# Cisco Cloud/Hybrid Email Security Overview

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*Cisco Cloud/Hybrid Email Security Overview*

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# Understanding the Cisco Email Security Service



## Cisco Cloud Email Security Service Overview

Cisco Cloud Email Security provides an infrastructure that is maintained in resilient and geographically diverse Cisco data centers. The service provides email security based on an “in the cloud” or software as a service (SaaS) model. Your organization retains access to and visibility of the cloud-based infrastructure.

Throughout this guide, the term “appliance” is used to mean a virtual appliance.

Cisco Cloud Email Security is an all-inclusive service. Software, hardware, and support are bundled together. The service includes the following features and functionality:

- **Consuming External Threat Feeds.** The External Threat Feeds (ETF) framework allows the Cisco Email Security Gateway to consume external threat information in STIX format communicated over TAXII protocol.
- **Sender Domain Reputation Filtering.** Sender Domain Reputation (SDR) filtering allows you to filter messages that come through the Cisco Email Security Gateway based on SDR that is determined by the Cisco SDR service.
- **New Data Loss Prevention (DLP) solution.** Cisco now provides an alternative DLP solution that allows seamless migration of all the existing DLP policies created in RSA DLP to the new DLP engine. After the upgrade, you can view or modify the migrated DLP policies in **Mail Policies** > **DLP Policy Manager** page in the web interface.

  **Note** There is no support for RSA Enterprise Manager Integration in Async0S 11.0 and later. If you have DLP policies created in RSA Enterprise Manager, you must recreate those policies in your appliance after the upgrade.

- **Anti-Spam** at the gateway, through the unique, multi-layer approach of SenderBase Reputation Filters and IronPort Anti-Spam integration.
- **Anti-Virus** at the gateway with the Sophos and McAfee Anti-Virus scanning engines.

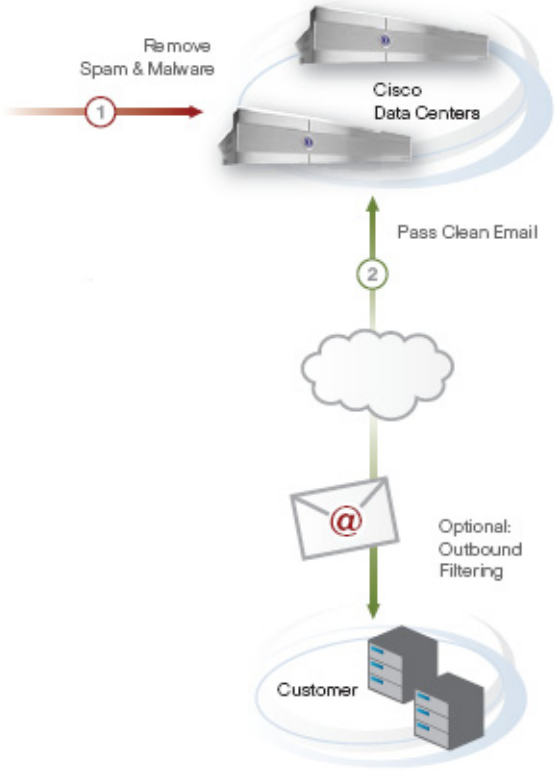
- **Graymail Detection and Safe Unsubscribing**. The Cisco Email Security appliance allows you to:
  - Identify graymail using the integrated graymail engine and apply appropriate policy controls.
  - Provide a secure and easy mechanism for end users to unsubscribe from unwanted graymail using cloud-based Unsubscribe Service.
- **Outbreak Filters**™. Cisco's unique, preventive protection against new virus, scam, and phishing outbreaks that can quarantine dangerous messages until new updates are applied, reducing the window of vulnerability to new message threats.
- **Policy, Virus, and Outbreak Quarantines.** Provide a safe place to store suspect messages for evaluation by an administrator.
- **Spam Quarantine.** Provides end user access to quarantined spam and suspected spam.
- **Email Authentication**. The appliance supports various forms of email authentication, including Sender Policy Framework (SPF), Sender ID Framework (SIDF), and DomainKeys Identified Mail (DKIM) verification of incoming mail, as well as DomainKeys and DKIM signing of outgoing mail.
- **File Reputation Filtering and File Analysis**. Advanced Malware Protection identifies emerging and targeted file-based threats in incoming and outgoing messages based on:
  - File reputation
  - File analysis (for certain files with unknown reputations)
  - Verdict updates
- **URL filtering**. URL filtering obtains the reputation and category of URLs in incoming and outgoing messages to allow several new functionalities.
- **S/MIME Security Services**. Cisco Email Security appliance now allows organizations to communicate securely using S/MIME without requiring that all end-users possess their own certificates. Organizations can handle message signing, encryption, verification, and decryption at the gateway level using certificates that identify the organization rather than the individual.
- **Email Encryption**. You can encrypt outgoing mail to address HIPAA, GLBA and similar regulatory mandates. To do this, you configure an encryption policy on the Cisco Email Security appliance and use a hosted key service to encrypt the message.
- **Message Tracking**. The appliance includes a message tracking feature that makes it easy to find the status of messages that the Cisco Email Security appliance processes.
- **Mail Flow Monitoring.** Monitors the mail flow of all inbound and outbound messages that provides complete visibility into all email traffic for your enterprise.
- **Access Control.** For inbound senders, based upon the sender's IP address, IP address range, or domain.
- Extensive **message filtering** technology allows you to enforce corporate policy and act on specific messages as they enter or leave your corporate infrastructure. Filter rules identify messages based on message or attachment content, information about the network, message envelope, message headers, or message body. Filter actions allow messages to be dropped, bounced, archived, blind carbon copied, or altered, or to generate notifications.
- **Message Encryption via secure SMTP over Transport Layer Security.** Ensures messages traveling between your corporate infrastructure and other trusted hosts are encrypted.

  Consolidated and robust reporting options analyze traffic data from geographically diverse infrastructure deployments to provide fully integrated security reporting. Cisco Email Security Appliance's third-generation reporting technology enables unprecedented insight into even the highest volume networks in the world. Detailed and accurate information is coalesced into clear and informative reports, suitable for all levels of an organization.

Message tracking gives your organization near real-time visibility into messages for tracking down message disposition. This feature can help resolve help desk calls quickly by determining the exact location of a message. Instead of having to search through log files, you can use the flexible tracking interface to locate messages.

Figure 1-1 illustrates the Cisco Cloud Email Security deployment model.

***Figure 1-1 Cisco Cloud Email Security Deployment***




Cisco Cloud Email Security works as follows:

- The Email Security appliance synchronizes configuration information between other Email Security appliances that are referred to as the cluster configuration.
- The cloud-based cluster of Email Security appliances accepts and processes inbound mail.
- The cloud-based Security Management appliance gathers the reporting and tracking data from the Cloud Email Security appliances. It functions as the central location for messages quarantined by policy or as spam from the Email Security appliance cluster.
- Mail that is filtered based on policy is centrally quarantined.
- The system sends processed mail directly to your groupware server or Mail Transfer Agent (MTA), processes the outbound mail from the groupware server, and provides advanced content filtering and email encryption.
- (Optional) Outbound mail can be sent to the Internet through the Email Security appliance cluster.

# Cisco Hybrid Email Security Overview

Cisco Hybrid Email Security is a unique service offering that combines a cloud-based email security deployment with an appliance-based email security deployment (on premises) to provide maximum choice and control for your organization. The cloud-based infrastructure is typically used for inbound email cleansing, while the on-premises appliances provide granular control—protecting sensitive information with data loss prevention (DLP) and encryption technologies.

Like the Cisco Cloud Email Security service, the hybrid service is all-inclusive, with software, hardware, and support bundled together. The service includes the following features and functionality:

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  **Note** There is no support for RSA Enterprise Manager Integration in Async0S 11.0 and later. If you have DLP policies created in RSA Enterprise Manager, you must recreate those policies in your appliance after the upgrade.

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- **Email Encryption**. You can encrypt outgoing mail to address HIPAA, GLBA and similar regulatory mandates. To do this, you configure an encryption policy on the Cisco Email Security appliance and use a local key server or hosted key service to encrypt the message.
- **Email Security Manager.** A single, comprehensive dashboard to manage all email security services and applications on the appliance. Email Security Manager can enforce email security based on user groups, allowing you to manage IronPort Reputation Filters, Outbreak Filters, Anti-Spam, Anti-Virus, and email content policies through distinct inbound and outbound policies.
- **Message Tracking**. The appliance includes a message tracking feature that makes it easy to find the status of messages that the Cisco Email Security appliance processes.
- **Mail Flow Monitoring**. Monitors mail flow of all inbound and outbound messages that provides complete visibility into all email traffic for your enterprise.
- **Access Control.** For inbound senders, based upon the sender's IP address, IP address range, or domain.
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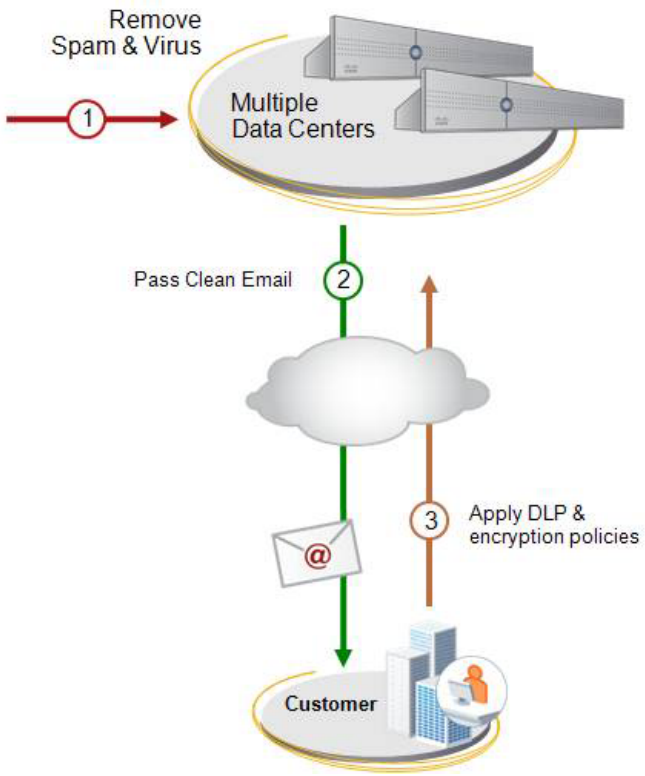
  Message tracking gives your organization near real-time visibility into messages for tracking down message disposition. This feature can help resolve help desk calls quickly by determining the exact location of a message. Instead of having to search through log files, you can use the flexible tracking interface to locate messages. Tracking spans both cloud-based and on-premises appliances.

Figure 1-2 illustrates the Cisco Hybrid Email Security deployment model.

*Figure 1-2 Cisco Hybrid Email Security Deployment*




Cisco Hybrid Email Security works as follows:

- The Email Security appliance synchronizes configuration information between other Email Security appliances that are referred to as the cluster configuration
- The Cloud Email Security appliances accept and process inbound mail. The system sends processed mail to the on-premises Email Security appliance, which carries out additional content filtering to filter messages by policy.
- The cloud-based Security Management appliance gathers the reporting and tracking data from the Cloud Email Security appliances as well as from the on-premises Email Security appliance.
- The cloud-based Security Management appliance functions as the central quarantine for spam from the cloud-based Email Security appliances.
- Mail that is filtered based on policy is quarantined on the Cisco Security Management appliance that filtered the messages.
- The on-premises Email Security appliance delivers mail to your groupware server, processes the outbound mail from the groupware server, and provides advanced content filtering and email encryption.
- The on-premises Email Security appliances send outbound mail to the Internet.

  It is strongly recommended that you do not allow your cloud-based appliances to relay bulk outbound messages, such as mass marketing mailers. Instead, you can limit relay traffic to transactional email. Capacity assurance does not include marketing communications or email generating programs or entities.

# Managing Your Cisco Email Security Service

You can manage and make changes to your cloud-based email security service directly using the appliance.

You can use the appliance to do the following:

- View and track information about your cloud-based email security service.
- Access reports.
- Access and modify the configuration of cloud-based appliances.

# Service and Support

**Note** To get support for Cisco Cloud Email Security (CES), have your Contract Number ready when you call Cisco TAC.

Cisco TAC: http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html

Support Site for legacy IronPort: http://www.cisco.com/web/services/acquisitions/ironport.html

For non-critical issues, you can also access customer support from the appliance. For instructions, see the User Guide or online help.


# Setting Up Your Cloud Environment



## Accessing Your Cloud Appliances



### Accessing the Web Interface and Command Line Interface

You can access the web interface of all your Cloud appliances directly through the appliance or using the URLs provided in your Welcome Letter.

You can use the details provided in your Welcome Letter to access all your Cloud appliances through the Command Line Interface (CLI).

## Configuring Your Cloud Email Security Appliances



### Configuring Email Authentication

To authenticate email, you can use Sender Policy Framework (SPF) or DomainKeys Identified Mail (DKIM).

DKIM verifies the authenticity of email based on a signing key used by the sender. SPF verifies the authenticity of email based on DNS TXT records. SPF allows the owner of an Internet domain to use a special format of DNS records to designate which machines are authorized to send email for that domain.

## Configuring DKIM

For instructions on configuring DKIM and defining content filter and message filter rules, see the following chapters in the *User Guide for AsyncOS for Cisco Email Security Appliances:*

- Email Authentication
- Using Message Filters to Enforce Email Policies

## Configuring SPF

Cisco provides a recommended SPF entry for your DNS TXT record, but does not manage the DNS of the customer owned domains, such as the Recipient Access Table of the Email Security appliance. The format of the record is as follows:

`v=spf1 -exists:%{i}.spf.<`*unique_name*`>.iphmx.com -all`

See Service and Support, page 1-7.

After you have added the SPF record to the DNS, you can set up SPF verification and define content filter and message filter rules. See the following chapters in the *User Guide for AsyncOS for Cisco Email Security Appliances:*

- Email Authentication
- Using Message Filters to Enforce Email Policies

# Routing Outbound Email

For outbound mail through Cloud Email Security appliances, you must configure the appliances to ensure that the cloud-based servers relay the mail on your behalf. See the following chapter in the *User Guide for AsyncOS for Cisco Email Security Appliances*: Configuring Routing and Delivery Features.

# Archiving Logs

Cisco does not store logs from your Cloud appliances. Historical logs are not archived and can be overwritten by log rotation. If you want to retain the logs, configure the log subscriptions on your cloud-based appliances to use SCP Push (or SCP on Remote Server) as the log retrieval method. This method periodically pushes log files to an SCP server on a remote computer.

The method requires an SSH SCP server on a remote computer using the SSH1 or SSH2 protocol. The subscription requires a username, SSH key, and destination directory on the remote computer, and log files are transferred based on a rollover schedule that you set.

If your firewall blocks SSH access into your network, it is recommended that you explicitly allow the inbound SSH connections from the Cisco Cloud Email Security data centers.

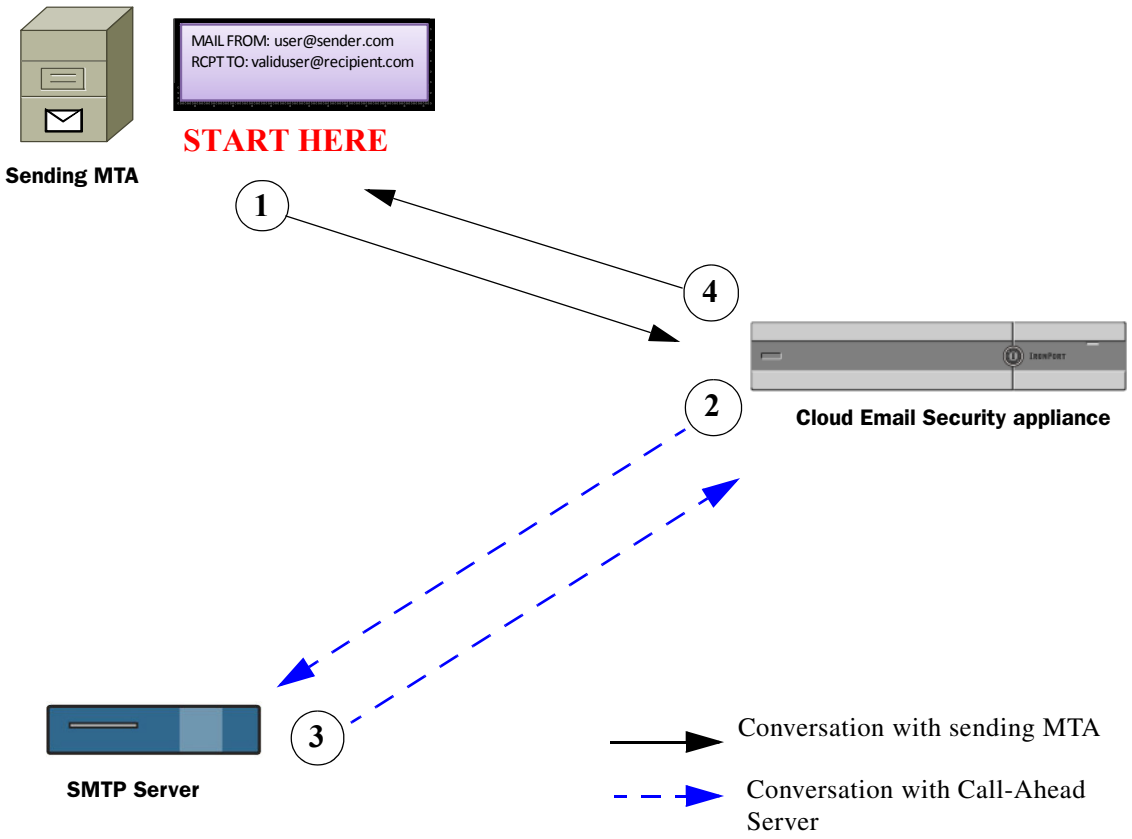
See *User Guide for AsyncOS for Cisco Email Security Appliances.*

# Configuring Your Servers

## Using SMTP Call Ahead Validation

Cisco Cloud Email Security uses SMTP call ahead validation for recipient validation, a seamless and elegant way to validate recipients while minimizing administrator overhead. This approach has minimal or no impact to firewall settings already in place with an existing solution.

*Figure 2-1 SMTP Call Ahead Server Conversation Workflow*




SMTP call ahead works as follows:

**Step 1** The sending email system (MTA) opens a connection with the cloud-based email security appliance. As part of the initial SMTP protocol conversation, the sender email system passes along the RCPT TO information.

**Step 2** The cloud-based email security infrastructure keeps the incoming connection open and initiates a call to the SMTP server. As part of this communication, the cloud-based email security appliance passes the RCPT TO information to your SMTP server (for example, Microsoft Exchange).

**Step 3** Depending on whether the user in RCPT TO: is valid or invalid, the SMTP server sends a 200-series status or a 500-series status, respectively.

For SMTP call ahead to work properly, on your MTA or groupware server ensure that sender verification features (for example, SPF checks, TLS checks, and DHAP schemes) that might block connections from cloud-based servers have been disabled for the specified IP addresses.

**Step 4** The Cloud Email Security appliance resumes the SMTP conversation and sends a response to the sending MTA, allowing the conversation to continue or dropping the connection based on the SMTP server response (and settings configured in the SMTP Call-Ahead profile).

Due to the order of processes in the email pipeline, if the message for a given recipient is rejected by the RAT, then the SMTP call-ahead recipient validation will not occur. For example, if you specified in the RAT that only mail for *example.com* is accepted, then mail for *recipient@domain2.com* is rejected before SMTP call-ahead recipient validation can occur.

For more details about how SMTP call-ahead validation occurs, see *User Guide for AsyncOS for Cisco Email Security Appliances*.


# Using the Cisco End-User Spam Quarantine

**Note** Use this chapter only if you have enabled the End-User Spam Quarantine.



## Understanding the Cisco End-User Spam Quarantine

Spam includes but is not limited to:

- Advertising mail, pyramid schemes, chain letters, and propaganda
- Unwanted questionable subject matter, or abusive or threatening mail
- Mail that contains a false or misleading header, subject line, sender, return address, or routing or transmission path
- Mail that uses a third-party domain name without permission

The Spam Quarantine minimizes the impact of spam by implementing appropriate policies and technology. Mail messages that have been identified as spam are quarantined. If the messages are not spam, you can remove them from the quarantine and add the sender to a safelist. Or if the messages are truly spam, take no action. Quarantined mail is not calculated into your mailbox capacity limit and is automatically deleted after a certain number of days.

**Note** Find out from your administrator how many days the quarantine holds on to mail before it is deleted.

No special hardware, software, or security authorization is required to access the Spam Quarantine. You receive Spam Quarantine notifications on a regular basis listing messages identified as spam.

### Safelists and Blocklists

You can create safelists and blocklists to better control which mail messages are treated as spam. Safelists enable you to ensure that certain users or domains are never treated as spam, while blocklists ensure that certain users or domains are always treated as spam.

**Note** Find out from your administrator the maximum number of entries you can add to your safelist and blocklist.

See Accessing Safelists and Blocklists, page 3-3.

# Processing Messages in the Spam Quarantine

Spam quarantine notifications provide details of messages so you can determine whether the messages are truly spam. You can process messages directly from a spam quarantine notification, or you can access the Spam Quarantine by clicking the links found in the body of the notification.

If the message is spam, do nothing. The message is kept in quarantine for a certain number of days (check with your administrator) and then deleted.



## Releasing Messages from the Spam Quarantine to Your Inbox

If the message is not spam, then release the message from the quarantine to your inbox. You can also add the sender to your safelist to prevent future messages from the sender from being quarantined.

**Procedure**

**Step 1** In the Spam Quarantine notification, click **Not Spam** next to the message you want to release.

**Step 2** In the confirmation message that appears, click **Add Sender to Safelist.**

If you release the message and do not add the sender to the safelist, future messages from the sender may be quarantined.

# Viewing Message Details

If you require details other than the message sender and the subject to determine whether a message is spam, you can view the entire message before taking action on it.

**Procedure**

**Step 1** In the Spam Quarantine notification, click the message's Subject link to display the Message Details page.

**Note** If you already took action on the message, the Message Not Found page appears.

**Step 2** From the drop-down list, choose the action you want to take. Options are: “Release,” “Release and Add to Safelist,” and “Delete.”

If you take no action, the message is deleted from the quarantine in a certain number of days (check with your administrator).

**Step 3** Click **Submit.**

**Step 4** In the confirmation message, confirm your intended action.

# Taking Action on Multiple Messages at a Time

**Procedure**

**Step 1** In the Spam Quarantine notification, click one of the links to access the Spam Quarantine.

**Step 2** Select the check box next to each message on which you want to take action.

**Step 3** From the drop-down list, select the action you want to take, and click **Submit.**

If you take no action, the messages is deleted from the quarantine in a certain number of days (check with your administrator).

**Step 4** In the confirmation message, confirm your intended action.

# Accessing Safelists and Blocklists

Entries can be added to safelists and blocklists using the following formats:

- `user@domain.com`
- `server.domain.com`
- `domain.com`

You cannot add a sender or domain to both safelists and blocklists at the same time. However, if you add a domain to a safelist, and the email address for a user of that domain to the blocklist (or vice versa), the appliance applies both rules. For example, if you add `example.com` to the safelist, and add `george@example.com` to the blocklist, the appliance delivers all mail from `example.com` without scanning for spam, but will treat mail from `george@example.com` as spam.

You cannot allow or block a range of subdomains using the following syntax: `.domain.com`. However, you can explicitly block a specific domain using the following syntax: `server.domain.com`.

## Adding Entries to Safelists or Blocklists

**Procedure**

**Step 1** In the Spam Quarantine notification, click one of the links to access the Spam Quarantine.

**Step 2** From the **Options** drop-down list, choose **Safelist** or **Blocklist.**

**Step 3** Enter the email address or domain, and click **Add to List.**

**Note** Unlike safelist entries, you can add blocklist entries only from the Options menu in the End-User Spam Quarantine.

# Searching Messages in the Quarantine

**Procedure**

**Step 1** In the Spam Quarantine notification, click one of the links to access the Spam Quarantine.

**Step 2** In the **Search Messages** field, enter the term for which you are searching, and click **Search.**