporting Group. An appliance can belong to only one group per server.* **This change will take effect immediately, without Commit. Once initialized, this value can only be reset by Cisco support.**

Once the above items are completed. Click Submit at the bottom of the screen, then Commit the changes.

The AMP configuration is now complete on the Email Security Appliance. Now, we must enable AMP services for the Incoming Mail flow. Note that AMP is not available for Outgoing Mail Policies.

Navigate to *Mail Policies > Incoming Mail Policies.* For the Incoming Mail Policy, the following settings are recommended.



Advanced Malware Protection Settings

Policy:	DEFAULT
Enable Advanced Malware Protection for This Policy:	● Enable File Reputation ☑ Enable File Analysis ○ No
Message Scanning	
	☑ (recommended) Include an X-header with the AMP results in messages
Unscannable Attachments:	
Action Applied to Message:	Deliver As Is
Archive Original Message:	● No ○ Yes
Modify Message Subject:	○ No ● Prepend ○ Append [WARNING: ATTACHMENT UNSCANNED]
Advanced	*Optional settings for custom header.*
Messages with Malware Attachments:	
Action Applied to Message:	Drop Message
Archive Original Message:	● No ○ Yes
Drop Malware Attachments:	● No ○ Yes
Modify Message Subject:	○ No ● Prepend ○ Append [WARNING: MALWARE DETECTED]
Advanced	*Optional settings for custom header.*
Messages with File Analysis Pending:	
Action Applied to Message:	Quarantine
Archive Original Message:	● No ○ Yes
Modify Message Subject:	● No ○ Prepend ○ Append [WARNING: ATTACHMENT(S) MAY CONTAIN
Advanced	*Optional settings for custom header.*

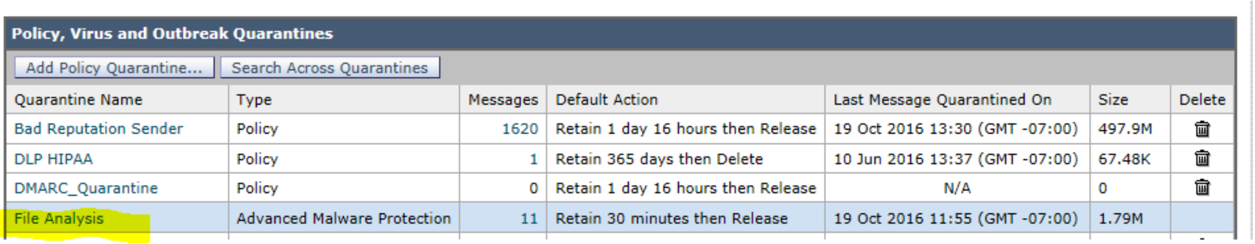
Incoming emails with a file attachment will be first checked with the File Reputation Services of AMP. The SHA256 hash for the file is queried to the AMP cloud. If the file is known “malicious” – the configuration section “Messages with Malware Attachments” [above] will be followed. The configuration above will have any email with a known malware attachment dropped.

In the event the File Reputation services determines the file is ‘unknown file,’ the ESA will determine of the file is a supported file type for File Analysis. Keep in mind that while File Reputation supports most file types for SHA lookup, File Analysis has a smaller subset of supported file types. If the file is a supported file type for File Analysis, and if the pre-classification engine on the ESA determines the file is one that could have malicious content, that file is sent to the cloud for File Analysis, and the configuration under “Messages with File Analysis Pending” [above] will be followed. The configuration above will have emails with files Pending Analysis be Quarantined based on the quarantine settings.

File Analysis quarantine settings are configured under:

Monitor > Policy, Virus and Outbreak Quarantines if on an ESA, and when using centralized quarantines on an SMA, under the Email Tab, then *Message Quarantine > Policy, Virus and Outbreak Quarantines*. Configuration of the File Analysis Quarantine is the same on either an ESA or SMA.

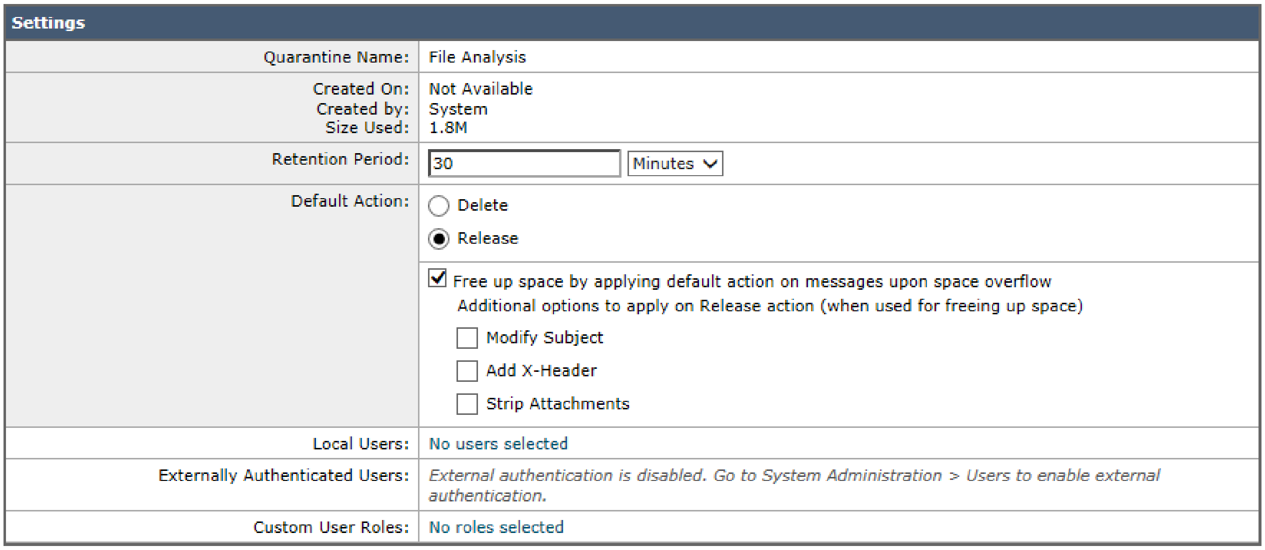
Click on the “File Analysis” Quarantine.



Policy, Virus and Outbreak Quarantines

Quarantine Name	Type	Messages	Default Action	Last Message Quarantined On	Size	Delete
Bad Reputation Sender	Policy	1620	Retain 1 day 16 hours then Release	19 Oct 2016 13:30 (GMT -07:00)	497.9M	🗑
DLP HIPAA	Policy	1	Retain 365 days then Delete	10 Jun 2016 13:37 (GMT -07:00)	67.48K	🗑
DMARC_Quarantine	Policy	0	Retain 1 day 16 hours then Release	N/A	0	🗑
File Analysis	Advanced Malware Protection	11	Retain 30 minutes then Release	19 Oct 2016 11:55 (GMT -07:00)	1.79M	

Cisco’s default Retention period is 1 hour, with a **minimum recommended** value of 30 minutes. Configuration is **<u>not recommended</u>** any shorter than 30 minutes. Once this time has expired, the Default Action will take please – either Delete or Release. The recommendation here is Release. If a customer chooses Delete, it is strongly recommended to consider a longer Retention period.



Settings

Quarantine Name:	File Analysis
Created On: Created by: Size Used:	Not Available System 1.8M
Retention Period:	30 Minutes
Default Action:	○ Delete ● Release ☑ Free up space by applying default action on messages upon space overflow Additional options to apply on Release action (when used for freeing up space) □ Modify Subject □ Add X-Header □ Strip Attachments
Local Users:	No users selected
Externally Authenticated Users:	*External authentication is disabled. Go to System Administration > Users to enable external authentication.*
Custom User Roles:	No roles selected

Configuring AMP on Web Security Appliance (WSA)

Web Security Appliance Code Requirements:

- **Minimum WSA Version v9.1.1-074**
- **Current Recommendation v9.1.1-074**

Security Management Appliance (SMA) Code Requirements:

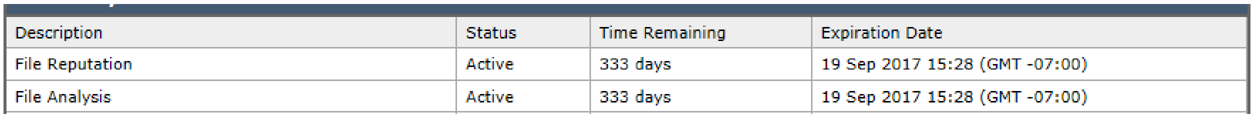
- **Minimum SMA Version 10.0.0-055**
- **Current Recommendation v10.1.0-037**

Cisco has supported AMP on WSA releases since v8.0.5, however there has been significant reporting and functionality enhancements since the original release. Customers are strongly recommended to follow the above recommendations for an optimal experience.

When using a SMA for centralized reporting and message tracking, ensure the appropriately paired SMA release for the WSA release. You may reference the compatibility matrix here. Generically it can be said to always keep the SMA on the latest GA code, and always update the SMA prior to a WSA or ESA reporting into it.

Confirming Advanced Malware Protection (AMP) Licensing

Confirm you have the appropriate licensing by navigating to *System Administration > Feature Keys*. You will need to have the File Reputation and File Analysis Keys listed and Active. If the status says Dormant, this just means the EULA needs to be accepted and the feature enabled.



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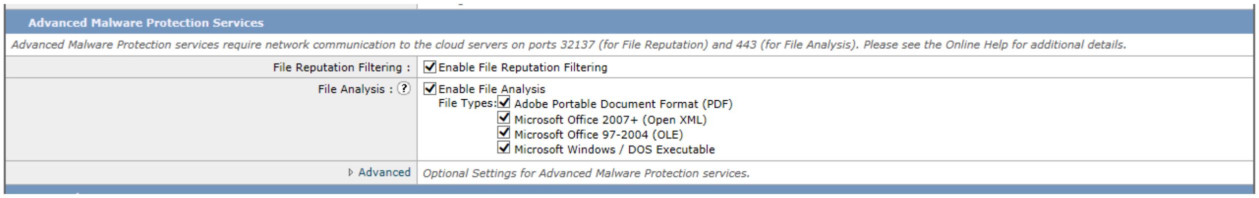
Configuring Advanced Malware Protection (AMP)

Next, navigate to *Security Services > Anti-Malware and Reputation* in order to configure AMP.

Under "Advanced Malware Protection," click "Edit the Global Settings"

You will want to Enable File Reputation, and Enable File Analysis. Cisco recommends enabling file analysis for all File Types.

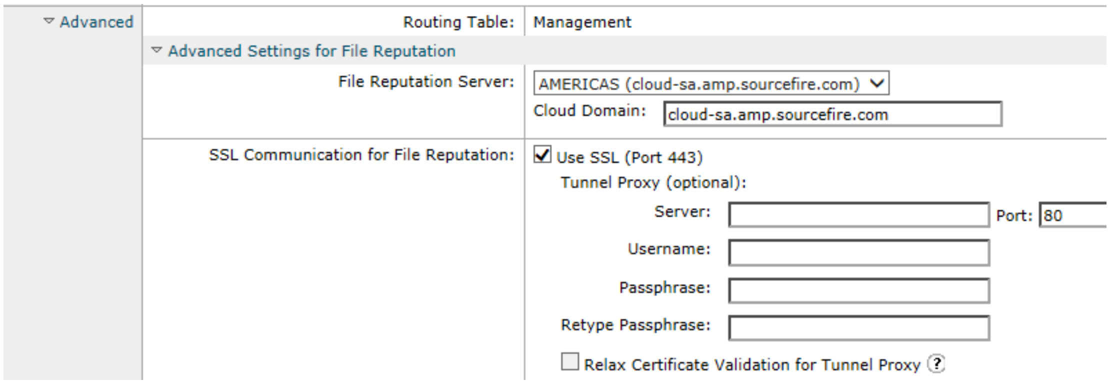


Advanced Malware Protection Services

Advanced Malware Protection services require network communication to the cloud servers on ports 32137 (for File Reputation) and 443 (for File Analysis). Please see the Online Help for additional details.

File Reputation Filtering :	☑ Enable File Reputation Filtering
File Analysis : ?	☑ Enable File Analysis File Types: ☑ Adobe Portable Document Format (PDF) ☑ Microsoft Office 2007+ (Open XML) ☑ Microsoft Office 97-2004 (OLE) ☑ Microsoft Windows / DOS Executable
▹ Advanced	*Optional Settings for Advanced Malware Protection services.*

By default, File Reputation communicates on port tcp/32137. As many customer environments do not have this port open, it may be required to check the "Use SSL" checkbox under *Advanced Settings for File Reputation.* This will ensure communication over tcp/443, which is more commonly permitted. Additionally, you can configure the File Reputation query over a proxy in this same configuration area.



▿ Advanced

Routing Table: Management

▿ Advanced Settings for File Reputation

File Reputation Server: AMERICAS (cloud-sa.amp.sourcefire.com)

Cloud Domain: cloud-sa.amp.sourcefire.com

SSL Communication for File Reputation: ☑ Use SSL (Port 443)

Tunnel Proxy (optional):

Server: Port: 80

Username:

Passphrase:

Retype Passphrase:

☐ Relax Certificate Validation for Tunnel Proxy ?

The final configuration item would be to ensure all of the WSA appliances are configured with the same Reporting Group ID. This permits a SMA to review all the File Analysis reports for all of the WSA's sending files for File Analysis. Without this, you can only access the File Analysis reports via the WSA that submitted the file.

It is recommended to use an ID like COMPANYNAME-AMP. Despite the value recommendation in the GUI of a CCO ID, this is not an optimal item to use. If your organization already utilizes Threat Grid, and have access to use panacea.threatgrid.com, the naming should be based on the Organization name from panacea.threatgrid.com. This is found from looking at the User > My Account option on the Threat Grid portal. ***It is critical that every WSA has the same value in this space and that this matches what is configured on the SMA.***

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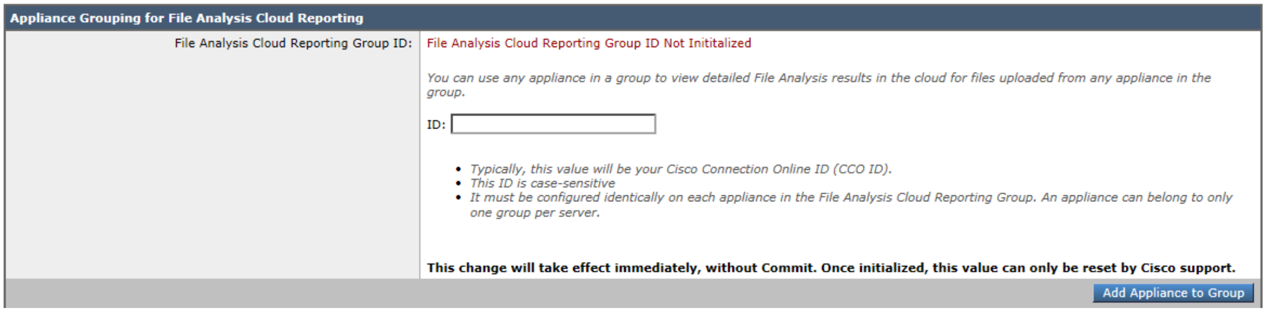
Configuration on WSA: *Security Services > File Reputation and Analysis*
Configuration on SMA: *Management Appliance > Centralized Services > Security Appliances*



Appliance Grouping for File Analysis Cloud Reporting

File Analysis Cloud Reporting Group ID: File Analysis Cloud Reporting Group ID Not Inititalized

You can use any appliance in a group to view detailed File Analysis results in the cloud for files uploaded from any appliance in the group.

ID:

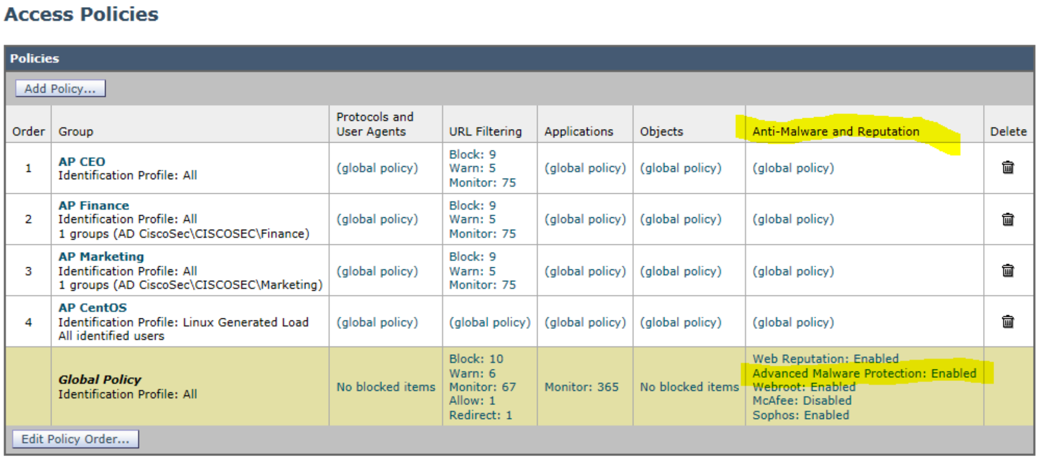
- *Typically, this value will be your Cisco Connection Online ID (CCO ID).*
- *This ID is case-sensitive*
- *It must be configured identically on each appliance in the File Analysis Cloud Reporting Group. An appliance can belong to only one group per server.*

This change will take effect immediately, without Commit. Once initialized, this value can only be reset by Cisco support.

Once the above items are completed. Click Submit at the bottom of the screen, and Commit the changes.

You have successfully enabled the AMP services on the Web Security Appliance. Now, you must enable AMP services in the Access Policies. This configuration is quite simple.

Under *Web Security Manager > Access Policies* you will need to configure Advanced Malware Protection under the Anti-Malware and Reputation Column. Click on the blue "Advanced Malware Protection"

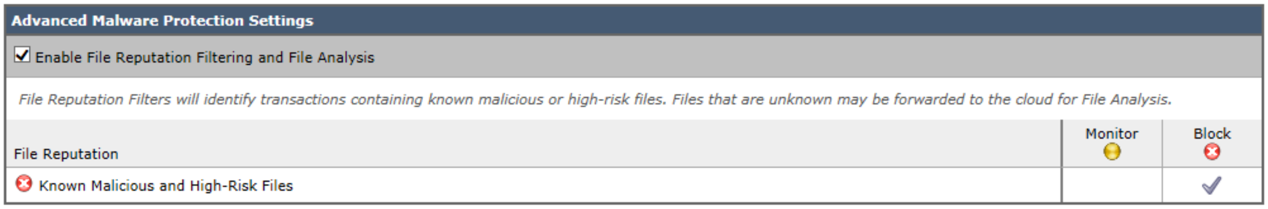


Access Policies

Policies

Order	Group	Protocols and User Agents	URL Filtering	Applications	Objects	Anti-Malware and Reputation	Delete
1	**AP CEO** Identification Profile: All	(global policy)	Block: 9 Warn: 5 Monitor: 75	(global policy)	(global policy)	(global policy)	🗑
2	**AP Finance** Identification Profile: All 1 groups (AD CiscoSec\CISCOSEC\Finance)	(global policy)	Block: 9 Warn: 5 Monitor: 75	(global policy)	(global policy)	(global policy)	🗑
3	**AP Marketing** Identification Profile: All 1 groups (AD CiscoSec\CISCOSEC\Marketing)	(global policy)	Block: 9 Warn: 5 Monitor: 75	(global policy)	(global policy)	(global policy)	🗑
4	**AP CentOS** Identification Profile: Linux Generated Load All identified users	(global policy)	(global policy)	(global policy)	(global policy)	(global policy)	🗑
	Global Policy Identification Profile: All	No blocked items	Block: 10 Warn: 6 Monitor: 67 Allow: 1 Redirect: 1	Monitor: 365	No blocked items	Web Reputation: Enabled Advanced Malware Protection: Enabled Webroot: Enabled McAfee: Disabled Sophos: Enabled	

Once in the configuration, under "Advanced Malware Protection Settings" check the box to enable the "File Reputation and File Analysis" and configure the appliance to either Monitor or Block Known Malicious and High-Risk Files. Cisco recommends to Block these.



Advanced Malware Protection Settings

☑ Enable File Reputation Filtering and File Analysis

File Reputation Filters will identify transactions containing known malicious or high-risk files. Files that are unknown may be forwarded to the cloud for File Analysis.

File Reputation	Monitor ●	Block ☒
☒ Known Malicious and High-Risk Files		✓

Downloaded files will be first checked with the File Reputation Services of AMP. The SHA256 hash for the file is queried to the AMP cloud. If the file is known "malicious" – the configuration section "Known Malicious and High-Risk Files" [above] will be followed. The configuration above will have any file with a known malware blocked from transfer to the end client.

In the event the File Reputation services determines the file is an ‘unknown file,’ it will be passed to the end user. The WSA will determine of the file is a supported file type for File Analysis, and if it needs to be uploaded for File Analysis after pre-classification. Keep in mind that while File Reputation supports most file types for SHA lookup, File Analysis has a smaller subset of supported file types. The File Retrospection functionality will alert the administrator to any file that completes File Analysis with a “malicious” verdict. A report on the WSA (or SMA) will show what users downloaded these files for manual remediation.

Timing of Processes and Verdict Updates

- There is no Service Level Agreement or guarantee for timing of AMP processes or Threat Grid file analysis processing, all information provided here is best-effort based on current processing.
- The File Analysis process generally takes between 10 minutes to 24 hours (estimated, with average being on the far low end). When File Analysis is complete, the results are poked to the AMP cloud.
- The ESA & SMA File Analysis Quarantine checks for File Analysis Completion every 5 minutes, upon updated verdict it will release/block the email per the quarantine configuration.
- The WSA & ESA File Retrospection process checks the AMP Cloud every 15 minutes for updated file disposition.
- The WSA & ESA cache file SHA dispositions and update via retrospective events. The cache lives forever unless we need to empty the space, in that event the least recently used are cleared.

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