

Blue Coat® Systems SG™ Appliance

Volume 7: Managing Content

SGOS Version 5.2.2



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Contents

Contact Information

Chapter 1: Introduction

Document Conventions.....	7
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Chapter 2: Filtering Web Content

Section A: About Filtering Web Content

About Content Filtering Databases	10
About Content Filtering Categories.....	10
On-box Versus Off-box Solutions	10
Blue Coat Web Content Filtering Solutions.....	11
About Blue Coat Web Filter.....	12
About Dynamic Real-Time Rating	12

Section B: Configuring Blue Coat Web Filter

Selecting Blue Coat Web Filter	14
Specifying a Custom Time Period to Update Blue Coat Web Filter	16
Configuring Dynamic Real-Time Rating	17
About Proxy Chaining Support for DRTR	17
Configuring DRTR.....	18
About DRTR States	19
Diagnostics	19

Section C: Configuring a Local Database

Selecting the Local Database and Downloading the Database.....	20
Specifying a Custom Time Period to Update a Local Database	22
Diagnostics	22

Section D: Configuring Internet Watch Foundation

Selecting the IWF Database.....	24
Specifying a Custom Time Period to Update IWF	26
Diagnostics	26

Section E: Configuring a Third-Party Vendor

Selecting the Provider and Downloading the Database.....	28
Specifying a Custom Time Period to Update a Third-Party Database	33
Diagnostics	34

Section F: Applying Policy

Applying Policy to Categorized URLs	35
Using Content Filtering Vendors with Blue Coat Policies	37
Defining Custom Categories in Policy	38
Notes	40

Section G: Configuring Websense Off-box Content Filtering

Performing a Health Check on a Websense Off-box Service.....	44
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Chapter 3: Malicious Content Scanning Services

Section A: About Content Scanning

Determining Which Files to Scan.....	48
About Response Modification.....	48
About Request Modification	49
Returning the Object to the Blue Coat Appliance	50
Caching and Serving the Object.....	50
ICAP v1.0 Features.....	51
Sense Settings	51
ISTags.....	51
Persistent Connections.....	51
Improving the User Experience	51
About Patience Pages	51
About Data Trickling.....	52
About ICAP Server Failover.....	55

Section B: Configuring SG Appliance ICAP Communications

Configuration Tasks	56
Installing the ICAP Server	56
Creating an ICAP Service	56
Deleting an ICAP Service.....	60
Configuring ICAP Feedback	61
Customizing ICAP Patience Text	62
HTTP Patience Text	62
FTP Patience Text.....	65

Section C: Creating ICAP Policy

VPM Objects.....	67
Example ICAP Scanning Policy	67
Exempting HTTP Live Streams From Response Modification	72
Streaming Media Request Modification Note	72
CPL Notes	72

Section D: Managing Virus Scanning

Advanced Configurations.....	74
Using Object-Specific Scan Levels	74
Improving Virus Scanning Performance	74
Updating the ICAP Server	74
Replacing the ICAP Server	75
Access Logging.....	75
Symantec AntiVirus Scan Engine 4.0.....	75
Finjan SurfinGate 7.0	75

Contents

Chapter 4: Configuring Service Groups

About Weighted Load Balancing.....	77
Creating a Service Group.....	78
Deleting a Service Group or Group Entry.....	81
Displaying External Service and Group Information.....	82

Appendix A: Glossary

Index

Chapter 1: Introduction

Applying content filtering and virus scanning to requested and posted Web content in an enterprise is vital to securing the network and improving productivity.

- ❑ Content filtering allows you to regulate, based on content categories, which Web sites employees are allowed to access and which are restricted.
- ❑ Virus scanning allows you to scan both incoming content and content leaving the enterprise network for viruses and other malicious code, such as *drive-by* software that propagates spyware.

This document contains the following chapters:

- ❑ Chapter 2: "Filtering Web Content"
- ❑ Chapter 3: "Malicious Content Scanning Services"
- ❑ Chapter 4: "Configuring Service Groups"

Document Conventions

The following section lists the typographical and Command Line Interface (CLI) syntax conventions used in this manual.

Table 1-1. Document Conventions

Conventions	Definition
<i>Italics</i>	The first use of a new or Blue Coat-proprietary term.
Courier font	Command line text that appears on your administrator workstation.
<i>Courier Italics</i>	A command line variable that is to be substituted with a literal name or value pertaining to the appropriate facet of your network system.
Courier Boldface	A Blue Coat literal to be entered as shown.
{ }	One of the parameters enclosed within the braces must be supplied
[]	An optional parameter or parameters.
	Either the parameter before or after the pipe character can or must be selected, but not both.

Chapter 2: Filtering Web Content

This chapter describes how to configure the SG appliance to process client Web requests and filter the returning content.

This chapter contains the following sections:

- ❑ "Section A: About Filtering Web Content" on page 10
- ❑ "Section B: Configuring Blue Coat Web Filter" on page 14
- ❑ "Section C: Configuring a Local Database" on page 20
- ❑ "Section D: Configuring Internet Watch Foundation" on page 24
- ❑ "Section E: Configuring a Third-Party Vendor" on page 28
- ❑ "Section F: Applying Policy" on page 35
- ❑ "Section G: Configuring Websense Off-box Content Filtering" on page 42

Section A: About Filtering Web Content

Section A: About Filtering Web Content

Content filtering allows you to control access to Web sites based on their perceived content. This section describes Web-content filtering.

About Content Filtering Databases

A content filtering database is simply a set of rules for organizing URLs into meaningful categories. Depending on the vendor, a URL is listed under one category or several categories.

A content filtering database does not block any Web site or any category by default. The role of the database is to offer additional information to the proxy server and to the administrator about the client request. Client access depends on the rules and policies implemented by the administrator in accordance with company standards.

Important: Because of the dynamic nature of the Internet, there is a constant flow of new URLs (and URLs on lesser-known sites) that will not be in the existing content filtering database. Those URLs that are not in the database are marked as **none**, and you can create a policy to categorize these.

About Content Filtering Categories

A small number of categories can be used to effectively classify the vast and constantly growing number of URLs that are found on the Web. After the Web sites and content are categorized, you can control access to that content through policy.

Individual content filter providers (Blue Coat Web Filter or third-party vendors) define the content-filtering categories and their meanings. After providers are configured and the databases are available, URLs can be mapped to lists of categories. These categories are then made available to policy, where decisions like limiting online shopping or blocking job searching can be controlled.

For example:

```
<proxy>
    url.category="Jobs" exception( content_filter_denied )
```

Note: You can request that specific URLs be reviewed for correct categorization, if your content filtering provider supports this. For Blue Coat Web Filter, visit <http://sitereview.bluecoat.com/> to have a URL's category reviewed.

On-box Versus Off-box Solutions

You can deploy content filtering in the following two ways, both of which the SG appliance supports:

- ❑ On-box: When the content filtering database exists on the proxy. This provides the best performance because the proxy does not need to retrieve information from another network server.
- ❑ Off-box: When the proxy must contact another server over the network to categorize URLs.

Section A: About Filtering Web Content

The following diagram illustrates the process flow when Web content filtering (on-box or off-box) is employed in the network.

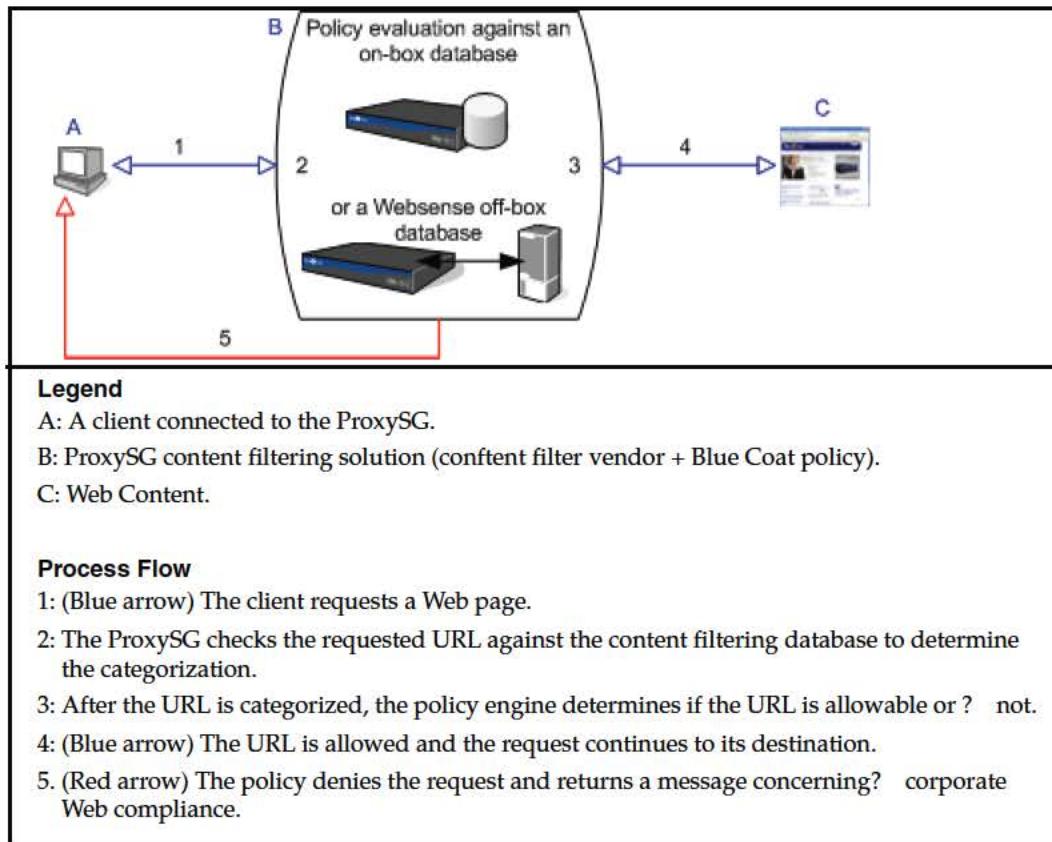


Figure 2-1. Web Content Filtering Process Flow (On-box or Off-box)

Blue Coat Web Content Filtering Solutions

The SG appliance offers the following content filtering options, any of which you can use separately or simultaneously:

- Using Blue Coat Web Filter (BCWF), an on-box content filtering database maintained by Blue Coat, which also offers dynamic category-rating abilities. For example, if a URL is not found in the on-box database, BCWF can attempt to categorize it dynamically, in real time.
- Uploading your custom content filtering database to the SG appliance. You would create your own local database file in the same way that you create policy files, except that only define category statements are allowed in the local database.
- Using a currently supported third-party content filtering vendor database. See "Section E: Configuring a Third-Party Vendor" on page 28.
- Enabling the Internet Watch Foundation (IWF) database. See "Section D: Configuring Internet Watch Foundation" on page 24.

Note: For information about the IWF, visit their Web site at <http://www.iwf.org.uk/>.

Section A: About Filtering Web Content

About Blue Coat Web Filter

Blue Coat Web Filter (BCWF) is a hybrid solution combining an extremely comprehensive on-box URL database with a service that can provide real-time categorization of unlisted URLs. For more information about real-time rating and categorization of URLs, see “[About Dynamic Real-Time Rating](#)” on page 12.

A world-wide network of servers allows the SG appliance to expediently update the master BCWF database. For information about BCWF automatic updating feature and scheduling updates, see “[Specifying a Custom Time Period to Update Blue Coat Web Filter](#)” on page 16.

Note: BCWF supports many languages. Refer to the *Blue Coat Release Notes* for this release for the most up-to-date list of supported languages.

About Dynamic Real-Time Rating

Dynamic Real-Time Rating (DRTR) provides real-time analysis and content categorization of requested Web pages to solve the problem of new and previously unknown, uncategorized URLs—those not in the database.

When a user requests a URL that has not already been categorized by the BCWF database (for example, a brand new Web site), the SG appliance *dynamic categorization service* analyzes elements of the requested content and assigns a category or categories. The dynamic service is consulted *only* when the installed BCWF database does not contain sufficient category information for a requested URL.

Note: If the category returned by this service is blocked by policy, the offending material never enters the network in any form.

About the DRTR Process

Dynamic analysis of content is performed on a remote network service and not locally on the SG appliance. There is a very minimal amount of bandwidth used for the round-trip request and response, and a slight amount of time waiting for the service to provide results. The service is only consulted for URLs that cannot be locally categorized and results are cached on the SG appliance, so the user experience is generally not affected. To avoid any amount of user-request latency and to defer categorization, set DRTR to run in *background mode*. For more information, see “[Configuring Dynamic Real-Time Rating](#)” on page 17.

The following diagram illustrates BCWF content filtering flow when DRTR is employed.

Section A: About Filtering Web Content

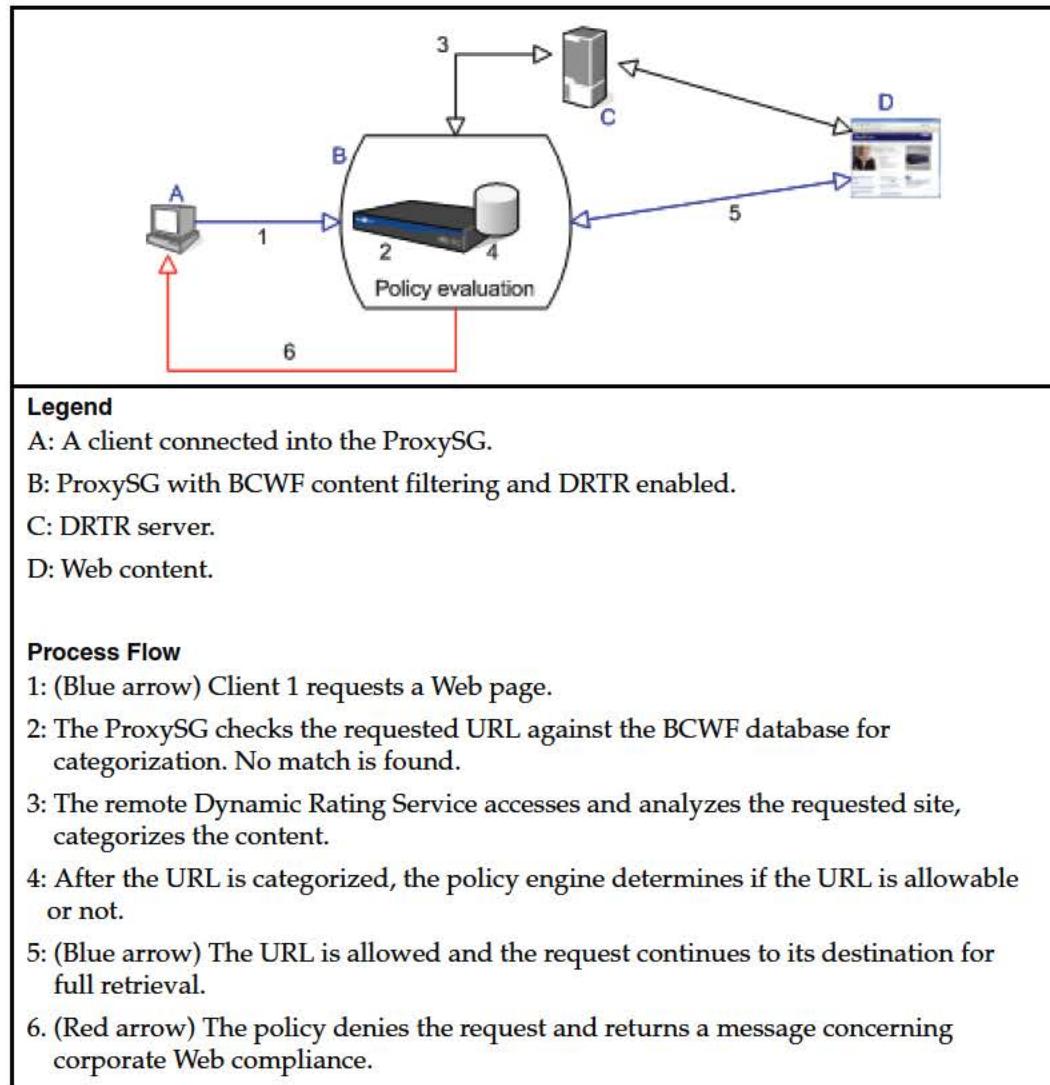


Figure 2-2. BCWF with DRTR Content Employed

Section B: Configuring Blue Coat Web Filter

Section B: Configuring Blue Coat Web Filter

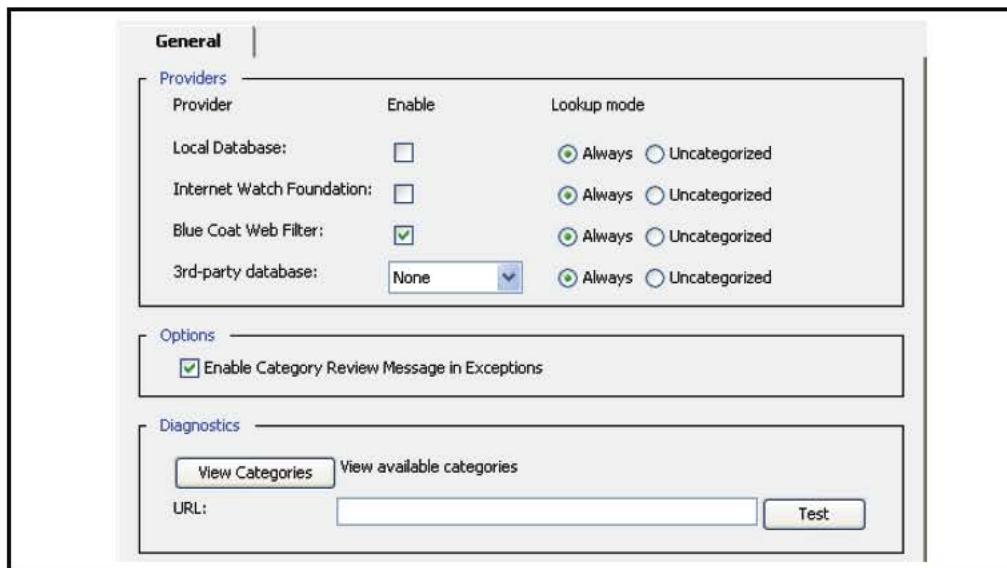
This section describes how to select and configure Blue Coat Web Filter (BCWF), how to schedule a custom database update schedule, and how to change DRTR settings.

Important: BCWF requires a valid license provided by Blue Coat. Refer to the Licensing chapter in *Volume 1: Getting Started*.

Selecting Blue Coat Web Filter

To select Blue Coat Web Filter:

1. Select Configuration > Content Filtering > General.



2. Select **Enable** for Blue Coat Web Filter.
3. Select the **Lookup Mode**.
 - a. The default is **Always**, which specifies that BCWF will always be consulted for category information.
 - b. **Uncategorized** specifies that the lookup is skipped if the URL has already been found in policy, a Local database, or the Internet Watch Foundation (IWF) database.
4. (Optional) In the **Options** section, select **Enable Category Review Message in Exceptions**. This adds a link to the default content filter exception page that can be used to request review of the categories assigned to a blocked URL.

Two substitutions (`$(exception_category_review_url)` and `$(exception_category_review_message)`) are automatically appended to the `help` element of all exception definitions. For information on using the `$(exception.help)` element, refer to *Volume 6: VPM and Advanced Policy*.

Section B: Configuring Blue Coat Web Filter

Note: The substitution values are empty if the database was not consulted for categorization or if the categorization process failed due to an error.

5. Click **Apply** to commit the changes to the SG appliance.

Note: If this is the first time you enabled BCWF, a small database that contains the category list is downloaded, allowing immediate policy creation.

No username or password is required during the trial period (60 days). To download the database on demand or on a schedule, you must configure BCWF service.

Configuring Blue Coat Web Filter

To configure Blue Coat Web filter:

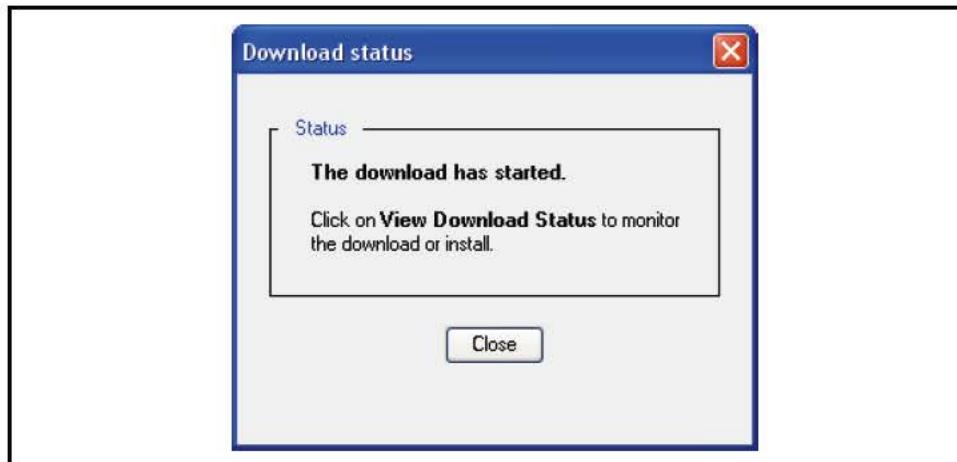
1. Select **Configuration > Content Filtering > Blue Coat**.

2. When you subscribed to BCWF Service, you received a username and password for access to download updates. (If you are in the trial period, no username or password is required.)
 - a. In the **Username** field, enter your username.
 - b. Click **Change Password**. The Change Password dialog displays.
 - c. Enter your password and click **OK**.
3. Download the database:
 - a. The default database download location displays in the **URL** field.

Note: Only enter a new URL if instructed. Otherwise, accept the default.

4. Click **Download Now**. The Download Status dialog displays, stating that a download has started.

Section B: Configuring Blue Coat Web Filter



- a. Click **Close** to close the Download status dialog.
 - b. To view the download log, click **View Download Status**. A new browser window opens, displaying the download log.

```
Download log:  
Blue Coat download at: 2007/06/07 17:40:42-0400  
Downloading from https://list.bluecoat.com/bcwf/activity/download/  
bcwf.db  
Requesting differential update  
Differential update applied successfully  
Download size: 84103448  
Database date: Wed, 07 Jun 2007 08:11:51 UTC  
Database expires: Fri, 07 Jul 2007 08:11:51 UTC  
Database version: 2005040
```
 - c. When you are finished viewing the download log, close the browser window.
5. Click **Apply** to commit the changes to the SG appliance.

Specifying a Custom Time Period to Update Blue Coat Web Filter

The SG appliance checks for updates to the database several times an hour. When an update is available, it is automatically downloaded and applied. Typically, an update contains only the information that has changed.

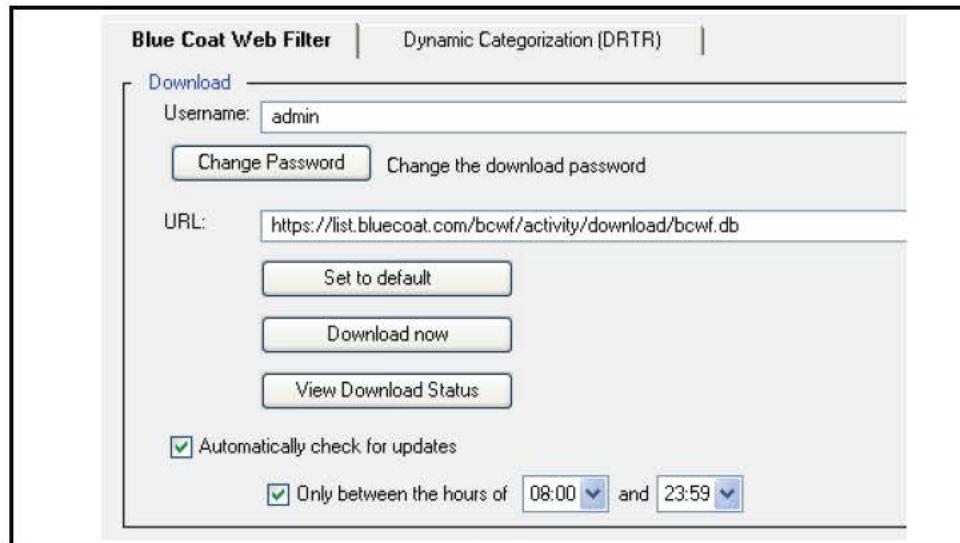
You can prevent this automatic check entirely by disabling automatic updates. You can also restrict the checks to occur only within a specific time period. For example, you can choose to check for updates only between the hours of 8 am and 11 pm. The time frame is always local time.

Note: When the database is downloaded, a log is available that includes detailed information about how the database was updated. You can view the download log in the Management Console by clicking **View Download Status** on the BCWF tab, selecting **Statistics > Advanced > Content Filter Service**, or in the CLI (SGOS#(config) show content-filter status).

To specify a custom time period for updates:

1. Select **Configuration > Content Filtering > Blue Coat**. The **Automatically Check for Updates** check box is selected by default.

Section B: Configuring Blue Coat Web Filter



- a. Select the **Only between the hours of** check box. The time frame is local time.
- b. Click the arrows to view the drop-down lists, and set the time period for your update schedule. For example, to check for updates between the hours of 8 am and midnight, set the first box to 08:00 and the second box to 23:59.
2. Click **Apply** to commit the changes to the SG appliance.

Configuring Dynamic Real-Time Rating

By default, DRTR is enabled and configured to categorize un-categorized URLs. If this service is causing significant delays to enterprise Web communications, you can run the service in the background or disable the feature.

About Proxy Chaining Support for DRTR

The SG appliance allows you to forward BCWF DRTR requests through upstream proxy servers and SOCKS gateways, which eliminates the requirement for the SG appliance to have direct connection to back-end servers.

Forwarding Hosts and Groups

You can specify the alias of a forwarding host or group that has already been defined. If you want the DRTR requests to be forwarded through an upstream HTTP proxy, configure a forwarding host that is defined as a proxy and has an HTTP port set. Then select that forwarding host in the DRTR configuration.

Important: Do not define your proxy as a *server*. An attempt to configure proxy chaining using a server results in an error.

SOCKS Gateways

When you use proxy chaining to forward DRTR requests through an upstream SOCKS gateway, you must configure the SOCKS gateway.

Section B: Configuring Blue Coat Web Filter

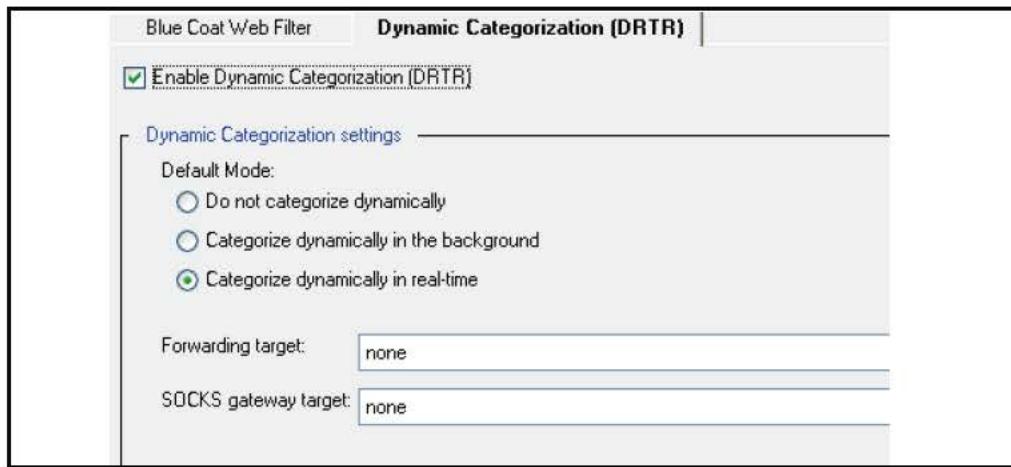
If both a forwarding host or group alias and a SOCKS gateway are specified in the proxy chain, the SG appliance attempts the connection through the SOCKS gateway to the forwarding target.

Configuring DRTR

Complete the following procedures to configure DRTR. Note that Enable Dynamic Categorization (DRTR) is enabled by default.

To configure DRTR:

1. Select **Configuration > Content Filtering > Blue Coat > Dynamic Categorization (DRTR)**.



Categorize dynamically in real-time is enabled by default. If DRTR is disabled, the SG appliance does not contact the service when no category is found for a URL in the database, and all Dynamic Categorization properties specified in policy are ignored. If DRTR is enabled for BCWF, it is only invoked while BCWF is in use.

2. Select one of the following settings:

- a. **Do not categorize dynamically.** The loaded database is consulted for category information. URLs not found in the database show up as category **none**. Dynamic categorization is still possible, but only occurs when explicitly invoked by policy.
- b. **Categorize dynamically in the background.** In background mode, after a call is made to the dynamic categorization service, the URL request immediately proceeds without waiting for the external service to respond. The system category *pending* is assigned to the request, indicating that the policy was evaluated with potentially incomplete category information.

The results of DRTR are entered into a categorization cache (as are the results of real-time requests). This cache ensures that any subsequent requests for the same or similar URLs can be categorized quickly, without needing to query the external service again.

- c. **Categorize dynamically in real-time (default).** The advantage of real-time mode categorization is that Blue Coat policy has access to the results, allowing policy decisions to be made immediately upon receiving all available information.

3. Click **Apply** to commit the changes to the SG appliance.

Section B: Configuring Blue Coat Web Filter

About DRTR States

DRTR has three states:

- Enabled: The service attempts to categorize unrated Web sites.
- Disabled: If the service is disabled, the SG appliance does not make any contact with the service, regardless of any installed policy.
- Suspended: If BCWF license expires and DRTR is enabled, the service enters a suspended state; during this time the SG appliance does not make contact with the service, regardless of any installed policy. After BCWF license is updated, DRTR returns to enabled status.

To view DRTR status (CLI only):

At the (config) prompt, enter the following command:

```
SGOS# (config content-filter) view
Provider: Blue Coat
Dynamic Categorization:
Service:           Enabled/Disabled/Suspended <---one state is displayed
```

Diagnostics

Diagnostics allows you to see all categories available for use in policy or test a URL against the database. Categories are not displayed for a vendor or local database if no database has been downloaded.

To see all available categories:

1. On the Configuration > Content Filtering > General page, click **View Categories**.
2. To see what categories a Web site is assigned by your current configuration, enter the URL into the **URL field** and click **Test**.

Related CLI Syntax to Manage the BCWF Database

- To enter configuration mode:

```
SGOS#(config) content-filter
```

- The following subcommands are available:

```
SGOS#(config content-filter) provider bluecoat {enable | disable}
SGOS#(config content-filter) provider bluecoat lookup-mode {always | uncategorized}
SGOS#(config content-filter) categories
SGOS#(config content-filter) bluecoat
SGOS#(config bluecoat) download {all-day | auto | between-hours | encrypted-password | get-now | password | url | username}
SGOS#(config bluecoat) service {enable | disable}
SGOS#(config bluecoat) service {forward {none | host_or_group_alias} | mode {background | realtime | none} | socks-gateway {none | gateway_alias}}
SGOS#(config bluecoat) no download
SGOS#(config bluecoat) {exit | view}
SGOS#(config content-filter) test-url url
```

[Section C: Configuring a Local Database](#)

Section C: Configuring a Local Database

This section describes how to select and refer to a local database and how to schedule the database update schedule.

Selecting the Local Database and Downloading the Database

Two main reasons to use a local database instead of a policy file for defining categories are:

- A local database is more efficient than policy if you have a large number of URLs.
- A local database separates administration of categories from policy. This separation is useful for three reasons:
 - It allows different individuals or groups to be responsible for administrating the local database and policy.
 - It keeps the policy file from getting cluttered.
 - It allows the local database to share categories across multiple boxes that have different policy.

However, some restrictions apply to a local database that do not apply to policy definitions:

- No more than 200 separate categories are allowed.
- Category names must be 32 characters or less.
- A given URL pattern can appear in no more than four category definitions.

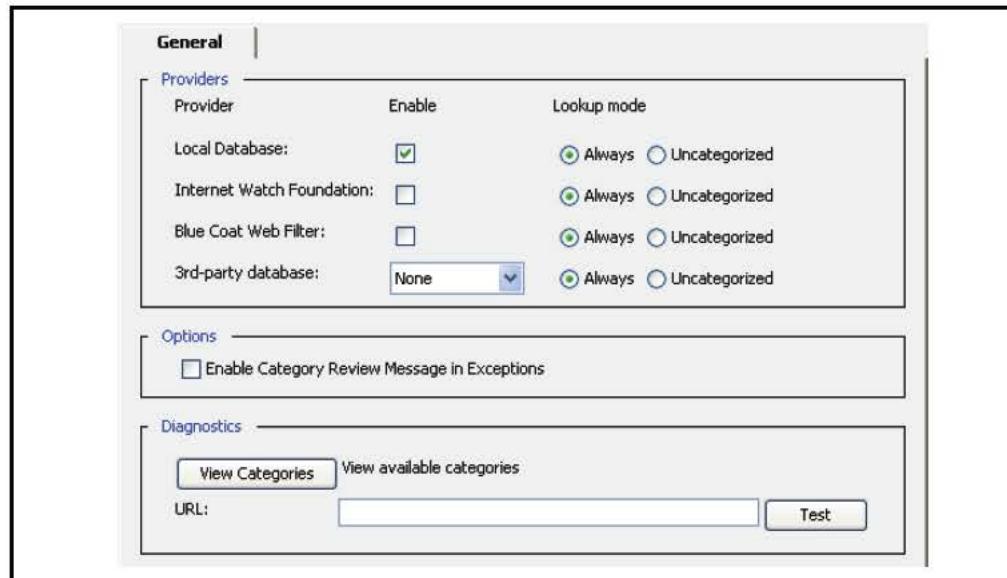
You can use any combination of the local database, policy files, or the VPM to manage your category definitions. See “[Applying Policy to Categorized URLs](#)” on page 35 for more information. You can also use both a local database and a third-party vendor for your content filtering needs.

Note: Blue Coat recommends locating your local database on the same server as any policy files you are using.

To configure local database content filtering:

1. Select **Configuration > Content Filtering > General**.

Section C: Configuring a Local Database



2. Select **Local Database**.
3. Select the **Lookup Mode**.
 - a. The default is **Always**, which specifies that the Local database will always be consulted for category information.
 - b. **Uncategorized** specifies that the lookup is skipped if the URL has already been found in policy.
4. Click **Apply** to commit the changes to the SG appliance.
5. Select **Configuration > Content Filtering > Local Database**.
6. If the database is located on a server that requires a password for access, you must configure the SG appliance to use that password when accessing the database:
 - a. Click **Change Password**. The Change Password dialog displays.
 - b. Enter your password and click **OK**.
7. Download the database:
 - a. In the **URL** field, enter the location of the file to be downloaded.
 - b. Click **Download Now**. The **Download Status** dialog displays.
 - c. To view a download log, click **Close** to close the Download Status dialog, and then click **View Download Log**.

Download log:

```
Local database download at: 2007/06/07 17:40:42-0400
Downloading from ftp://1.1.1.1/list-1000000-cat.txt
Download size: 16274465
Database date: Wed, 07 Jun 2007 08:11:51 UTC
Total URL patterns: 1000000
Total categories: 10
```
 - d. Click **OK**.
8. Click **Apply** to commit the changes to the SG appliance.

Section C: Configuring a Local Database

Future Downloads

You can return to this screen at any time and download a database on demand (independent of the automatic download feature, which is described in the next section).

Ordinarily, the SG appliance checks to see if the database has changed before initiating a download. If the database is the most current, no download is performed.

Note: Incremental updates are not available for Local Database.

Specifying a Custom Time Period to Update a Local Database

The SG appliance checks for updates to the database several times an hour. When an update is available, it is automatically downloaded and applied. Typically, an update contains only the information that has changed.

You can prevent this automatic check entirely by disabling automatic updates. You can also restrict the checks to occur only within a specific time period. For example, you can choose to check for updates between 8 am and 11 pm only. The time frame is always local time.

Note: When the database is downloaded, a log is available that includes detailed information about how the database was updated. You can view the download log in the Management Console by selecting **Statistics > Advanced > Content Filter Service**, or in the CLI (SGOS#(config) show content-filter status).

To specify a custom time period for updates:

1. Select **Configuration > Content Filtering > Local Database**. The **Automatically check for updates** check box is selected by default.



2. Select the **Only between the hours of** check box. The time frame is local time.
3. Click the arrows to view the drop-down lists and set the time period for your update schedule. For example, to check for updates between the hours of 8 am and midnight, set the first box to 08:00 and the second box to 23:59.
4. Click **Apply** to commit the changes to the SG appliance.

Diagnostics

Allows you to see all categories available for use in policy or test a URL against the database. Categories are not displayed for a vendor or local database if no database has been downloaded.

To see all available categories:

1. On the **Configuration > Content Filtering > General page**, click **View Categories**.
2. To see what categories a Web site is assigned by your current configuration, enter the URL into the **URL field** and Click **Test**.

Section C: Configuring a Local Database

Related CLI Syntax to Configure Content Filtering

- To enter configuration mode:
SGOS#(config) **content-filter**
- The following subcommands are available:

```
SGOS#(config content-filter) provider local {enable | disable}
SGOS#(config content-filter) provider local lookup-mode {always | uncategorized}
SGOS#(config content-filter) categories
SGOS#(config content-filter) local
SGOS#(config local) download {all-day | auto | between-hours | encrypted-password | get-now | password | url | username}
SGOS#(config local) source
SGOS#(config local) clear
SGOS#(config local) {view | exit}
SGOS#(config content-filter) test-url url
```

Section D: Configuring Internet Watch Foundation

Section D: Configuring Internet Watch Foundation

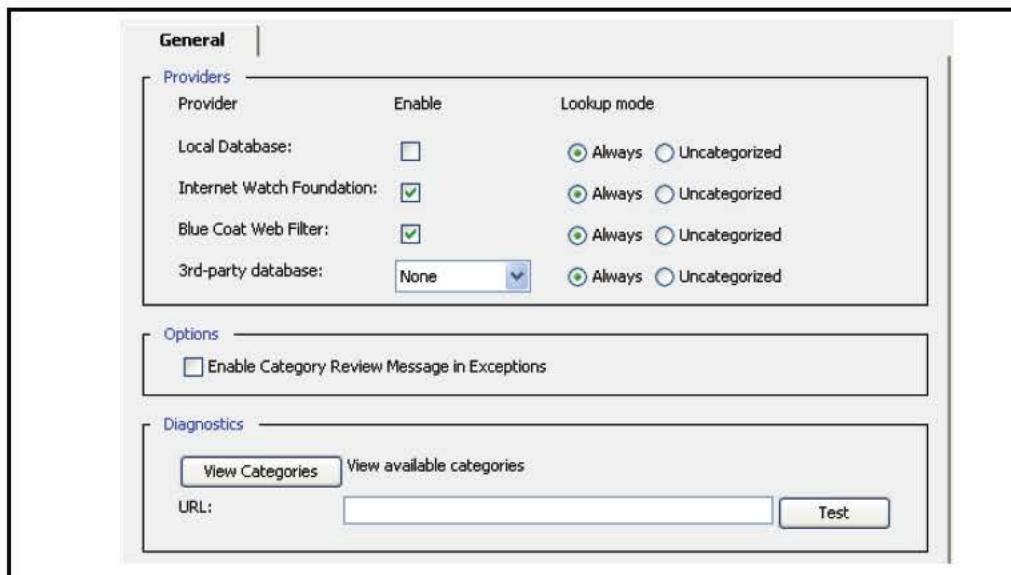
This section describes how to select the Internet Watch Foundation (IWF) database and how to schedule the database update schedule.

The IWF is a non-profit organization that provides to enterprises a list of known child pornography URLs. The IWF database features a single category called **IWF-Restricted**, which is detectable and blockable using policy. IWF can be enabled along with other content filtering services.

Selecting the IWF Database

To configure IWF content filtering:

1. Select **Configuration > Content Filtering > General**.



2. Select **Internet Watch Foundation**.
3. Select the **Lookup Mode**.
 - a. The default is **Always**, which specifies that IWF will always be consulted for category information.
 - b. **Uncategorized** specifies that the lookup is skipped if the URL has already been found in policy or a Local database.
4. Click **Apply** to submit the changes to the SG appliance.
5. Select **Configuration > Content Filtering > IWF**.

Section D: Configuring Internet Watch Foundation

The screenshot shows the 'Internet Watch Foundation' download interface. It includes a 'Download' section with a 'Username' field set to '<not required>', a 'Change Password' button, and a 'URL' field containing 'https://list.bluecoat.com/iwf/activity/download/iwf.db'. Below the URL are three buttons: 'Set to default', 'Download now', and 'View Download Status'. At the bottom are two checkboxes: one checked for 'Automatically check for updates' and another unchecked for a specific time range ('Only between the hours of 00:00 and 23:59').

6. Download the database:

- The default database download location displays in the **URL** field.

Note: Only enter a new URL if instructed. Otherwise, accept the default.

- Click **Download Now**. The **Download Status** dialog displays.

When the operation is complete, the dialog changes to indicate installation status.

- Click **Results** to see the IWF download log:

```
Download log:  
IWF download at: 2007/06/07 17:40:42-0400  
Downloading from https://list.bluecoat.com/iwf/activity/download/  
iwf.db  
Requesting differential update  
Differential update applied successfully  
Download size: 84103448  
Database date: Wed, 07 Jun 2007 08:11:51 UTC  
Database expires: Fri, 07 Jul 2007 08:11:51 UTC  
Database version: 2005040
```

- Click **OK**.

7. Click **Apply** to commit the changes to the SG appliance.

Future Downloads

You can return to this screen at any time and download a database on demand (independent of the automatic download feature, which is described in the next section). Ordinarily, the SG appliance checks to see if the database has changed before initiating a download. If the database is the most current, no download is performed. If an incremental update is available on the server, then it is downloaded (an incremental update contains only the changes between the current installed version and the latest published version of the database, and is much smaller than a full copy of the database).

Section D: Configuring Internet Watch Foundation

Specifying a Custom Time Period to Update IWF

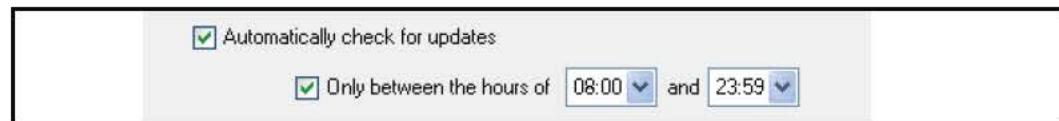
The SG appliance checks for updates to the categorization database several times an hour. When an update is available, it is automatically downloaded and applied. Typically, an update contains only the information that has changed.

You can prevent this automatic check entirely by disabling automatic updates. You can also restrict the checks to occur only within a specific time period. For example, you can choose to check for updates between 8 am and 11 pm only. The time frame is always local time.

Note: When the database is downloaded, a log is available that includes detailed information about how the database was updated. You can view the download log in the Management Console by selecting **Statistics > Advanced > Content Filter Service**, or in the CLI (SGOS#(config) show content-filter status).

To specify a custom time frame for updates:

1. Select **Configuration > Content Filtering > IWF**. The **Automatically check for updates** check box is selected by default.



2. Select the **Only between the hours of** check box. The time frame is always local time.
3. Click the arrows to view the drop-down lists and set the time period for your update schedule. For example, to check for updates between the hours of 8 am and midnight, set the first box to 08:00 and the second box to 23:59.
4. Click **Apply** to commit the changes to the SG appliance.

Diagnostics

This allows you to test a URL against the database.

To test a URL:

1. Select **Configuration > Content Filtering > General**.
2. Enter the URL into the **URL** field.
3. Click **Test**.

Related CLI Syntax to Manage IWF

- To enter configuration mode:
SGOS#(config) **content-filter**
- The following subcommands are available:
SGOS#(config content-filter) **provider iwf {enable | disable}**
SGOS#(config content-filter) **provider iwf lookup-mode {always | uncategorized}**
SGOS#(config content-filter) **iwf**

Section D: Configuring Internet Watch Foundation

```
SGOS#(config iwf) download {all-day | auto | between-hours |
    encrypted-password | get-now | password | url | username}
SGOS#(config iwf) no download
SGOS#(config iwf) {exit | view}
SGOS#(config content-filter) test-url url
```

Section E: Configuring a Third-Party Vendor

Section E: Configuring a Third-Party Vendor

This section describes how to select and configure your preferred third-party vendor and how to schedule the database update schedule.

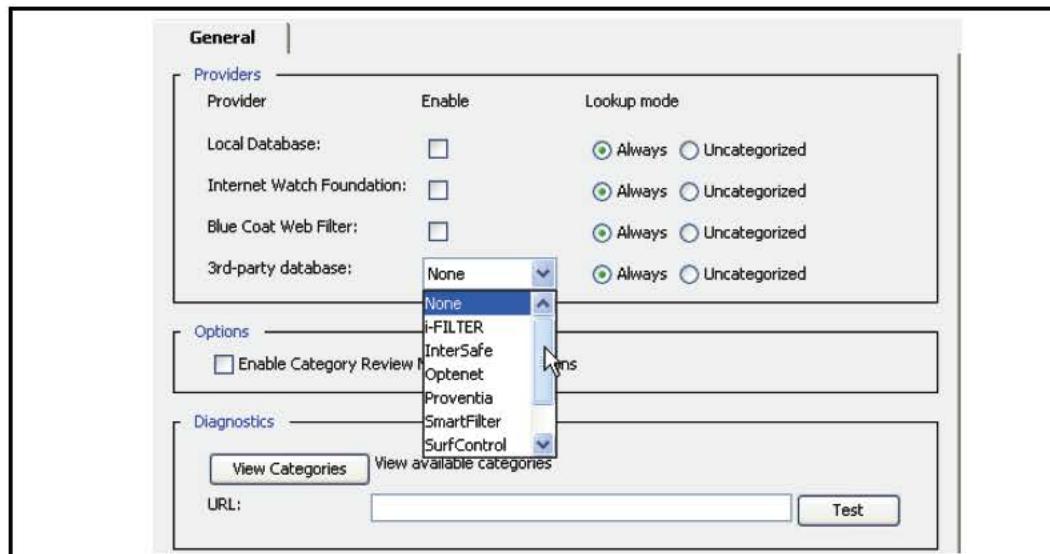
Most of the third-party vendor configuration tasks are identical, but there are a few with vendor-specific options. As you follow the procedures, you are prompted to proceed to another section for these vendors to continue the configuration.

Selecting the Provider and Downloading the Database

This procedure assumes you have a valid account with your preferred vendor.

To configure third-party content filtering:

1. Select Configuration > Content Filtering > General.



2. From the **3rd-party database** drop-down list, select your preferred vendor.
3. Select the **Lookup Mode**.
 - a. The default is **Always**, which specifies that the third-party database will always be consulted for category information.
 - b. **Uncategorized** specifies that the lookup is skipped if the URL has already been found in policy, a Local database, the Internet Watch Foundation (IWF) database, or BCWF.
4. (Optional and applicable for SmartFilter and BCWF only) Select **Enable Category Review Message in Exceptions**. This adds a link to the default content filter exception page that can be used to request review of the categories assigned to a blocked URL.
Two substitutions (`$(exception_category_review_url)` and `$(exception_category_review_message)`) are automatically appended to the `help` element of all exception definitions. For information on using the `$(exception.help)` element, refer to *Volume 6: VPM and Advanced Policy*.

Section E: Configuring a Third-Party Vendor

Note: The substitution values are empty if the provider was not consulted for categorization, or if the categorization process failed due to an error.

5. Click **Apply** to commit the changes to the SG appliance.
6. Proceed accordingly:
 - **SmartFilter:** Continue with: “Configuring SmartFilter” on page 30.
 - **Websense:** Continue with: “Configuring Websense (on-box)” on page 31.
 - **i-Filter, InterSafe, Optenet, Proventia, SurfControl, or Webwasher:** Continue with Step 7.
7. Select **Configuration > Content Filtering > vendor:**

The screenshot shows the 'SurfControl' configuration screen with the 'Download' tab selected. It includes fields for 'Username' (catalina56), a 'Change Password' button, a 'URL' field containing 'https://list.bluecoat.com/surfcontrol/activity/download/surfcontrol.db', a 'Set to default' button, a 'Download now' button, a 'View Download Status' button, a checked 'Automatically check for updates' checkbox, and a time range selector for 'Only between the hours of 00:00 and 23:59'.

8. (This example uses Surf Control.) If the database is located on a server that requires a password for access, you must configure the SG appliance to use that password when accessing the database:
 - a. Enter your third-party vendor username.
 - b. Click **Change Password**. The Change Password dialog displays.
 - c. Enter your password and click **OK**.
9. Download the database:
 - a. The default database download location is displayed in the **URL** field. If you have been instructed to use a different URL, enter it here (optional: click **Set to default** to always use this location).
 - b. Click **Download Now**. The Installation Status dialog box displays.
When the operation is complete, the dialog changes to indicate installation status.
 - c. Click **Results** to see the completion message:

Section E: Configuring a Third-Party Vendor

```

Download log:
SurfControl download at: 2007/06/07 17:40:42-0400
Downloading from https://list.bluecoat.com/.../download/
surfcontrol.db
Warning: Unable to determine current database version; requesting full
update
Download size: 8106572
Database date: Wed, 07 Jun 2007 08:11:51 UTC
Database expires: Fri, 07 Jul 2007 08:11:51 UTC
Database version: 3

```

- d. Click **OK**.

10. Click **Apply** to commit the changes to the SG appliance.
11. Continue with "Specifying a Custom Time Period to Update a Third-Party Database" on page 33.

Future Downloads

You can return to this screen at any time and download a database on demand (independent of the automatic download feature, which is described in the next section).

Ordinarily, the SG appliance checks to see if the database has changed before initiating a download. If the database is the most current, no download is performed. If an incremental update is available on the server, then it is downloaded (an incremental update contains only the changes between the current installed version and the latest published version of the database, and is much smaller than a full copy of the database).

Configuring SmartFilter

The SmartFilter database configuration screen contains unique options.

Configure SmartFilter:

1. Select Configuration > Content Filtering > SmartFilter:

The screenshot shows the 'SmartFilter' configuration screen. It has a left sidebar with a tree view containing 'SmartFilter' and 'Download'. Under 'Download', there are two fields: 'License key:' containing '14876-e4k5o6-ekdo8' and 'Server:' containing 'list.smartfilter.com'. At the bottom are two buttons: 'Download now' and 'View Download Status'.

2. Configure SmartFilter:

- a. In the **License key** field, enter the customer serial number assigned you by Secure Computing.
- b. In the **Server** field, the default server is displayed. If you have been instructed to use a different server, enter the hostname or IP address here.
- c. Click **Download now**. The SmartFilter Installation status dialog box displays with the message **SmartFilter download in progress**.

Section E: Configuring a Third-Party Vendor

When the operation is complete, the dialog changes to indicate installation status.

- d. Click **Results** to see the completion message:

Download log:

```
SmartFilter download at: 2007/06/07 17:40:42-0400
Checking incremental update
    Warning: Unable to open input control list
    Warning: Unable to open installed control list
Downloading full control file
    SmartFilter download at: 19 June 2007 17:40:42-0400
    Downloading from http://example.com/...version=4.0
Download size:        45854194
Database version:    95
Database date:       Wed, 07 Jun 2007 08:11:51 UTC
Database expires:    Fri, 07 Jul 2007 08:11:51 UTC
```

Note: The first time you download a SmartFilter database, warnings appear in the results message under Checking incremental update. These are expected, and represent the normal process of checking to see if an incremental update is possible. The next time you download a SmartFilter database, the SG appliance checks the previously downloaded database, and downloads only what is necessary to keep the database current.

3. Click **Apply** to commit the changes to the SG appliance.
4. Continue with “[Specifying a Custom Time Period to Update a Third-Party Database](#)” on page 33.

Configuring Websense (on-box)

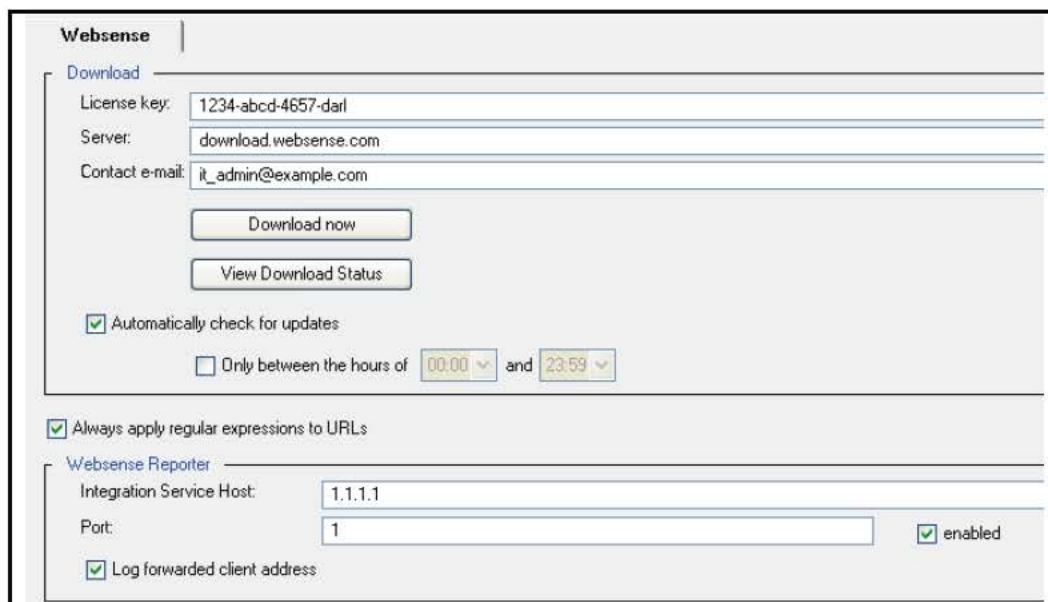
The Websense database configuration screen contains unique options.

Note: Websense databases contain a category called **User-Defined** to support locally-specified categorizations on other platforms. Do not use this category on the SG appliance. Instead, define your own categories through the SG appliance and assign URLs to them using Policy (see page “[Defining Custom Categories in Policy](#)” on page 38), or using a local category database (refer to *Volume 4: Securing the Blue Coat SG Appliance*).

To configure Websense (on-box):

1. Select **Configuration > Content Filtering > Websense**.

Section E: Configuring a Third-Party Vendor



2. In the **License Key** field, enter the key assigned to you for downloading the Websense database.
3. In the **Server** field, the default server is displayed. If you have been instructed to use a different server, enter the hostname or IP address here.
4. (Optional) In the **Contact e-mail** field, enter an e-mail address by which Websense can contact you.
5. Click **Download now**. The Websense Installation status dialog box displays with the message **Websense download in progress**.
6. Click **Apply** to view the Websense download log:

```
Download log:
Websense download at: 2007/06/21 17:40:42-0400
    No database is currently installed
    Attempting full download
    Downloading from download.websense.com
    Processing download file
        Retrieved full update
    Download size:      147079939
    Database version:  82300
    Database date:    2007/06/21
    License expires:  2007/07/21 08:11:51 UTC
    License max users: 25
    Licenses in use:   0
    Library version:   3.2.0.0 [BCSI rev A]
```

7. Click **OK**.
8. (Optional) **Always apply regular expressions to urls**:

Section E: Configuring a Third-Party Vendor

Select this option to force an additional regular expression lookup for each URL to be categorized. Normally, regular expression lookups are done only when no category is found in the Websense database. If this option is selected, regular expression lookups always occur, even for categorized URLs. Selecting this option can cause a significant reduction in lookup performance, but allow certain sites (such as translation, search engine, and link-cache sites) to be categorized more accurately.

9. To use the Websense Reporter, you must enable the Websense Integration Service.
 - a. In the **Integration Service Host** field, enter the Integration Service Host IP (which has the same IP address as the Websense Log Server).
 - b. In the **Port** field, specify the port of the Websense Integration Service. It must be between 0 and 65535 and match the port selected on the Integration Service host.
 - c. Select **Enabled** to enable the service.
 - d. (Optional) Select **Log forwarded client address**. Normally, the SG logs the actual client IP address to the Websense Reporter log. You can configure the SG to log an address obtained from the X-Forwarded-For HTTP Header (if present and valid) instead. This is useful in some specific network topologies.

Note: The Policy Server, the Log Server, and Reporter must be installed and enabled on your PC before Reporter can be used. For information on Websense products, refer to: <http://www.websense.com/support/documentation/integrationservice>.

You must also set up access logging on the SG appliance with Websense as the client. For more information on configuring a Websense access logging client, refer to *Volume 8: Access Logging*.

10. Click **Apply** to commit the changes to the SG appliance.
11. Proceed to the “[Specifying a Custom Time Period to Update a Third-Party Database](#)” on page 33.

Specifying a Custom Time Period to Update a Third-Party Database

The SG appliance checks for updates to the database several times an hour. When an update is available, it is automatically downloaded and applied. Typically, an update contains only the information that has changed.

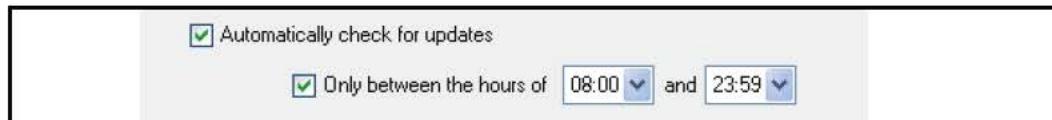
You can prevent this automatic check entirely by disabling automatic updates. You can also restrict the checks to occur only within a specific time period. For example, you can choose to check for updates between 8 am and 11 pm only. The time frame is always local time.

Note: When the database is downloaded, a log is available that includes detailed information about how the database was updated. You can view the download log in the Management Console by selecting **Statistics > Advanced > Content Filter Service**, or in the CLI (SGOS#(config) show content-filter status).

To specify a custom time period for updates:

1. Select **Configuration > Content Filtering > vendor**. The **Automatically check for updates** check box is selected by default.

Section E: Configuring a Third-Party Vendor



2. Select the **Only between the hours** of check box. The time frame is always local time.
3. Click the arrows to view the drop-down lists and set the time period for your update schedule. For example, to check for updates between the hours of 8 am and midnight, set the first box to 08:00 and the second box to 23:59.
4. Click **Apply** to commit the changes to the SG appliance.

Diagnostics

This allows you to see all categories available for use in policy or test a URL against the database. Categories are not displayed for a vendor or local database if no database has been downloaded.

To see all available categories or test a URL:

1. On the Configuration > Content Filtering > General page, click **View Categories**.
2. To see what categories a Web site is assigned by your current configuration, enter the URL into the **URL** field.
3. Click **Test**.

Related CLI Syntax to Manage Third-Party Vendor Content Filtering

- ❑ To enter configuration mode:
SGOS#(config) **content-filter**
- ❑ The following subcommands are available:

```
SGOS#(config content-filter) {i-filter | intersafe | optenet |
proventia | smartfilter | surfcontrol | websense | webwasher}
SGOS#(config content-filter) provider 3rd-party lookup-mode {always |
uncategorized}
SGOS#(config content-filter) provider 3rd-party vendor
SGOS#(config vendor) download {all-day | auto | between-hours |
encrypted-password | get-now | password | url | username}
SGOS#(config vendor) view
SGOS#(config smartfilter) download license license_key
SGOS#(config smartfilter) download server ip_address_or_hostname
SGOS#(config smartfilter) allow-rdns | no allow-rdns
SGOS#(config smartfilter) use-search-keywords
SGOS#(config websense) download email-contact e-mail_address
SGOS#(config websense) download server ip_address_or_hostname
SGOS#(config websense) download license license_key
SGOS#(config websense) {always-apply-regexes | no always-apply-
regexes}
SGOS#(config websense) integration-service {enable | disable}
SGOS#(config websense) integration-service host ip_address_or_hostname
SGOS#(config websense) integration-service port {0-65535}
```

Section F: Applying Policy

Section F: Applying Policy

This section discusses the interaction between content filtering categories and the application of control policies.

Applying Policy to Categorized URLs

Policy is applied to categories the same way as individual URLs: create policies that restrict, allow, and track access. Policy rules are created by composing Blue Coat Content Policy Language (CPL) or with the Visual Policy Manager (VPM).

Note: If you have extensive category definitions, Blue Coat recommends that you put them into a local database rather than into a policy file. The local database stores custom categories in a more scalable and efficient manner, and separates the administration of categories from policy. See "[Section C: Configuring a Local Database](#)" on page 20.

The policy trigger `category=` is used to test the category or categories assigned to the request URL, and thus make a policy decision. For example, to block all requests for URLs that are categorized as Sports:

```
DENY category=Sports
```

The following example demonstrates a condition that is true when a request contains the Websense content categories Sexuality and Drugs:

```
<proxy>
    category=(sexuality, drugs)
```

You can block multiple categories with a single rule:

```
category=(Sports, Gambling, Shopping) exception(content_filter_denied)
```

In this example, three categories are blocked and instead the predefined exception page `content_filter_denied` is served; by default this indicates that the request was denied due to its content and specifies the categories found.

The following example shows a condition that includes an extensive number of categories:

```
category=(Abortion, Activist, Adult, Gambling, Illegal, Hacking,
Militancy, Racism, Shopping, Tasteless, Violence, Weapons)
```

URLs that are not categorized are assigned the system category `none`. This is *not* an error condition; many sites (such as those inside a corporate intranet) are unlikely to be categorized by a commercial service. Use `category=none` to detect uncategorized sites and apply relevant policy. The following example disallows access to uncategorized sites outside of the corporate network:

```
define subnet intranet
    10.0.0.0/8 ; internal network
    192.168.123.45; external gateway
end
<proxy>
    ; allow unrestricted access to internal addresses
    ALLOW url.address=intranet

    ; otherwise (internet), restrict Sports, Shopping and uncategorized
    sites
    DENY category=(Sports, Shopping, none)
```

Section F: Applying Policy

Such category tests can also be combined with other types of triggers to produce more complex policy, such as:

- ❑ Restrict access by category and time: block sports from 6 am to 6 pm:
`category=Sports time=0600..1800 DENY`
- ❑ Restrict by category and user identity: only members of the group Sales are permitted to visit Shopping sites:
`category=Shopping group=!Sales DENY`
- ❑ Require special authentication for access to certain categories:
`category=Hacking authenticate(restricted.realm)`
where `restricted.realm` is an authentication realm you have configured.
- ❑ Log certain types of access:
`category=Adult action.Log_adult_site_access(yes)`
where `Log_adult_site_access` is a policy action defined elsewhere that records extra information about this request in the event log.

Typically, `category=` can be used in policy anywhere that a basic URL test can be used. Refer to *Volume 10: Blue Coat SG Appliance Content Policy Language Guide* for more details.

Depending on which provider you have selected and whether you have defined any of your own categories in policy (see “[Defining Custom Categories in Policy](#)” on page 38), you have a number of possible category names that can be used with `category=`. To review the valid category names, use the `categories` CLI command or click **View Categories** in the Management Console: **Configuration > Content Filtering > General**.

The `category=` expressions are normally put in <Proxy> Layers (VPM: **Web Access Layers**) because the goal of content filtering policy is to control requests from users. They can also be used in <Cache> (VPM: **Web Content Layers**) Layers. Either way, policy is enforced on all user requests.

It is possible for an attempt to categorize a URL to fail—for example, if no database is loaded, your license is expired, or if a system error occurs. In such a case, the category is considered *unavailable* and triggers such as:

```
category=Sports
```

are false, even if the URL is actually a sports site, because the SG appliance is unable to determine the category. When the policy depends on the category of a URL, you do not want such errors to inadvertently allow ordinarily restricted content to be served by the SG appliance. You can control how the SG appliance treats these situations with the condition:

```
category=unavailable
```

which is true in these cases. In continuing with the example, to make sure that Sports is always blocked, even when errors occur (this is a mode of operation called *fail-closed*), use a rule such as:

```
category=(sports, unavailable) exception(name_of_exception_page)
```

This rule is true if the category is sports or if the category could not be determined, and in either case the proper exception page is served instead of the restricted content.

The category `unlicensed` is assigned in addition to `unavailable` when the failure to categorize occurred because of license expiry. That can be caused by the expiration of your Blue Coat license to use content filtering, or because of expiration of your license from the provider. You can use

Section F: Applying Policy

category=unlicensed

to detect this situation as a distinct case from other causes of unavailability.

You can also use this feature with custom exception pages (refer to *Volume 6: VPM and Advanced Policy*):

```
<proxy>
  category=sports time=0800..1800 exception(sports_during_bus_hours)
  category=unlicensed exception(contact_admin_re_license)
  category=unavailable exception(content_filter_unavailable)
```

where *sports_during_bus_hours* is a custom exception page you have created to respond to requests for Sports pages between 8 am and 6 pm local time.

contact_admin_re_license is another page that instructs the user to inform the administrator about license expiry, and is served if a license check fails. When the category is unavailable for some other reason, the pre-defined exception (*content_filter_unavailable*) is served.

The most common reason (other than license expiry) why categories are unavailable is that a provider is selected but no database is installed. Barring hardware or network problems that might cause a downloaded database to become corrupted and unreadable, it is unlikely that the database will suddenly become unavailable.

To define policies on the SG appliance, use either the VPM or manually edit Policy files.

Content filtering policies are usually found in <Proxy> and <Cache> layers.

If you are using content filtering to manage a type of content globally, create these rules in the <Cache> layer.

However, if your content filtering policy is dependent on user identity or request characteristics, create these rules in the <Proxy> layer.

Using Content Filtering Vendors with Blue Coat Policies

The SG appliance provides the ability to define flexible Web access and control policies. With content filtering, you can set up policies to provide a customized level of Web-site access control. With vendor-based content filtering, these policies use and can supplement vendor categories. By supplementing content filtering vendor categories, you can further refine the type of content filtering the SG appliance performs. For example, if **Travel** is a vendor-defined content category, you can define a policy that allows only Human Resources staff to access travel sites. You can define policies that filter by a variety of conditions, including category, protocol (including MMS and RTSP streaming protocols), time of day, and user or user groups.

Section F: Applying Policy

Example

Policy: Limit employee access to travel Web sites.

The first step is to rephrase this policy as a set of rules. In this example, the model of a general rule and exceptions to that rule is used:

- Rule 1: All users are denied access to travel sites
- Rule 2: As an exception to the above, Human Resources users are allowed to visit Travel sites

Before you can write the policy, you must be able to identify users in the Human Resources group. You can do this with an external authentication server, or define the group locally on the SG appliance. For information on identifying and authenticating users, refer to *Volume 4: Securing the Blue Coat SG Appliance*.

In this example, a group called `human_resources` is identified and authenticated through an external server called `my_auth_server`.

This then translates into a fairly straightforward policy written in the local policy file:

```
<proxy>
; Ensure all access is authenticated
    Authenticate(my_auth_server)

<proxy>
; Rule 1: All users denied access to travel
    DENY category=travel

<proxy>
; Rule 2: Exception for HR
    ALLOW category=travel group=human_resources
    DENY category=sites
```

Example

Policy: Student access to Health sites is limited to a specified time of day, when the Health 100 class is held.

This time the policy contains no exceptions:

- Rule 1: Health sites can be accessed Monday, Wednesday, and Friday from 10-11am.
- Rule 2: Health sites can not be accessed at other times.

```
define condition Health_class_time
    weekday=(1, 3, 5)  time=1000..1100
end

<proxy>
; 1) Allow access to health while class in session
    ALLOW category=health condition=health_class_time
; 2) at all other times, deny access to health
    DENY category=health
```

Defining Custom Categories in Policy

You can use CPL to create your own categories and assign URLs to them. This is done with the `define category` construct (for more complete information on the `define category` construct, refer to *Volume 10: Blue Coat SG Appliance Content Policy Language Guide*). To add URLs to a category, list them in the definition. You only need to specify a partial URL:

- hosts and subdomains within the domain you specify will automatically be included

Section F: Applying Policy

- if you specify a path, all paths with that prefix are included (if you specify no path, the whole site is included)

Example:

```
define category Grand_Canyon
    kaibab.org
    www2.nature.nps.gov/air/webcams/parks/grcacam
    nps.gov/grca
    grandcanyon.org
end
```

Any URL at `kaibab.org` is now put into the `Grand_Canyon` category (in addition to any category it might be assigned by a provider). Only those pages in the `/grca` directory of `nps.gov` are put in this category.

Nested Definitions and Subcategories

You can define subcategories and nest category definitions by adding a `category=<name>` rule. To continue the example, you could add:

```
define category Yellowstone
    yellowstone-natl-park.com
    nps.gov/yell/
end
define category National_Parks
    category=Grand_Canyon; Grand_Canyon is a subcategory of
    National_Parks
    category=Yellowstone; Yellowstone is a subcategory of National_Parks
    nps.gov/yose; Yosemite - doesn't have its own category (yet)
end
```

With these definitions, pages at `kaibab.org` are assigned *two* categories: `Grand_Canyon` and `National_Parks`. You can add URLs to the `Grand_Canyon` category and they are automatically added by implication to the `National_Parks` category as well.

Multiple unrelated categories can also be assigned by CPL. For example, by adding:

```
define category Webcams
    www2.nature.nps.gov/air/webcams/parks/grcacam
end
```

the URL, `http://www2.nature.nps.gov/air/webcams/parks/grcacam/grcacam.htm`, will have three categories assigned to it:

- `Grand_Canyon` (because it appears in the definition directly)
- `National_Parks` (because `Grand_Canyon` is included as a subcategory)
- `Webcams` (because it also appears in this definition)

However, the other sites in the `Grand_Canyon` category are not categorized as `Webcams`. This can be seen by testing the URL (or any other you want to try) clicking the **Test** button on the Management Console or the `test-url` command in the CLI.

You can test for any of these categories independently. For example, the following example is a policy that depends on the above definitions, and assumes that your provider has a category called `Travel` into which most national park sites probably fall. The policy is intended to prevent access to travel sites during the day, with the exception of those designated `National_Parks` sites. But the `Grand_Canyon` webcam is an exception to that exception.

Section F: Applying Policy

Example:

```
<proxy>
    category=Webcams DENY
    category=National_Parks ALLOW
    category=Travel time =0800..1800 DENY
```

Click the **Test** button on the Management Console or the `test-url` command in CLI to validate the categories assigned to any URL. This can help you to ensure that your policy rules have the expected effect (refer to “Configuring Policy Tracing” in *Volume 10: Blue Coat SG Appliance Content Policy Language Guide*).

If you are using policy-defined categories and a content-filter provider at the same time, be sure that your custom category names do not coincide with the ones supplied by your provider. You can also use the same names—this adds your URLs to the existing categories, and extends those categories with your own definitions. For example, if the webcam mentioned above was not actually categorized as Travel by your provider, you could do the following to add it to the Travel category (for the purpose of policy):

```
define category Travel ; extending a vendor category
    www2.nature.nps.gov/air/webcams/parks/grcacam/ ; add the GC webcam
end
```

Note: The policy definitions described in this section can also be used as definitions in a local database. See “[Configuring a Local Database](#)” on page 20 for information about local databases.

Notes

- When you use an expired database, the category **unlicensed** is assigned to all URLs and no lookups occur on the database. This can occur even if your download license with the database vendor is still valid, but you have not downloaded a database for a long time (databases expire after a certain number of days). You can view the date that your database expires (or expired) in the download log or by using the `view` command in the CLI.

When you download a database, you can see the download log as soon as the download is complete. To see the download log when you download a database, click **Results** in the Installation Status dialog when the download is complete.

To see the last download log without doing another download, enter the following CLI (config) commands:

```
SGOS#(config) content-filter
SGOS#(config content-filter) view
```

- When your license with the database vendor expires, you can no longer download. This does not have an immediate effect—you can still use the database you have for a period of time. But eventually, the database expires and you receive the category **unlicensed**, as described above.
- If HTTPS Intercept is disabled and a requested HTTPS host is categorized in a content filtering database, then filtering applies. However, if the request contains a path and the categorization relies on the host/relative path, content filtering only filters on the host name because the path is not accessible. This might result in a different categorization than if the host plus path were used.

Section F: Applying Policy

- If you receive an error message when downloading a content filtering database, check the error message (in the Management Console, click **Results** on the Installation status dialog; in the CLI, the results message displays in the event of an error). If you see an error message such as **ERROR: HTTP 401 - Unauthorized**, verify that you entered your username and password correctly. For example, the following error message was generated by entering an incorrect username and attempting to download a SmartFilter database:

```
Download log:  
    SmartFilter download at: Thu, 21 June 2007 18:03:08  
    Checking incremental update  
        Checking download parameters  
        Fetching:http://example.com/  
        Warning: HTTP 401 - Unauthorized  
    Downloading full control file  
        SmartFilter download at: Thu, 21 June 2007 18:03:17  
        Downloading from http://example.com/  
        Fetching:http://example.com/  
        ERROR: HTTP 401 - Unauthorized  
        Download failed  
        Download failed  
Previous download:  
    ...
```

Section G: Configuring Websense Off-box Content Filtering

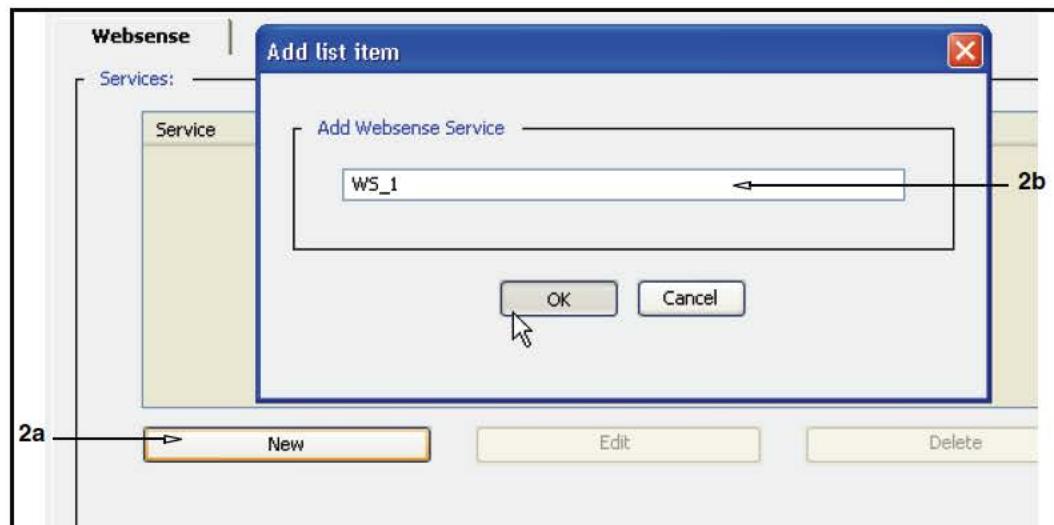
Section G: Configuring Websense Off-box Content Filtering

This section describes how to configure the SG appliance to communicate with a separate Websense server to perform content filtering tasks. This involves creating an external service on the SG appliance.

Note: The SG appliance supports Websense off-box server versions 4.4 and higher.

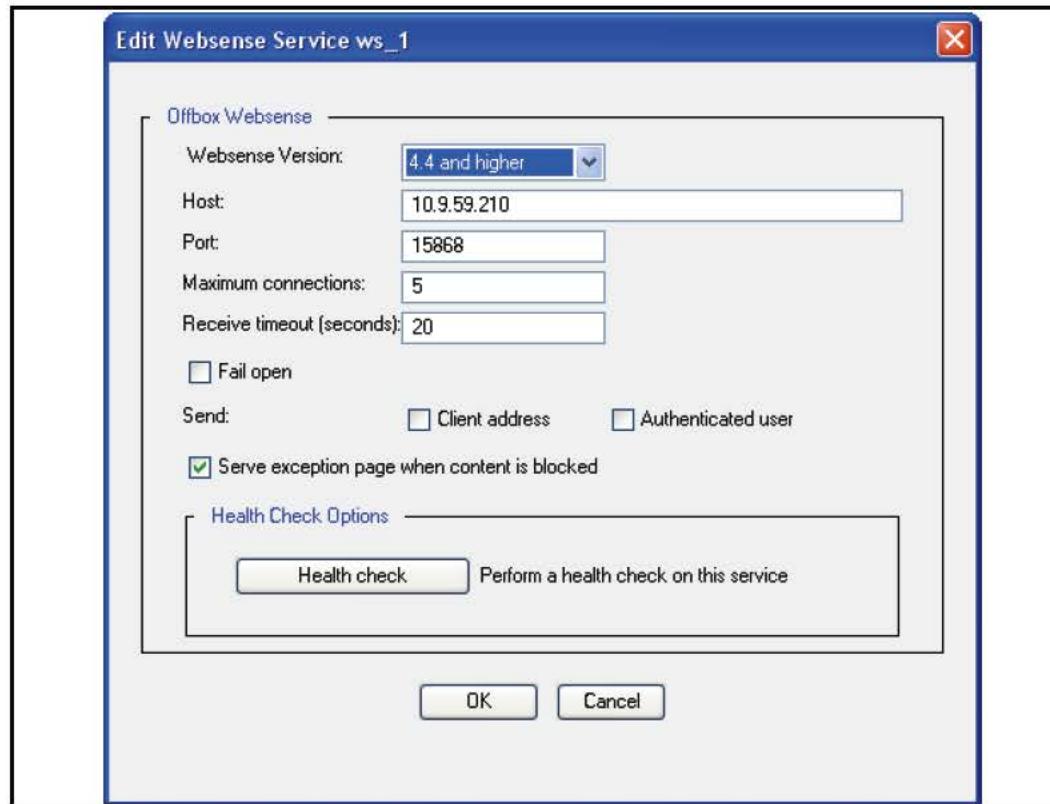
To configure Websense Off-box:

1. In the Management Console, select **Configuration > External Services > Websense**.



2. Add a new service:
 - a. Click **New**. The Add list item dialog displays.
 - b. Enter a name for the service. This example uses **WS_1**.
 - c. Click **OK** to close the dialog and add the Websense service
3. Click **Apply** to commit the changes to the SG appliance.
4. Click **Edit**. The Edit Websense Service dialog displays.

Section G: Configuring Websense Off-box Content Filtering



5. Configure the service:
 - a. From the **Websense Version** drop-down list, select the version. The default is **4.4 and higher**; you can also select **4.3**.
 - b. In the **Host** field, enter the hostname or IP address of the remote Websense server.
 - c. In the **Port** field, enter the port number of the Websense server; or leave as is to accept the default (**15868**).
 - d. In the **Maximum connections** field, enter the maximum number of connections. The range is a number from 1 to 65535. The default is **5**. Blue Coat recommends that the setting not exceed **200**.
 - e. In the **Receive Timeout (seconds)** field, enter the number of seconds the SG Appliance waits for replies from the Websense server. The range is 60 to 65535. The default timeout is **70** seconds.
6. The following settings are optional:
 - a. **Fail open**—If a default Websense service is selected (from the **External Services > Websense** tab), a connection error with the Websense server results in requests and responses proceeding, as the default Websense service is subjected to policy.
 - b. **Send: client address**—Sends the client IP address to the Websense server.
 - c. **Send: Authenticated user**—Sends user information to the Websense server.
 - d. **Serve exception page when content is blocked**—If the requested content is defined by Websense as inappropriate, the client receives a page with information stating the content is blocked. When this option is selected, the

Section G: Configuring Websense Off-box Content Filtering

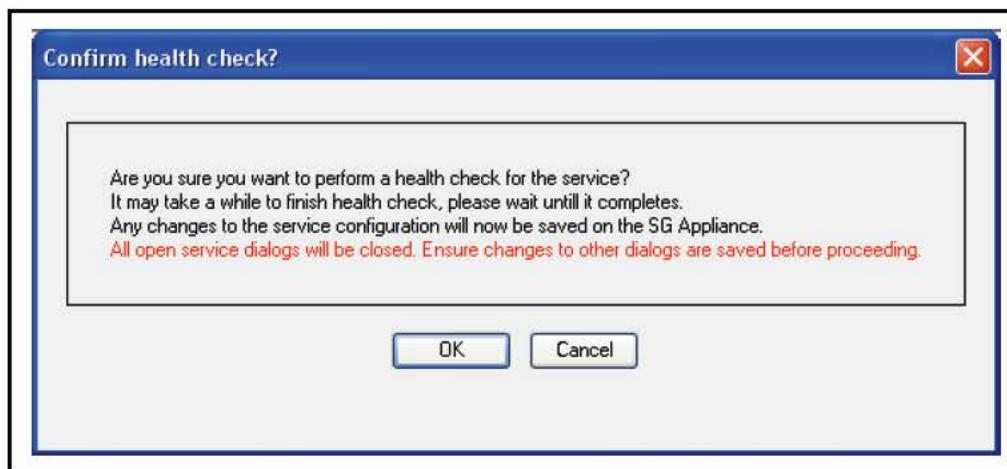
exception page originates from the SG Appliance; if not selected, the Websense server provides the exception page.

7. Click **OK** to close the Websense dialog. To perform a health check on this service, see “Performing a Health Check on a Websense Off-box Service” on page 44.
8. Click **Apply** to commit the changes to the SG appliance.
9. (Optional) You can designate a default Websense service to use. On the **Configuration > External Services > Websense** tab, select a service from the **Default service to use** drop-down list.

Because this is an external service feature, you can create service groups that contain two or more Websense services. Then you can point the ProxySG to the service group to allow for greater efficiency. See Chapter 4: “Configuring Service Groups” on page 77.

Performing a Health Check on a Websense Off-box Service

1. To perform a health check on the Websense service, click **Health Check**. The Confirm Health Check dialog displays.



2. Make sure that you save changes to any open dialogs before proceeding.
3. Click **OK** to perform the health check. When the health check is complete, the Health Check Results dialog displays information about the health check.
4. Click **Close** to close the Health Check Results dialog.

Related CLI Syntax to Configure Websense Off-box Content Filtering

- To enter configuration mode:
`SGOS# (config) external-services`
- The following subcommands are available:
`SGOS# (config external-services) create websense service_name`
`SGOS# (config external-services) {edit | delete} service_name`
`SGOS# (config websense service_name) version {4.3 | 4.4}`
`SGOS# (config websense service_name) host {hostname | IP_address}`
`SGOS# (config websense service_name) port port_number`
`SGOS# (config websense service_name) max-conn number`
`SGOS# (config websense service_name) timeout timeout_seconds`

Section G: Configuring Websense Off-box Content Filtering

```
SGOS# (config websense service_name) send {client-address | authenticated-user}
SGOS# (config websense service_name) sense-categories
SGOS# (config websense service_name) apply-by-default
SGOS# (config websense service_name) fail-open
SGOS# (config websense service_name) test-url url
```


Chapter 3: Malicious Content Scanning Services

This chapter describes how to configure the SG appliance to interact with external Internet Content Adaptation Protocol (ICAP) clients and servers to provide content scanning and transformation.

This chapter contains the following sections:

- "Section A: About Content Scanning"
- "Section B: Configuring SG Appliance ICAP Communications"
- "Section C: Creating ICAP Policy"
- "Section D: Managing Virus Scanning"

Section A: About Content Scanning

Section A: About Content Scanning

This section provides conceptual information about anti-virus (AV) scanning and the SG appliance solution.

When integrated with a supported ICAP server, such as the Blue Coat AV™, the SG appliance provides content scanning, filtering, and repair service for Internet-based malicious code. To eliminate threats to the network and to maintain caching performance, the SG appliance sends objects to the ICAP server for checking and saves the scanned objects in its object store. With subsequent content requests, the appliance serves the scanned object rather than rescanning the same object for each request.

Determining Which Files to Scan

In determining which files to scan, this integrated solution uses the content scanning server's filtering in addition to SG appliance capabilities. The following table describes the supported content types and protocols.

Table 3-1. Content Types Scanned By ICAP Server and the SG Appliance

ICAP Server supported content types	SG appliance supported protocols	Unsupported content protocols
All or specified file types, based on the file extension, as configured on the server. Examples: .exe (executable programs), .bat (batch files), .doc and .rtf (document files), and .zip (archive files); or specific MIME types.	<ul style="list-style-type: none"> HTTP objects FTP objects (uploads and downloads) Transparent FTP responses 	<ul style="list-style-type: none"> Streaming content (for example, RTSP and MMS) Live HTTP streams (for example, HTTP radio streams)
	HTTPS connections terminated at an SG appliance	HTTPS connections tunneled through an SG appliance

Whenever an object is requested or being refreshed and it was previously scanned, the SG appliance verifies whether the pattern file has been updated since it was last scanned. If it was, the object is scanned again, even if the content has not changed. If the content has changed, the object is rescanned.

With the SG appliance, you can define flexible, yet enterprise-specific content scanning policies, which is discussed in the following two sections.

About Response Modification

The SG appliance sends the first part (a preview) of the object to the ICAP server that supports response modification. The object preview includes the HTTP request and response headers, and the first few bytes of the object. After checking those bytes, the ICAP server either continues with the transaction (that is, asks the SG appliance to send the remainder of the object for scanning) or sends a notification to the appliance that the object is clean and opts out of the transaction.

The ICAP server features and configuration determine how scanning works, including the following:

Section A: About Content Scanning

- Handling of certain objects, including those that are infected and cannot be repaired
- Whether to attempt to repair infected files
- Whether to delete infected files that cannot be repaired from the ICAP server's archive

The following diagram illustrates the response modification process flow.

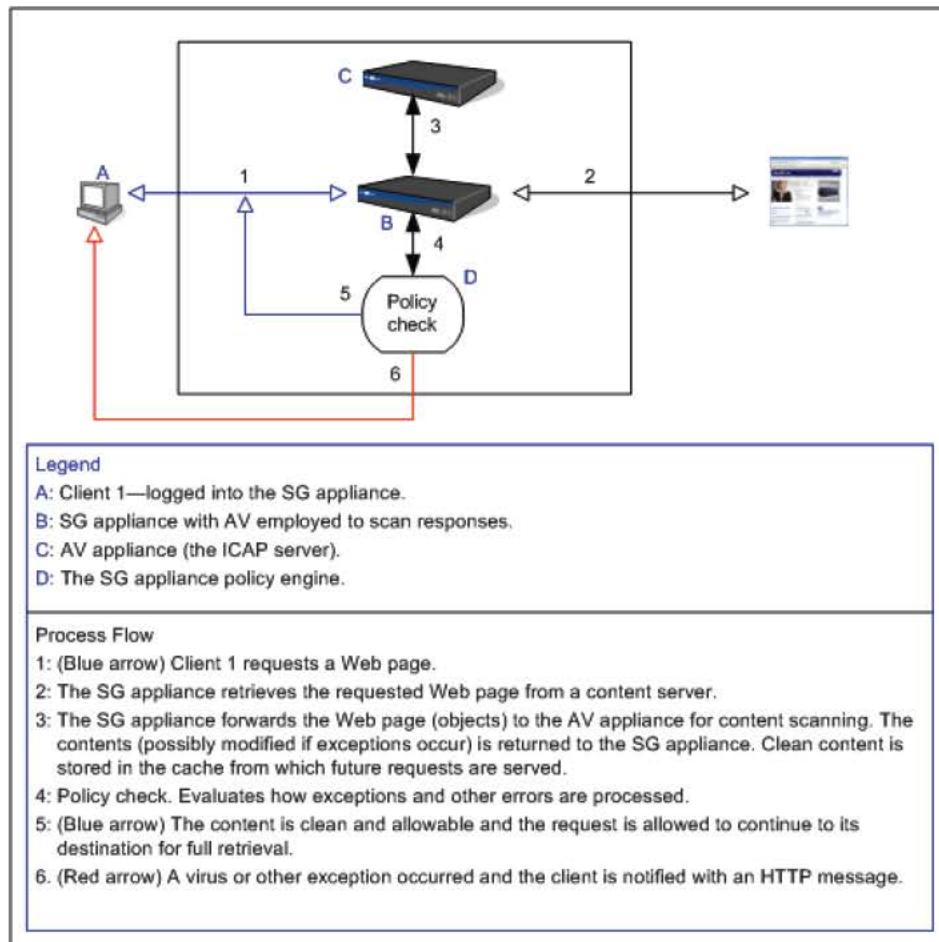


Figure 3-1. Response Modification Process Flow

About Request Modification

Request modification means the ICAP server scans contents that a client is attempting to send outside the network. This prevents unaware users from forwarding corrupted files or Webmail attachments. Request modification is also a method of content filtering and request transformation, which is used to protect network identification. Based on the results of the scan, the server might return an HTTP response to the client (for example, sports not allowed); or the client request might be modified, such as stripping a referrer header, before continuing to the origin content server.

Note: Some ICAP servers do not support virus scanning for request modification, but support only content filtering.

Section A: About Content Scanning

The following diagram illustrates the request modification process flow.

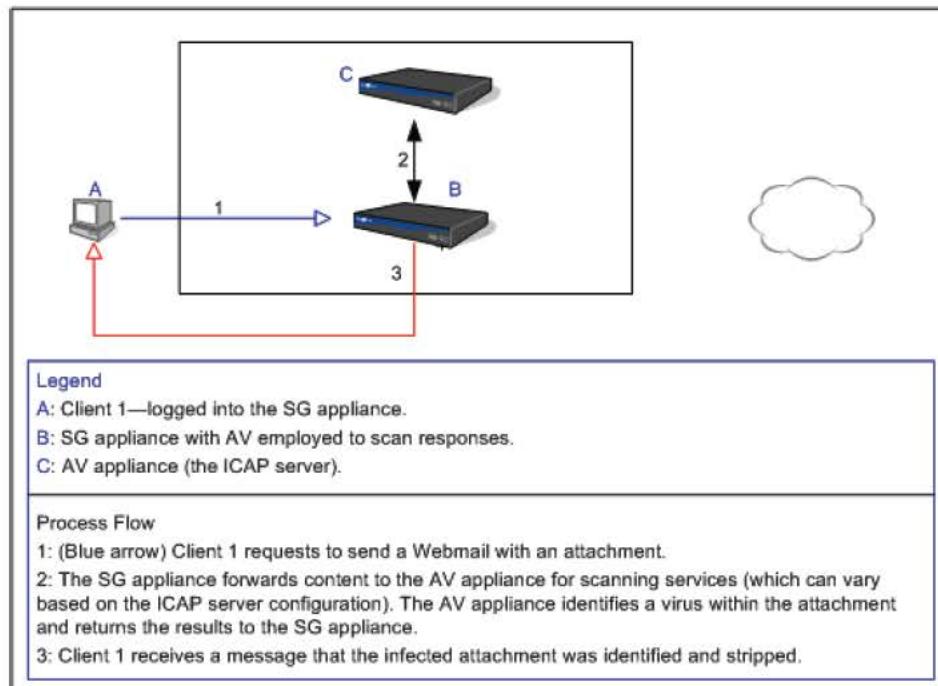


Figure 3-2. Request Modification Process Flow

Returning the Object to the Blue Coat Appliance

For response modification, the returned object can be the original unchanged object, a repaired version of the original object minus a virus, or an error message indicating that the object contained a virus. Each of these responses is configured on the ICAP server, independent of the appliance and the ICAP protocol. If the appliance receives the error message, it forwards the error message to the client and does not save the infected file.

Note: For request modification, an object is never returned, regardless of whether it is infected or clean.

Caching and Serving the Object

After an object has been scanned and is determined to be cacheable, the SG appliance saves it and serves it for the subsequent content requests. When the appliance detects that the cached content has changed on the origin server, it fetches a fresh version, then forwards it to the ICAP server for scanning. If the SG appliance uses policies in the ICAP configuration, the policy applies to content fetches, distributions, refreshes, and pipelining fetches.

For more information on policies, see "Section C: Creating ICAP Policy" on page 67. For more information on the <Cache> layer, refer to Volume 10: *Blue Coat SG Appliance Content Policy Language Guide*.

Section A: About Content Scanning

ICAP v1.0 Features

This section describes features of the ICAP v1.0 protocol.

Sense Settings

The Sense Settings feature allows the SG appliance to query any identified ICAP server running v1.0, detect the parameters, and configure the ICAP service as appropriate. See “[Creating an ICAP Service](#)” on page 56.

ISTags

An ICAP v1.0 server is required to return in each response an ICAP header ISTag, which indicates the current state of the ICAP server. This eliminates the need to designate artificial pattern version numbers, as is required in v0.95.

Note: Backing out a virus pattern on the ICAP server can revert ISTags to previous values that are ignored by the SG appliance. To force the SG appliance to recognize the old values, use the Sense Settings option, which is described in the configuration section.

Persistent Connections

New ICAP connections are created dynamically as ICAP requests are received (up to the defined maximum connection limit). The connection remains open to receive subsequent requests. If a connection error occurs, the connection closes to prevent more errors.

Improving the User Experience

Object scanning adds another operation to the user process of requesting and receiving Web content. Therefore, the user might experience extremely slightly noticeable delays during Web browsing as ICAP servers scan content. The SG appliance allows you to mitigate slower browse times and educate your users about what is occurring on their systems. This section describes those functionalities.

About Patience Pages

Patience pages are HTML pages displayed to the user if an ICAP content scan exceeds the specified duration (seconds). You can configure the content of these pages to include a custom message and a help link. Patience pages refresh every five seconds and disappear when object scanning is complete.

Notes

- Patience pages are not compatible with *infinite stream* connections—or live content streamed over HTTP—such as a cam or video feed. ICAP scanning cannot begin until the object download completes. Because this never occurs with this type of content, the SG appliance continues downloading until the maximum ICAP file size limit is breached. At that point, the SG appliance either returns an error or attempts to serve the content to the client (depending on fail open/closed policy). However, even when configured to fail open and serve the content, the delay added to downloading this large amount of data is often enough to cause the a user give up before reaching that point.

Section A: About Content Scanning

- Patience pages are limited to Web browsers.

About Data Trickling

Patience pages provide a solution to appease users during relatively short delays in object scans. However, scanning relatively large objects, scanning objects over a smaller bandwidth pipe, or high loads on servers might disrupt the user experience because connection timeouts occur. To prevent such timeouts, you can allow *data trickling* to occur. Depending on the trickling mode you enable, the SG appliance either trickles—or allows at a very slow rate—bytes to the client at the beginning of the scan or near the very end.

The SG appliance begins serving server content *without* waiting for the ICAP scan result. However, to maintain security, the full object is not delivered until the results of the content scan are complete (and the object is determined to not be infected).

Note: This feature is supported for the HTTP proxy only; FTP connections are not supported.

Trickling Data From the Start

In *trickle from start* mode, the SG appliance buffers a small amount of the *beginning* of the response body. As the ICAP server continues to scan the response, the SG appliance allows one byte per second to the client.

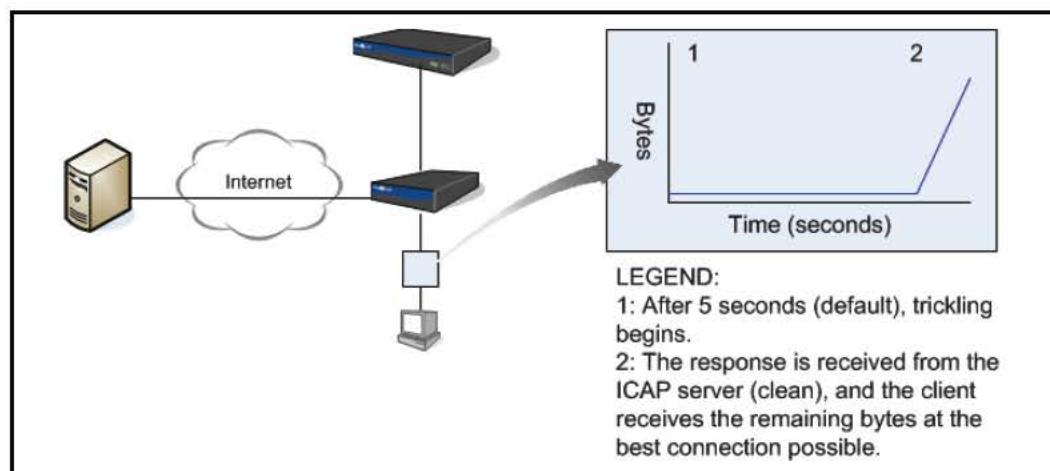


Figure 3-3. A client receives only the initial bytes of a transaction during the ICAP scan.

After the ICAP server completes its scan:

- If the object is deemed to be clean (no response modification is required), the SG appliance sends the rest of the object bytes to the client at the best speed allowed by the connection.
- If the object is deemed to be malicious, the SG appliance terminates the connection and the remainder of the response object bytes—which in this case are the majority of the bytes—are not sent to the client.

Deployment Notes

- This method is the more secure option because the client receives only a small amount of data pending the outcome of the virus scan.

Section A: About Content Scanning

- ❑ One drawback is that users might become impatient, especially if they notice the browser display of bytes received. They might assume the connection is poor or the server is busy, close the client, and restart a connection.

Trickling Data at the End

In *trickle at end* mode, the SG appliance sends the response to the client at the best speed allowed by the connection, except for the last 16 KB of data. As the ICAP server performs the content scan, the SG appliance allows one byte per second to the client.

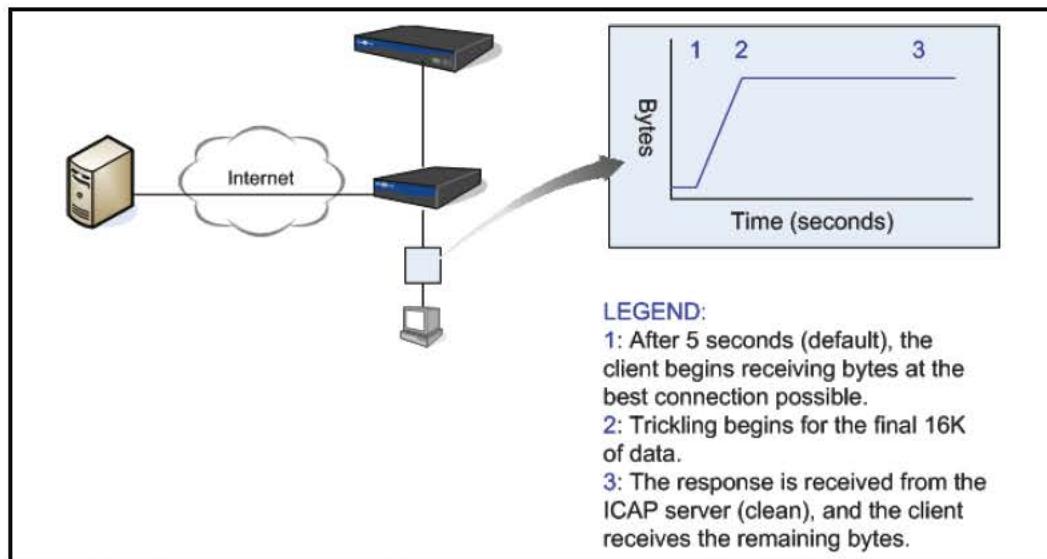


Figure 3-4. A client receives most of the bytes immediately during the ICAP scan.

After the ICAP server completes its scan, the behavior is the same as described in “Trickling Data From the Start” on page 52.

Deployment Notes

- ❑ Blue Coat recommends this method for media content, such as flash objects.
- ❑ This method is more user-friendly than trickle at start. This is because users tend to be more patient when they notice that 99% of the object is downloaded versus 1%, and are less likely to perform a connection restart. However, network administrators might perceive this method as the less secure method, as a majority of the object is delivered before the results of the ICAP scan.

General Deployment Notes

This section provides comments about data trickling deployments.

The Decision Between Data Trickling and Patience Pages

Blue Coat SG appliance configuration options plus policy allow you to provide different ICAP *feedback* actions depending upon the type of traffic detected:

- ❑ Blue Coat defines interactive as the request involving a Web browser. Web browsers support data trickling and patience pages.

Section A: About Content Scanning

- Non-interactive traffic originates from non-browser applications, such as automatic software download or update clients. Such clients are not compatible with patience pages; therefore, data trickling or no feedback are the only supported options.

Based on whether the requirements of your enterprise places a higher value either on security or availability, the SG appliance allows you to specify the appropriate policy. However, you must also consider the user agents involved when determining the appropriate feedback method. For example, streaming clients cannot deliver patience pages, but they are susceptible to connection timeouts. Therefore, trickling is the suggested method. The following diagram provides basic guidelines for deciding which feedback method to implement.

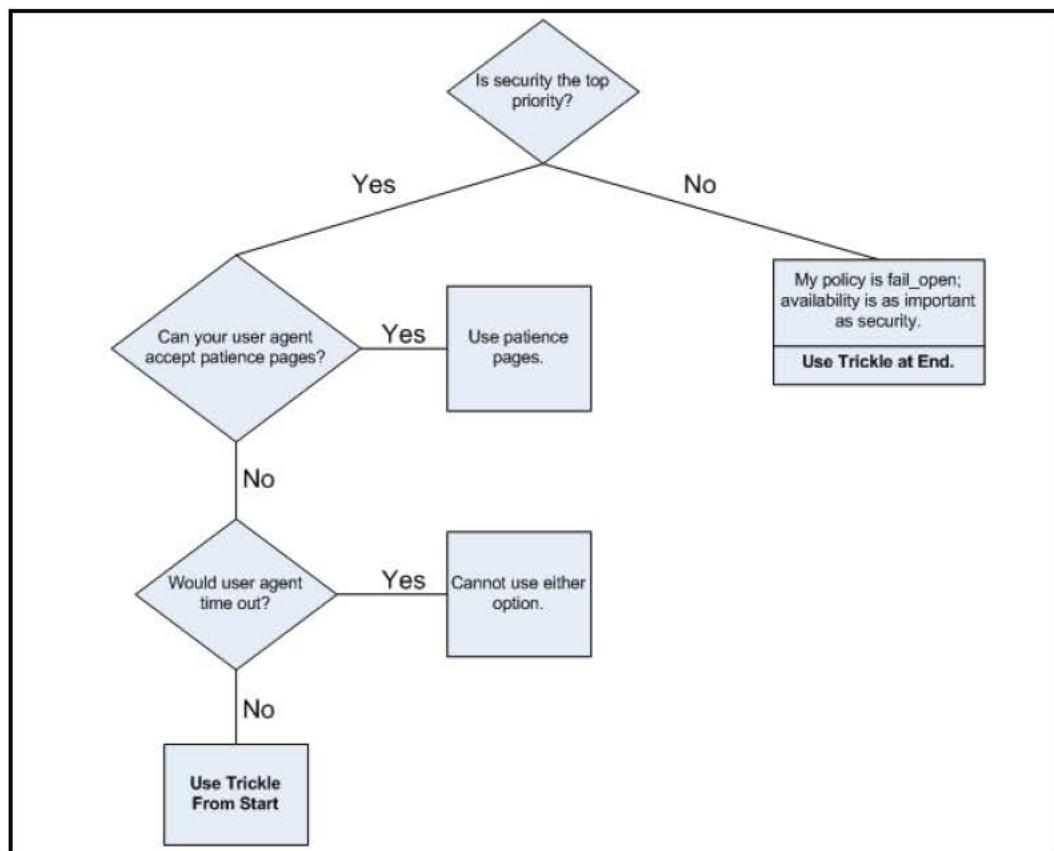


Figure 3-5. Deciding which ICAP feedback method to employ.

Infinite Streams

Data trickling does *not* solve the issue of HTTP infinite streams. These are connections such as webcams or flash media—traffic over an HTTP connection—that conceivably have no end. Because the object cannot be fully downloaded, the ICAP content scan cannot start; however, the connection between the SG appliance and the AV appliance remains, which wastes finite connection resources. Strategic policy implementation, however, might be able to identify infinite streams and mark them to not be anti-virus scanned.

If you employ the data trickle at end method, the user experience with infinite streams improves because the data is always delivered at the best connection speed possible.

Section A: About Content Scanning

Proxy Chaining Deployments

Proxy chaining deployments are common in enterprises, especially in core/branch office scenarios. Data trickling is achievable, but behavior is dependent upon how the SG appliances are configured. The following are common deployment scenarios.

- The downstream SG appliance is performing ICAP scanning, and the upstream SG appliance is not:** Data trickling and patience pages are not affected in this scenario.
- The upstream SG appliance is performing ICAP scanning, and the downstream SG appliance is not:** The only issue with this deployment is that user agent-specific policy cannot be applied at the core SG appliance because the branch SG appliance consolidates multiple client requests in one out-going request to the upstream SG appliance. If data trickling is employed at the upstream SG appliance and if ICAP scanning detects a virus, the upstream SG appliance resets the client connection. This also deletes the corrupted object from the downstream SG appliance cache.
- Both SG appliances (upstream and downstream) are scanning:** Behavior is mostly determined by the configuration of the upstream SG appliance.
 - If the upstream SG appliance is configured to deliver patience pages, then the downstream SG appliance also attempts to serve patience pages, including to non-graphical user agents. Therefore, this method is not recommended.
 - If the upstream SG appliance employs data trickle from start, the downstream SG appliance is not able to send any bytes to the client for a long period of time. If a patience page is not configured on the downstream SG appliance, users might experience connection timeouts.
 - If the upstream SG appliance employs trickle at end, the downstream SG appliance allows for all options of patience page and data trickling.

About ICAP Server Failover

When creating an ICAP action, you can specify a list of ICAP servers or groups to use, in order of preference. If the first server or group in the list does not pass the health checks, the SG appliance moves down the list until it finds a server or group that is healthy and uses that to perform the scanning.

The primary server resumes ICAP processing when the next health check is successful; the standby server or server group does not retain the primary responsibility.

Notes

- Failover is configured as part of the ICAP policy definition.
- You cannot configure failover policy until ICAP services are configured on the SG appliance.
- To avoid errors, ICAP service names cannot be named **fail_open** or **fail_closed** (the CLI commands prevent these names from being created).

Section B: Configuring SG Appliance ICAP Communications

Section B: Configuring SG Appliance ICAP Communications

This section describes how to configure the SG appliance to communicate with an ICAP server to perform content scanning tasks.

Configuration Tasks

Configuring ICAP on the SG appliance involves the following steps:

- Install the ICAP server.
- Configure the SG appliance to use ICAP and configure basic features.
- Specify feedback method (patience pages or data trickling).
- Define scanning policies, then load the policy file on the SG appliance.

Installing the ICAP Server

Follow the manufacturer instructions for installing the ICAP server, including any configuration necessary to work with the SG appliance. Based on your network environment, you might use the SG appliance with multiple ICAP servers or multiple scanning services on the same server. Configure options as needed, including the exception message displayed to end users in the event the requested object was modified or blocked.

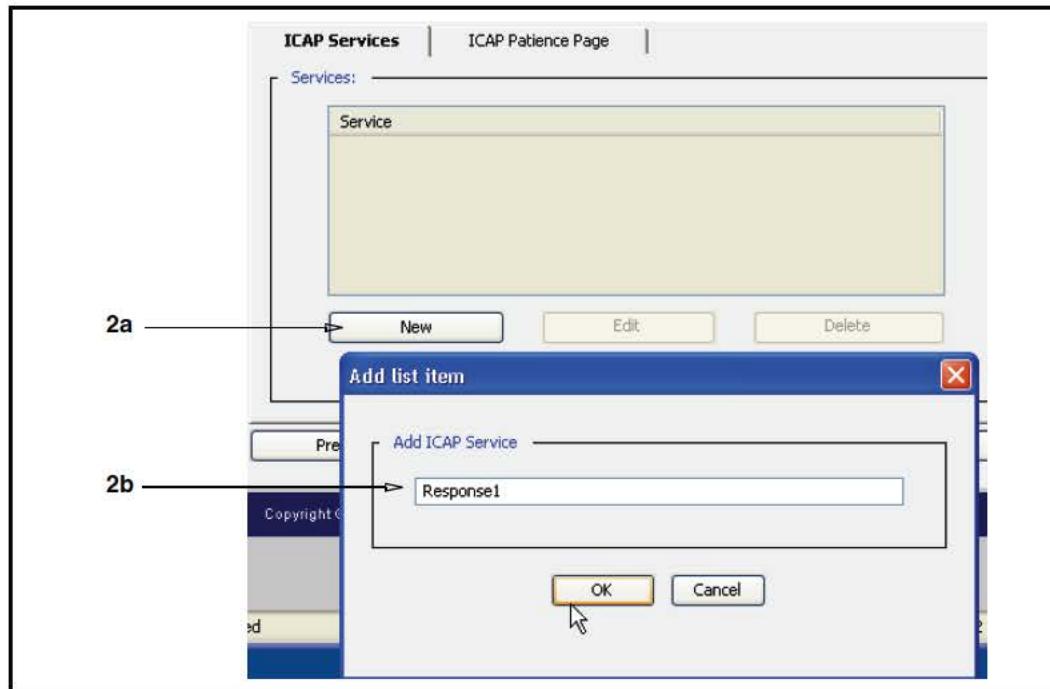
Creating an ICAP Service

An ICAP service on the SG appliance is specific to the ICAP server and includes the server IP address or hostname, as well as the supported number of connections. If you are using the SG appliance with multiple ICAP servers or multiple scanning services on the same server, add an ICAP service for each server or scanning service.

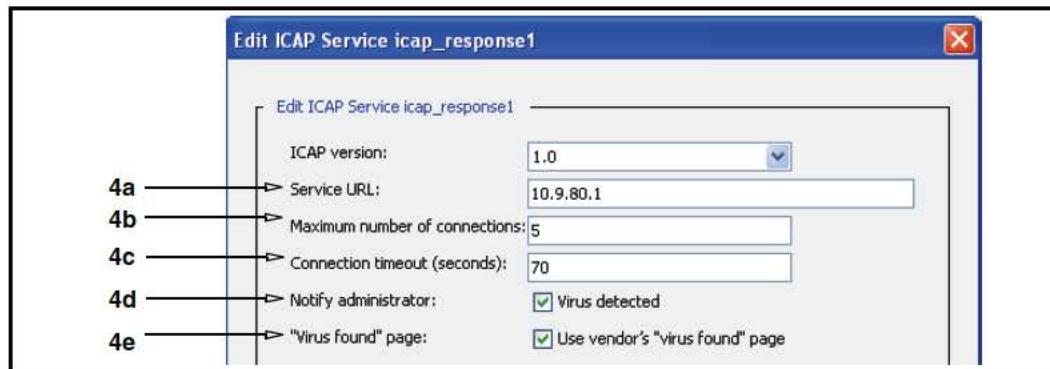
To create and configure an ICAP service:

1. Select **Configuration > External Services > ICAP Services**.

Section B: Configuring SG Appliance ICAP Communications



2. Add a new service:
 - a. Click **New**; the Add List Item dialog appears.
 - b. In the **Add ICAP Service** field, enter an alphanumeric name. This example uses **Response1**.
 - c. Click **OK** to close the dialog. The new ICAP object appears in the services list.
3. Highlight the new ICAP service name and click **Edit**. The Edit ICAP Service dialog appears.



4. Configure the service communication options:

Note: The default ICAP version is 1.0 and cannot be changed.

- a. In the **Service URL** field, enter the ICAP server URL (AV appliance), which includes the URL schema, ICAP server hostname or IP address, and the ICAP port number. For example:

Section B: Configuring SG Appliance ICAP Communications

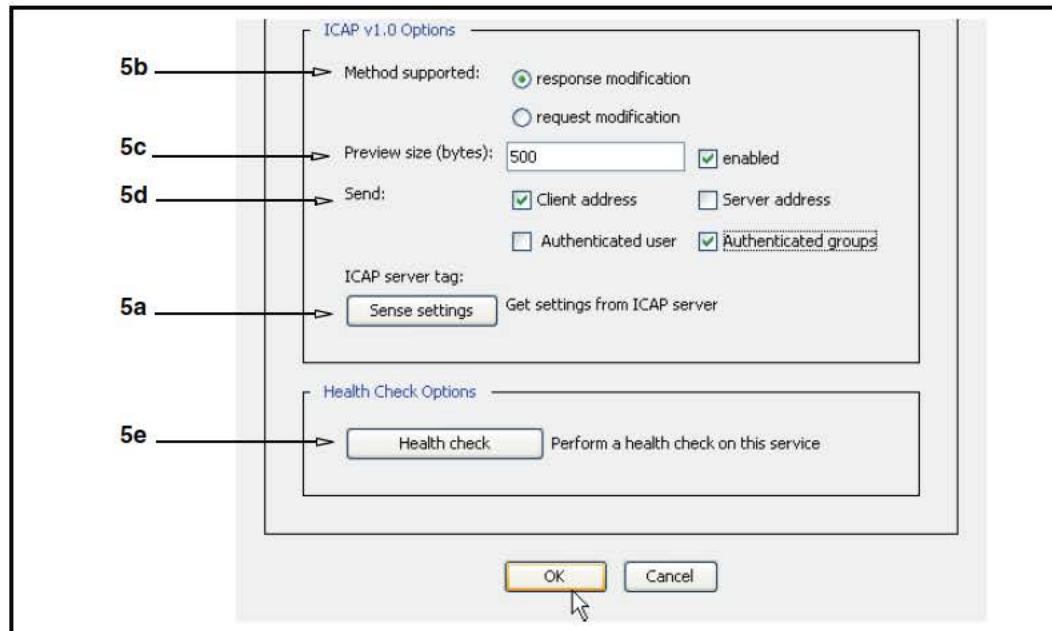
icap://10.x.x.x/

The default port number is 1344, which can be changed. For example:
icap://10.x.x.x:99. You can also enter an HTTP URL, but you must define a port number.

Note: An ICAP service pointing to a WebWasher server must use **icap** as the protocol in the URL. Blue Coat also recommends that you review your specific ICAP server documentation, as each vendor might require additional URL information.

- b. The **Maximum Number of Connections** field specifies the maximum possible connections at any given time between the SG appliance and the ICAP server. The range is a number from 1 to 65535. The default is 5. The number of recommended connections depends on the capabilities of the ICAP server. Refer to the vendor's product information.
- c. The **Connection timeout** field specifies the number of seconds the SG appliance waits for replies from the ICAP server. The range is 1 to 65536. The default timeout is 70 seconds.
- d. Select **Notify administrator: Virus detected** to send an e-mail to the administrator if the ICAP scan detects a virus. The notification is also sent to the Event Log and the Event Log e-mail list.
- e. Select **Virus found page: Use vendor's "virus found" page** to display the default vendor error exception page to the client instead of the SG appliance exception page. This is the default behavior for SGOS upgrades from previous versions. This feature maintains the same appearance of previous versions, but also retains the inherent timestamp issues involved with cache hits. If this option is not selected, the exception pages originate from the SG appliance, and they employ the accurate timestamps for cache hits.

Section B: Configuring SG Appliance ICAP Communications



5. The following steps configure ICAP v1.0 features:
 - a. (Optional) Clicking **Sense Settings** automatically configures the ICAP service using the ICAP server parameters.
 - b. Select the ICAP method: response modification or request modification.

Note: An ICAP server might have separate URLs for response modification and request modification services.

- c. In the **Preview size (bytes)** field, enter a byte value and select **enabled**. The ICAP server reads the object up to the specified byte total. The ICAP server either continues with the transaction (that is, receives the remainder of the object for scanning) or opts out of the transaction.
The default is **0**. Only response headers are sent to the ICAP server; more object data is only sent if requested by the ICAP server.
- d. (Optional) The **Send** options allow additional information to be forwarded to the ICAP server. Select one or more of the following: **Client address**, **Server address**, **Authenticated user**, or **Authenticated groups**.
- e. Click **Health check** to perform an immediate health check on this service.
- f. Click **OK** to close the dialog.

6. Click **Apply**.

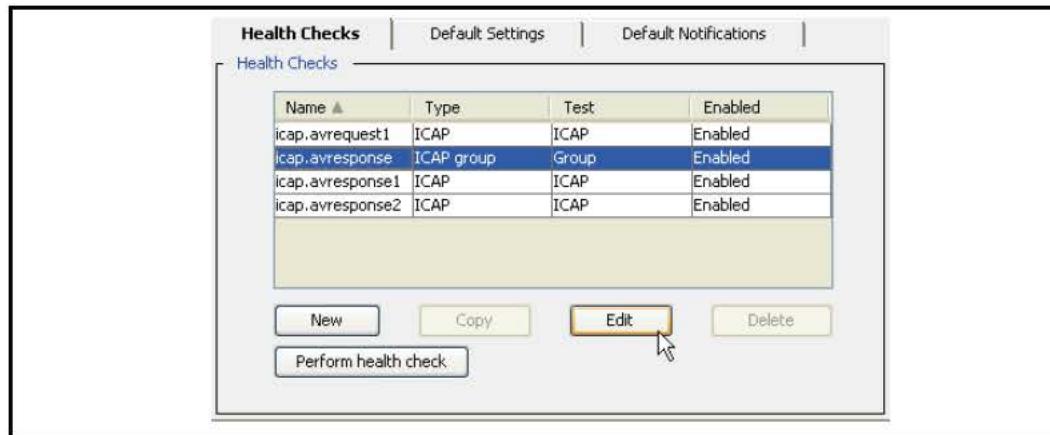
Managing ICAP Health Checks

SG appliance health check features allow you to perform tasks such as immediate checking, disable health checks, and override various notifications and settings.

To manage ICAP health checks:

1. Select Configuration > Health Checks > General.

Section B: Configuring SG Appliance ICAP Communications



2. Select an ICAP service or service group.
3. Click **Perform health check** to get an immediate connection status for the AV appliance or service group.
4. Click **Edit** to display the Edit ICAP Health Check dialog.
5. Select the **Enabled state**:
 - **Enabled:** Marks the ICAP service or group as enabled and functioning.
 - **Disabled, reporting as healthy:** Marks the ICAP service as healthy, but not able to receive connections. One reason to select this option is to preserve current statistics; the disabled state is temporary.
 - **Disabled, reporting as sick:** Marks the ICAP service as down and not able to receive connections. One reason to select this is that you are taking the server offline for maintenance or replacement.
6. Click **Apply**.

The Health Check chapter in *Volume 5: Advanced Networking* provides more detailed information about all of the health check configuration options, including override features.

Deleting an ICAP Service

The following steps describe how to delete an ICAP service.

Note: You cannot delete an ICAP service used in an SG appliance policy (that is, if a policy rule uses the ICAP service name) or that belongs to a service group.

To delete an ICAP service:

1. Select **Configuration > External Services > ICAP**.
2. Select the service to be deleted.
3. Click **Delete**; click **OK** to confirm.
4. Click **Apply**.

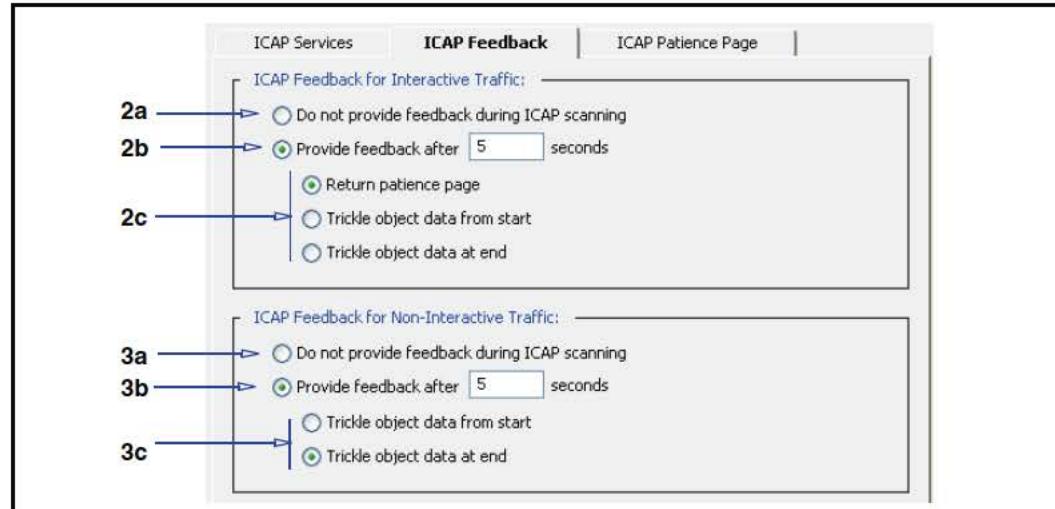
Section B: Configuring SG Appliance ICAP Communications

Configuring ICAP Feedback

This section describes how to specify what type of feedback is provided to users during an ICAP scan. See “[Improving the User Experience](#)” on page 51.

To specify and configure the ICAP feedback method:

1. Select **Configuration > External Services > ICAP > ICAP Feedback**.



2. Configure options for interactive traffic (browser-based requests):
 - a. The **Do not provide feedback...** option means that if users experience delays in receiving content, they are not notified as to the reason (ICAP scanning). Selecting this option greys out the other options.
 - b. The default duration to wait before notifying a client that an ICAP scan is occurring is five seconds. You can change this value in the **Provide feedback after** field, but if you make the value too long, users might become impatient and manually close the client, believing the connection is hung.
 - c. Select the feedback method:
 - **Return patience pages:** The client displays a Web page to the user providing a description of the delay (ICAP scanning). This page is customizable, as described in the next section.
 - **Trickle object data from start:** The client receives 1 byte per second, which should prevent connection timeouts while the ICAP server performs the scan. If the response from the ICAP server is clean, the client receives the rest of the object data at the best connection speed possible. If the scan detects malicious content, the connection is dropped. This is the more secure method.

Section B: Configuring SG Appliance ICAP Communications

- **Trickle object data at end:** The client receives most (99%) of the object data, but the final bytes are sent at the rate of one per second while the ICAP scanner performs the scan. If the response from the ICAP server is clean, the client receives the rest of the object data at the best connection speed possible. If the scan detects malicious content, the connection is dropped. This is the least secure method, as most of the data has already been delivered to the client. However, this method provides the best user experience because there most of the object is already delivered.
3. Configure options for non-interactive traffic (content such as flash animation over HTTP):
 - a. The **Do not provide feedback...** option means that if users experience delays in receiving content, they are not notified as to the reason (ICAP scanning). Selecting this option greys out the other options.
 - b. The default duration to wait before notifying a client that an ICAP scan is occurring is five seconds. You can change this value in the **Provide feedback after** field, but if you make the value too long, users might become impatient and manually close the client, believing the connection is hung.
 - c. Select the feedback method:
 - **Trickle object data from start:** See the descriptions in Step 2.
 - **Trickle object data at end:** See the descriptions in Step 2.
 4. Click **Apply**.

These configurations are global. You can define further feedback policy that applies to specific user and conditional subsets. In the VPM, the object is located in the Web Access Layer: **Return ICAP Feedback**.

Customizing ICAP Patience Text

This section describes how to customize text displayed during ICAP scanning. Patience pages are displayed if the appropriate option is selected, as described in the previous section: “[Improving the User Experience](#)” on page 51.

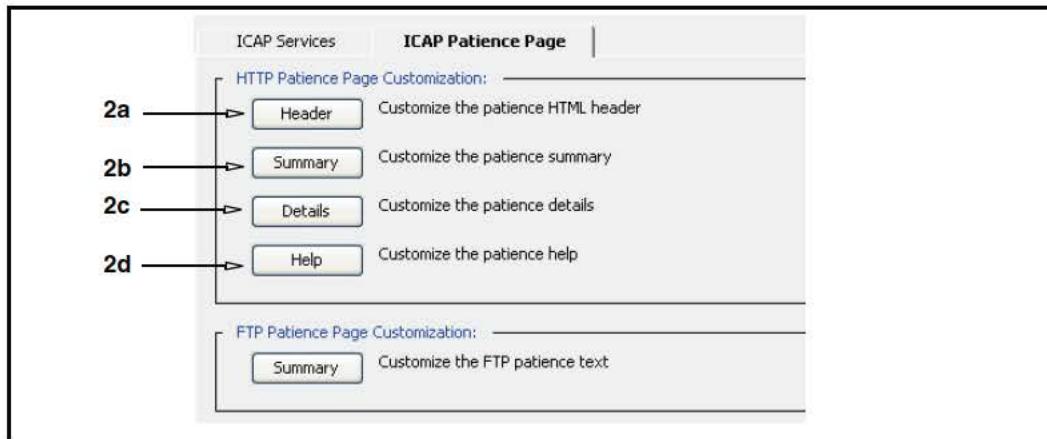
HTTP Patience Text

The SG appliance allows you to customize the patience page components and text that are displayed to users when HTTP clients experience delays as Web content is scanned.

To customize HTTP patience pages:

1. Select **Configuration > External Services > ICAP > ICAP Patience Page**.

Section B: Configuring SG Appliance ICAP Communications



2. In the **HTTP Patience Page Customization** section, click **Header**, **Summary**, **Details**, or **Help**. The corresponding customize dialog appears. Customize the information as appropriate.



- a. **Custom Patience Header**—Contains HTML tags that define what appears in the dialog title bar. This component also contains the `<meta http-equiv>` tag, which is used to specify a non-English character set.

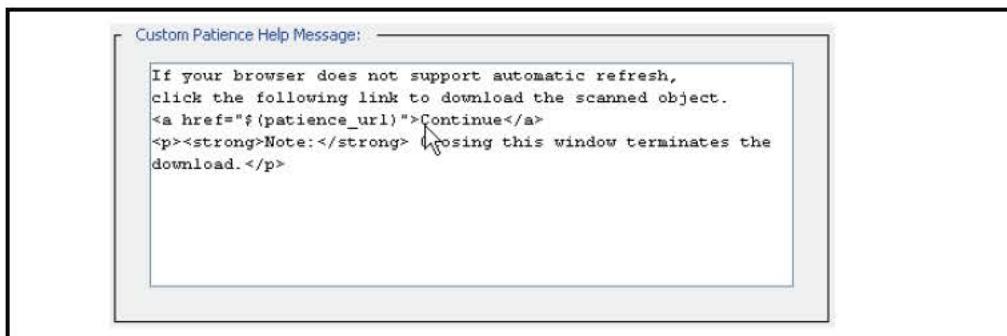


- b. **Custom Patience Summary Message**—HTML and text that informs users that a content scan is occurring.

Section B: Configuring SG Appliance ICAP Communications



- c. **Custom Patience Details Message**—Uses data to indicate scanning progress. The information includes the URL currently being scanned, the number of bytes processed, and the elapsed time of the scan.



- d. **Custom Patience Help Message**—Displays instructions for users should they experience a problem with the patience page.
3. Click **Apply**.

All of these components are displayed on the patience page.

Windows XP, Service Pack 2 Behavior

Microsoft is continually updating Windows XP security measures, which impacts how the SG appliance manages patience pages.

- Browsers running on Windows XP, Service Pack 2 (XP SP2), experience slightly different patience page behavior when pop-up blocking is enabled.
 - If pop-up blocking is not enabled, patience page behavior should be normal.
 - If pop-up blocking is enabled (the default), the SG appliance attempts to display the patience page in the root window.
 - If the download triggers an invisible Javascript window, the user can track the scanning progress with the progress bar at the bottom of the window; however, if other policy blocks Javascript active content, this bar is also not visible.
- If Internet Explorer blocks all downloads initiated by Javascript, the user must click the yellow alert bar to download the scanned object.
- Users experience two patience page responses for non-cacheable objects.

Section B: Configuring SG Appliance ICAP Communications

Interactivity Notes

- When ICAP scanning is enabled and a patience page is triggered, a unique URL is dynamically generated and sent to the browser to access the patience page. This unique URL might contain a modified version of the original URL. This is expected behavior.
- Patience pages and exceptions can only be triggered by left-clicking a link. If a user right-clicks a link and attempts to save it, it is not possible to display patience pages. If this action causes a problem, the user might see browser-specific errors (for example, an Internet site not found error); however, ICAP policy is still in effect.
- A patience page is not displayed if a client object request results in an HTTP 302 response and the SG appliance pipelines the object in the Location header. After the SG appliance receives the client request for the object, the client enters a waiting state because a server-side retrieval of the object is already in progress. The wait status of the client request prevents the patience page from displaying. To prevent the SG appliance from pipelining these requests (which decreases performance) and to retain the ability to provide a patience page, configure HTTP as follows:

```
#SGOS (config) http no pipeline client redirects
```
- The status bar update does not work if it is disabled or if the Javascript does not have sufficient rights to update it.
- Looping: Certain conditions cause browsers to re-spawn patience pages. For example, a site states it will begin a download in 10 seconds, initiates a pop-up download window, and returns to the root window. If the download window allows pop-ups, the patience page displays in a separate window. The automatic return to the root window initiates the download sequence again, spawning another patience page. If unnoticed, this loop could cause a system hang. The same behavior occurs if the user clicks the back button to return to the root window. For known and used download sites, you can create policy that redirects the page so that it doesn't return to the root window after a download starts.

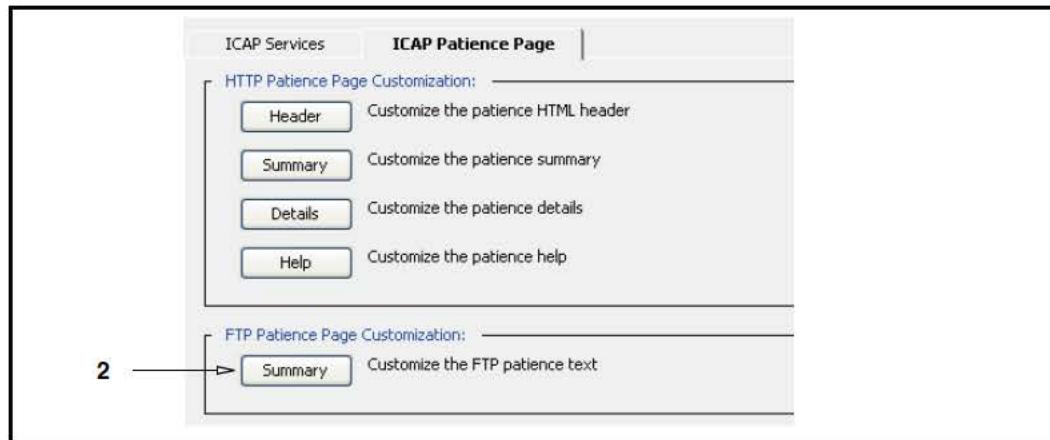
FTP Patience Text

For content over FTP, the patience text displayed to FTP clients during an ICAP scan can be modified.

To customize FTP patience text:

1. Select **Configuration > External Services > ICAP > ICAP Patience Page**.

Section B: Configuring SG Appliance ICAP Communications



2. In the **FTP Patience Page Customization** field, click **Summary**; the Customize FTP Patience Text dialog appears. Customize the FTP client patience text as appropriate.
3. Click **OK**.
4. Click **Apply**.

Related CLI Syntax to Manage ICAP Communications

- To enter configuration mode:
SGOS# (config) **external-services**
- The following subcommands are available:

```
SGOS# (config external-services) create icap service_name
SGOS# (config external-services) edit service_name
SGOS# (config icap service_name) url icap://url
SGOS# (config icap service_name) max-conn number
SGOS# (config icap service_name) timeout timeout_seconds
SGOS# (config icap service_name) notify virus-detected
SGOS# (config icap service_name) methods {REQMOD | RESPMOD}
SSGOS# (config icap service_name) preview-size bytes
SGOS# (config icap service_name) send {client-address | server-address}
SGOS# (config icap service_name) send {authenticated-user | authenticated-groups}
SGOS# (config icap services service_name) sense-settings
SGOS# (config icap services service_name) patience-page seconds
SGOS# (config external-service) delete service_name
SGOS# (config external-services) inline http icap-patience {details | header | help | javascript | summary} eof
SGOS# (config external-services) inline ftp icap-patience-text eof
SGOS# (config external-services) icap feedback interactive patience-page {seconds}
SGOS# (config external-services) icap feedback {interactive | non-interactive} {trickle-start | trickle-end | none}{seconds}
```

Section C: Creating ICAP Policy

Defined ICAP policy dictates the anti-virus and ICAP server failover behavior for your enterprise. You can either use the Visual Policy Manager (VPM) or you can manually edit policy files. For more information on the VPM and defining policies, refer to *Volume 6: VPM and Advanced Policy*.

Use the `request.icap_service()` (request modification) or `response.icap_service()` (response modification) properties to manage the SG appliance ICAP services.

VPM Objects

The VPM contains the following objects specific to AV scanning (linked to their descriptions in the VPM chapter).

Table 3-2. AV Scanning Objects

Object	Layer>Column
Virus Detected	Web Access>Service
ICAP Error Code	Web Access>Service
Return ICAP Feedback	Web Access>Action
Set ICAP Request Service	Web Access>Action
Set ICAP Request Service	Web Content>Action
Set ICAP Response Service	Web Content>Action

Note: For CPL policy, refer to *Volume 10: Blue Coat SG Appliance Content Policy Language Guide*.

Example ICAP Scanning Policy

The following VPM example demonstrates the implementation of an ICAP policy that performs virus scanning on both client uploads (to prevent propagating a virus) and responses (to prevent the introduction of viruses), and provides failover with backup ICAP services.

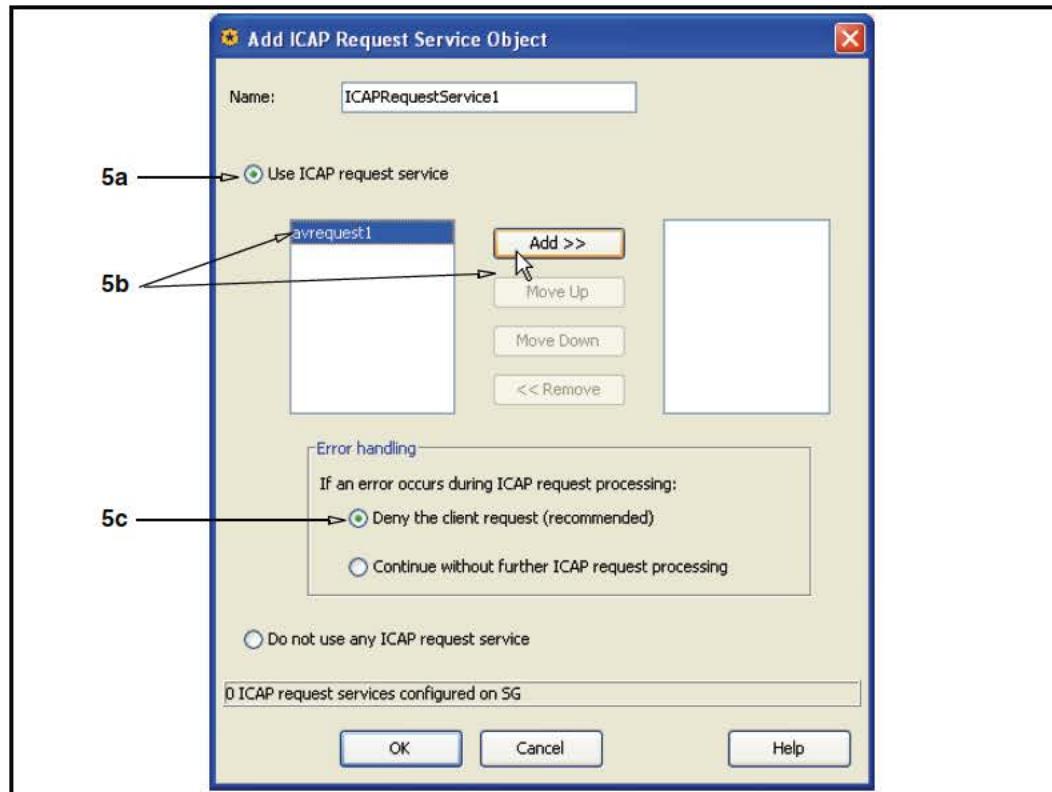
For this example:

- The SG appliance has configured ICAP services. The response service is **avresponse1** and the request service is **avrequest1**.
- Two backup response services are configured: **avresponse2** and **avresponse3**.
- The Blue Coat AV is the virus scanner and it is configured to serve password-protected files.
- A group named IT is configured on the SG appliance.
- The IT group wants the ability to download password protected files, but deny everyone else from doing the same.

Section C: Creating ICAP Policy

To perform virus scanning, protecting both the server side and the client side:

1. In the VPM, select **Policy > Web Access Layer**. Name the layer **RequestAV**.
2. Right-click the **Action** column; select **Set**. The Set Action Object dialog appears.
3. Click **New**.
4. Select **Set ICAP Request Service**; the Add ICAP Request Service Object dialog displays.



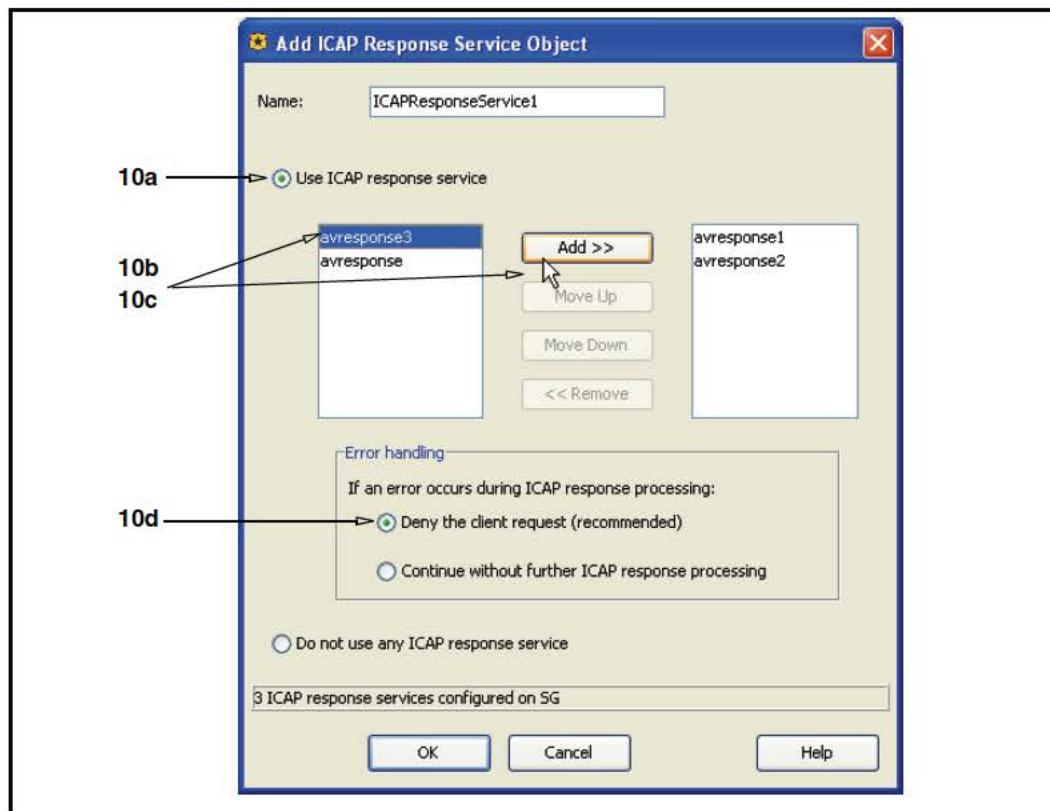
5. Configure the request service object:
 - a. Select **Use ICAP request service**.
 - b. Select the **avrequest1** and click **Add** (this moves the service name to the field on the right).
 - c. Accept the default: **Deny the client request**. This prevents a client from propagating a threat. If a virus is found, the content is not uploaded. For example, a user attempts to post a document that has a virus and is denied.
 - d. Click **OK**; click **OK** again to add the object to the rule.

Section C: Creating ICAP Policy

RequestAV							
No.	Source	Destination	Service	Time	Action	Track	Comment
1	Any	Any	Any	Any	RequestAV	None	

Figure 3-6. Request

6. In the VPM, select **Policy > Web Content Rule**. Name the rule **ResponseAV**.
7. Right-click the **Action** column; select **Set**. The Set Action Object dialog appears.
8. Click **New**.
9. Select **Set ICAP Response Service**; the Add ICAP Response Service Object dialog appears.



10. Configure the response service object:
 - a. Select **Use ICAP response service**.
 - b. Select **avresponse1** and click **Add**.
 - c. Repeat Step b for to add the additional (failover) services.
 - d. Select **Deny the client request**. This scans the responses for viruses before the object is delivered to the client. If a virus is found, the content is not served.
 - e. Click **OK**; click **OK** again to add the object to the rule.

Section C: Creating ICAP Policy

To log a detected virus:

1. In the VPM, select **Policy > Web Access Layer**. Name the layer **AVErrors**.
2. Right-click the **Service** column; select **Set**. The Set Service Object dialog appears.
 - a. Select **Virus Detected** (static object).
 - b. Click **OK** to add the object to the rule.
3. Right-click the **Action** column. Select **Delete**.
4. Right-click the **Track** column. Select **Set**; the Set Track Object dialog appears.
 - a. Click **New**; select **Event Log**. The Event Log dialog appears.
 - b. In the **Name** field, enter **VirusLog1**.
 - c. From the scroll-list, select **icap_virus_details**, **localtime**, and **client-address**. Click **Insert**.
 - d. Click **OK**; click **OK** again to add the object to the rule.

The screenshot shows a table titled 'AVErrors' under the 'Web Access Layer' tab. The table has columns: No., Source, Destination, Service, Time, Action, Track, and Comment. There is one row with the following values: No. 1, Source Any, Destination Any, Service Virus Detected, Time Any, Action Deny (with a red X icon), Track VirusLog1, and Comment empty.

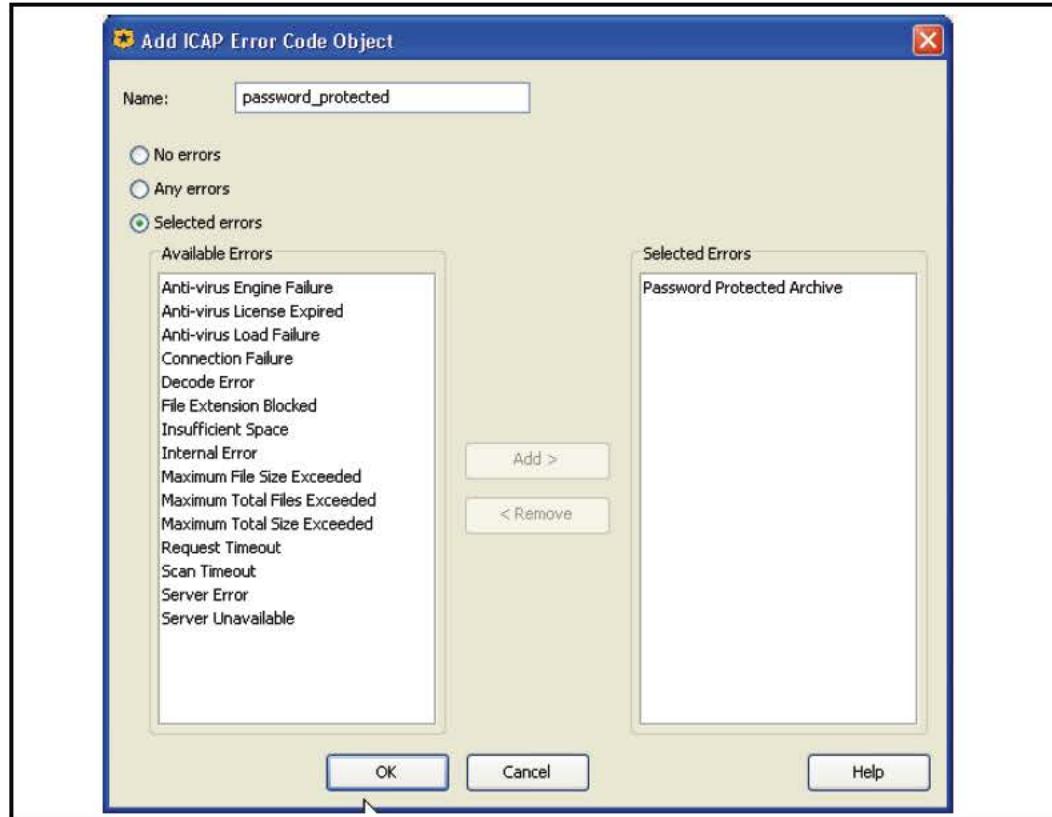
AVErrors							
No.	Source	Destination	Service	Time	Action	Track	Comment
1	Any	Any	Virus Detected	Any	Deny	VirusLog1	

Figure 3-7. The AVErrors rule

To create an exception for IT group:

1. In VPM, select **Policy > Add Web Access Layer**. Name the rule **AVExceptions**.
2. Add the **IT** group object to the **Source** column.
3. Right-click the **Service** column; select **Set**. The Set Service Object dialog appears.
4. Click **New**; select **ICAP Error Code**. The **Add ICAP Error Code Object** appears.

Section C: Creating ICAP Policy



5. Add the error code:
 - a. Select **Selected Errors**.
 - b. From the list of errors, select **Password Protected Archive**; click **Add**.
 - c. Name the object **password_protected**.
 - d. Click **OK**; click **OK** again to add the object to the rule.
6. Right-click the **Action** column and select **Allow**.
7. Click **Add Rule**.
8. In the **Service** column, add the **password_protected** object.
9. Right-click the **Action** column; select **Deny**.

RequestAV ResponseAV AVErrors AVExceptions							
No.	Source	Destination	Service	Time	Action	Track	Comment
1	cn=IT...	Any	password_protected	Any	Allow	None	
2	Any	Any	password_protected	Any	Deny	None	

After this policy is installed:

- Virus scanning is performed for client attempts to upload content and content responses to client requests.
- If a virus is detected and there were no scanning process errors, a log entry occurs.

Section C: Creating ICAP Policy

- As the Blue Coat AV is configured to serve password-protected objects, only the IT group can download such files; everyone else is denied.

Exempting HTTP Live Streams From Response Modification

The following CPL examples demonstrate how to exempt HTTP live streams from response modification, as they are not supported by ICAP. The CPL designates user agents that are bypassed.

```
<proxy>
  url.scheme=http request.header.User-Agent="RealPlayer G2"
    response.icap_service(no)
  url.scheme=http request.header.User-Agent="(RMA)"
    response.icap_service(no)
  url.scheme=http request.header.User-Agent="(Winamp)"
    response.icap_service(no)
  url.scheme=http request.header.User-Agent="(NSPlayer)"
    response.icap_service(no)
  url.scheme=http request.header.User-Agent="(Windows-Media-Player)"
    response.icap_service(no)
  url.scheme=http request.header.User-Agent="QuickTime"
    response.icap_service(no)
  url.scheme=http request.header.User-Agent="(RealMedia Player)"
    response.icap_service(no)
```

Streaming Media Request Modification Note

Some HTTP progressive download streaming media transactions are complex enough to disrupt ICAP request modification services. If such behavior is noticed (most common with RealPlayer), implement a workaround policy to bypass the ICAP request modification service for HTTP progressive downloads:

For example:

```
<proxy>
  url.scheme=http request_header.User-Agent="(RealMedia Player)"
    request.icap_service(no)
  url.scheme=http request_header.User-Agent="RMA"
    request.icap_service(no)
```

CPL Notes

- If policy specifies that an ICAP service is to be used, but the service is not available, the default behavior is to fail closed—that is, deny the request or response. The following CPL allows the serving of objects without ICAP processing if the server is down.

```
request.icap_service(service_name, fail_open)
response.icap_service(service_name, fail_open)
```

When the ICAP service is restored, these objects are scanned and served from the cache if they are requested again.

Note: Blue Coat recommends this CPL to be used for internal sites; use with caution.

Section C: Creating ICAP Policy

- To provide an exception to a general rule, the following CPL negates ICAP processing:

```
request.icap_service(no)  
response.icap_service(no)
```

[Section D: Managing Virus Scanning](#)

Section D: Managing Virus Scanning

You might need to perform additional SG appliance maintenance concerning virus scanning, particularly for updates to the virus definition on the ICAP virus scanning server.

Advanced Configurations

This section summarizes more-advanced configurations between the SG appliance and multiple ICAP servers. These brief examples provide objectives and suggest ways of supporting the configuration.

Using Object-Specific Scan Levels

You can specify different scanning levels for different types of objects, or for objects from different sources.

This requires a service group of ICAP servers, with each server configured to provide the same level of scanning. For more information, refer to [Chapter 4: "Configuring Service Groups"](#) on page 77.

Improving Virus Scanning Performance

You can overcome request-handling limitations of ICAP servers. Generally, SG appliances can handle many times the volume of simultaneous user requests that ICAP servers can handle.

This requires multiple ICAP servers to obtain a reasonable performance gain. On the SG appliance, define policy rules that partition requests among the servers. If you are going to direct requests to individual servers based on rules, configure in rule conditions that only use the URL. Note that you can increase the scale by using a service group, rather than use rules to partition requests among servers. For more information on using multiple ICAP servers, refer to [Chapter 4: "Configuring Service Groups"](#) on page 77. For more information about defining policies, refer to the Managing Policy Files chapter in *Volume 6: VPM and Advanced Policy*, as well as *Volume 11: Blue Coat SG Appliance Command Line Reference*.

When the virus definitions are updated, the SG appliance stores a signature. This signature consists of the server name plus a virus definition version. If either of these changes, the SG appliance checks to see if the object is up to date, and then rescans it. If two requests for the same object are directed to different servers, then the scanning signature changes and the object is rescanned.

Updating the ICAP Server

If there is a problem with the integration between the SG appliance and a supported ICAP server after a version update of the server, you might need to configure the preview size the appliance uses. For information, see ["Creating an ICAP Service"](#) on page 56.

Section D: Managing Virus Scanning

Replacing the ICAP Server

If you replace an ICAP server with another supported ICAP server, reconfigure the ICAP service on the SG appliance:

```
SGOS# (config) external-services
SGOS# (config external-service) edit service_name
SGOS# (config service_name) url url
```

For information about these commands, see “[Creating an ICAP Service](#)” on page 56.

Access Logging

The SG appliance provides access log support for Symantec and Finjan ICAP 1.0 server actions (**Management > Access Logging**). The following sections describe access logging behavior for the various supported ICAP servers.

Symantec AntiVirus Scan Engine 4.0

When this Symantec server performs a scan, identifies a problem (for example, a virus), and performs a content transformation, the action is logged. For example:

```
"virus-id: Type=number; Resolution=[0 | 1 | 2]; Threat=name;"
```

where:

Type=number	Specifies the numeric code for the virus.
Resolution=	Specifies an integer value that indicates what action was taken to fix the file. Zero (0) defines the file is unrepairable, one (1) specifies that the file was repaired, and two (2) specifies that the file was deleted.
Threat=	Specifies the name of the virus.

Finjan SurfinGate 7.0

When this Finjan ICAP server performs a scan, identifies a problem (for example, a virus), and performs a content transformation, the action is logged. For example:

```
"virus-id: name, response-info: Blocked, response-desc: virus_name was detected"
```

Finjan ICAP servers also log occurrences malicious mobile code.

Note: The access log string cannot exceed 256 characters. If the header name or value extends the length over the limit, then that string does not get logged. For example, if the x-virus-id header value is 260 characters, the access log displays "x-virus-id: " with no value because the value is too long to display. Also, if the access log string is already 250 characters and the SG appliance attempts to append a "Malicious-Mobile-Type: " string, the string is not appended

Access log entries might vary depending upon the type of ICAP scan performed and the custom log formats. For information about Access Logging, refer to *Volume 8: Access Logging*.

Chapter 4: Configuring Service Groups

This chapter describes how to create and manage ICAP or Websense service groups. In high-traffic network environments, a service group accelerates response time by performing a higher volume of scanning.

About Weighted Load Balancing

The SG appliance supports weighted load balancing in forwarding requests to service groups. By default, the SG appliance performs typical round-robin load balancing and evenly forwards requests sequentially to servers as defined within the service group. Manually assigning weights takes advantage of round-robin load balancing in service groups that are not homogeneous, or where the servers have different capacities.

Weighting determines what proportion of the load one server bears relative to the others. If all servers have either the default weight (1) or the same weight, each share an equal proportion of the load. If one server has weight 25 and all other servers have weight 50, the 25-weight server processes half as much as any other server.

Before configuring weights, consider the relative weights to assign to each server. Factors that could affect assigned weight of a ICAP server include the following:

- The processing capacity of the server hardware in relationship to other servers (for example, the number and performance of CPUs or the number of network interface cards)
- The maximum number of connections configured for the service. The maximum connections setting pertains to how many simultaneous scans can be performed on the server, while weighting applies to throughput in the integration. While these settings are not directly related, consider both when configuring weighted load balancing.

Note: External services (ICAP, Websense off-box) have a reserved connection for health checks (if you created health check services). This means that as the load goes up and the number of connections to the external service reaches the maximum, with additional requests being queued up and waiting, the maximum simultaneous connections is actually one less than the limit.

The following diagram provides an example of how weighting works with a service group of three Blue Coat AV ICAP servers.

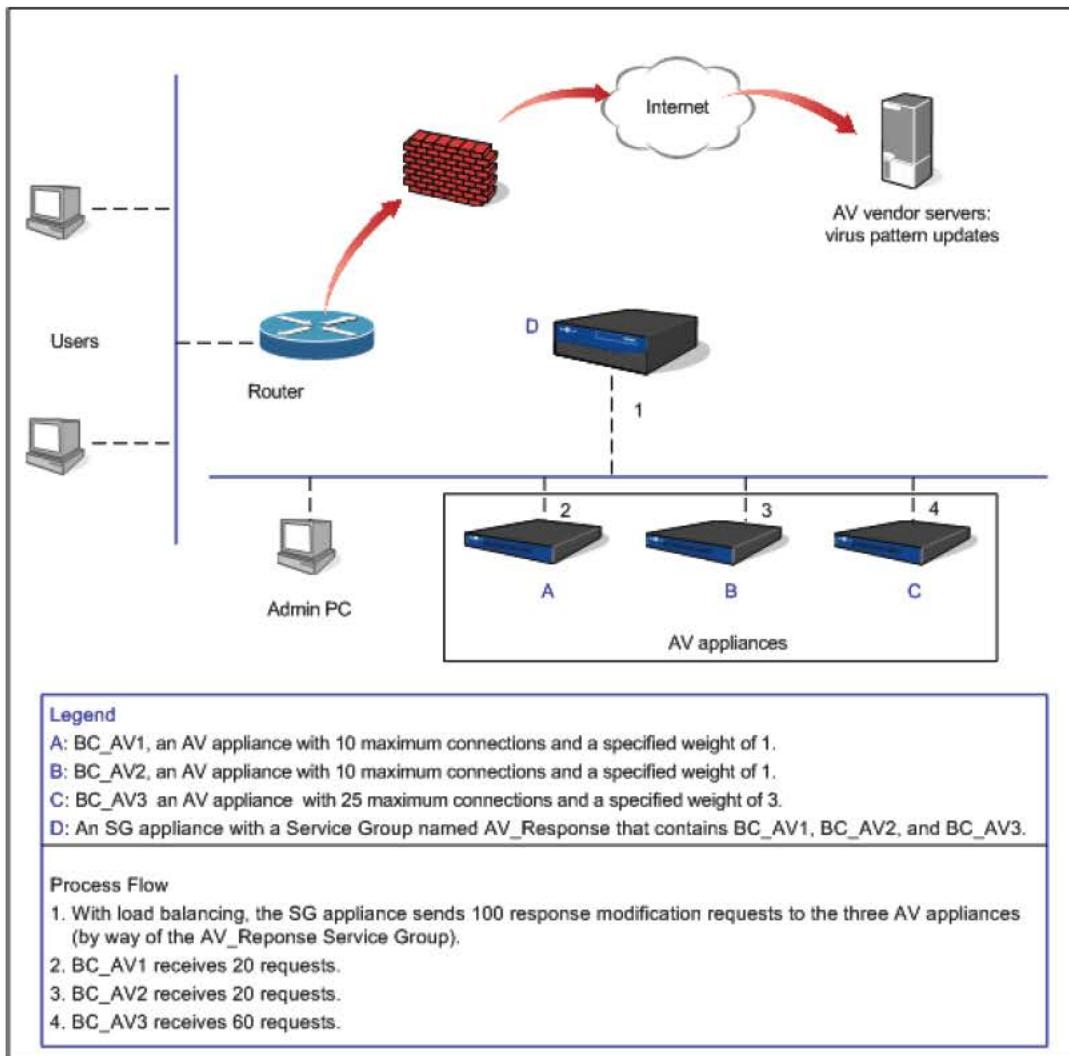


Figure 4-1. Service Group Process Flow

Note: Setting the weight value to 0 (zero) disables weighted load balancing for the ICAP service. Therefore, if one ICAP server of a two-server group has a weight value of 1 and the second a weight value of 0, should the first server go down, a communication error results because the second server cannot process the request.

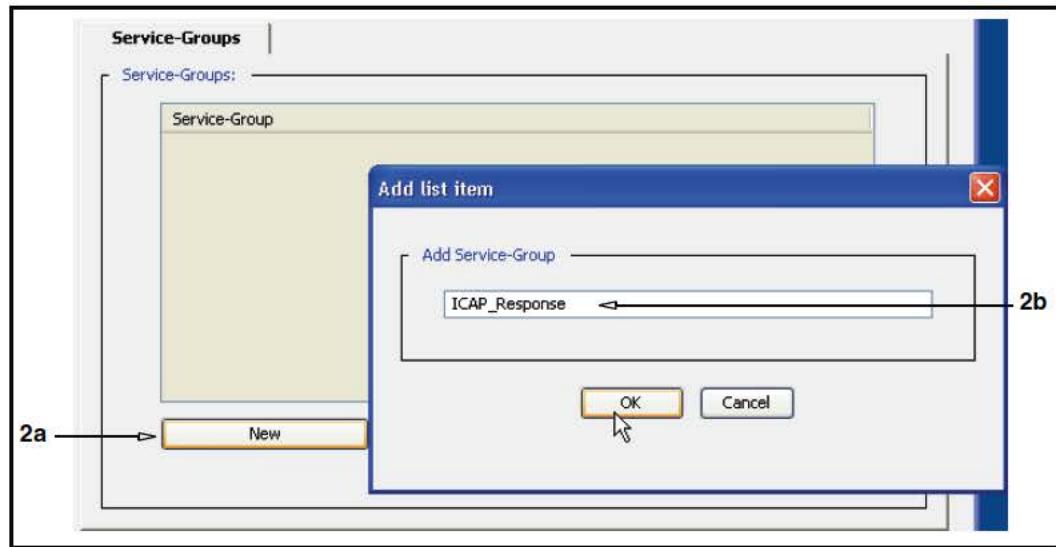
While you cannot specifically designate an ICAP server in a group as a backup, you can specify weight values that create a large differential between a server that is used continuously and one that is rarely used, thus simulating a backup server.

Creating a Service Group

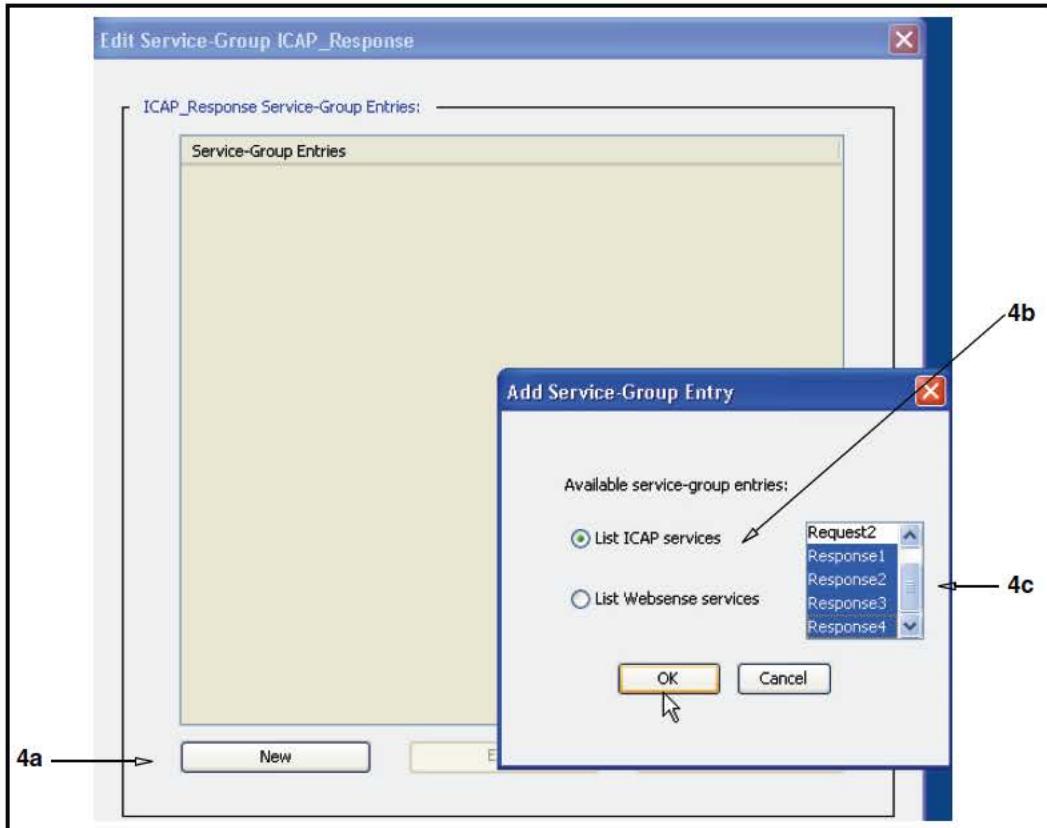
Create the service group and add the relevant ICAP or Websense services to the group. Services within group must be the same type (ICAP or Websense).

To configure a service group:

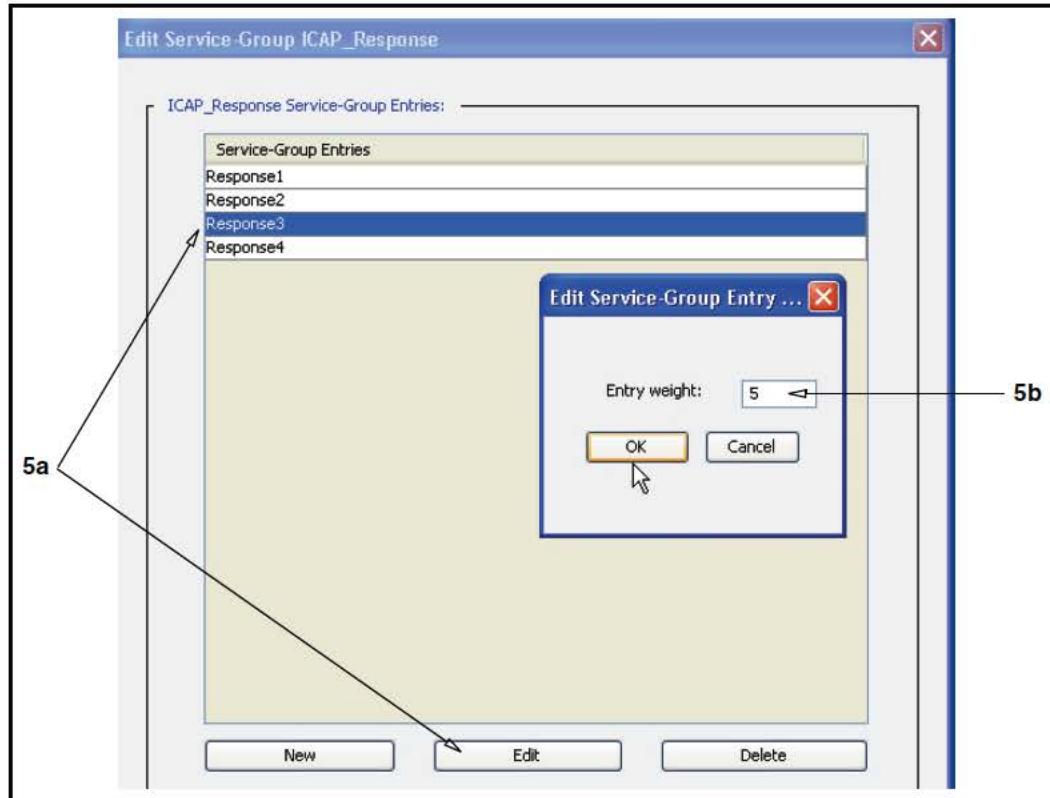
1. Select Configuration > External Services > Service-Groups.



2. Add a new group:
 - a. Click **New**; the Add List Item dialog appears.
 - b. In the **Add Service Group** field, enter an alphanumeric name. This example creates a group called **ICAP_Response**.
 - c. Click **OK**.
3. Highlight the new service group name and click **Edit**; the Edit Service Group dialog appears.



4. Select existing services:
 - a. Click **New**; the Add Service Group Entry dialog appears.
 - b. If this SG appliance contains many configured ICAP or Websense (off-box) services, you can narrow the viewable list by selecting **List ICAP services** or **List Websense services**.
 - c. From the list of existing services, select the ones to add to this group. Hold the Control or Shift key to select multiple services.
 - d. Click **OK** to add the selected services to group.



5. Assign weights to services:
 - a. Select a service and click **Edit**; the Edit Service Group Entry weight dialog appears.
 - b. In the **Entry Weight** field, assign a weight value. The valid range is 0-255. For conceptual information about service weighting, see “About Weighted Load Balancing” on page 77.
 - c. Repeat steps a and b for other services, as required.
 - d. Click **OK** to close the dialog.
 - e. Click **OK** again to close the Edit Service Group Entry dialog
6. Click **Apply**.

Result: When instructed by created policies, the SG appliance sends ICAP response modification requests to ICAP servers in the service group. The load carried by each service in the group is determined by the weight values.

Deleting a Service Group or Group Entry

You can delete the configuration for an entire service group from the SG appliance, or you can delete individual entries from a service group.

Note: A service or service group used in a SG appliance policy (that is, if a policy rule uses the entry) cannot be deleted; it must first be removed from the policy.

To delete a service group:

1. Select **Configuration > External Services > Service-Groups**.
2. Select the service group to be deleted.
3. Click **Delete**; click **OK** to confirm.
4. Click **Apply**.

To delete a service group entry:

1. Select **Configuration > External Services > Service-Groups**.
2. Select the service group to be modified.
3. Click **Edit**.
4. Select the service entry to be deleted; click **Delete**.
5. Click **OK**.
6. Click **Apply**.

Displaying External Service and Group Information

After configuring a service group, you can display aggregate service group (and other External Services) information.

To display information about all external services and groups:

At the (config) command prompt, enter the following commands:

```
SGOS# (config) external-services  
SGOS# (config external-services) view
```

Individual service information is displayed first, followed by service group information.
For example:

```
; External Services  
icap4  
ICAP-Version: 1.0  
URL: icap://10.1.1.1  
Max-conn: 5  
Timeout(secs): 70  
Health-checks: no  
Patience-page(secs): disabled  
Notification: never  
Methods: RESP/MOD  
Preview-size: 0  
Send: nothing  
ISTag:  
  
websense4  
Version: 4.4  
Host: www.websense.com/list  
Port: 15868  
Max-conn: 5  
Timeout(secs): 70  
Send: nothing  
Fail-by-default: closed  
Apply-by-default: no  
Serve-exception-page:yes
```

```
; External Service-Groups
CorpICAP
    total weight 5
entries:
    ICAP1
        weight 4
    ICAP2
        weight 1
BranchWebsense
    total weight 2
entries:
    Websense1
        weight 1
    Websense2
        weight 1
```

Related CLI Syntax to Manage External Services

- To enter configuration mode:

```
SGOS# (config) external-services
```

- The following commands are available:

```
SGOS# (config external-services) create service-group name
SGOS# (config service-group name) add service_name
SGOS# (config service-group name) edit service_name
SGOS# (config service-group name) weight value
SGOS# (config external-services) delete service_group_name
SGOS# (config type name) remove entry_name
SGOS# (config external-services) view
SGOS# (config type name) view
```


Appendix A: Glossary

A

access control list	Allows or denies specific IP addresses access to a server.
access log	A list of all the requests sent to an appliance. You can read an access log using any of the popular log-reporting programs. When a client uses HTTP streaming, the streaming entry goes to the same access log.
account	A named entity that has purchased the appliance or the Entitlements from Blue Coat.
activation code	A string of approximately 10 characters that is generated and mailed to customers when they purchase the appliance.
active content stripping	Provides a way to identify potentially dangerous mobile or active content and scripts, and strip them out of a response.
active content types	Used in the Visual Policy Manager. Referring to Web Access policies, you can create and name lists of active content types to be stripped from Web pages. You have the additional option of specifying a customized message to be displayed to the user
administration access policy	A policy layer that determines who can access the SG appliance to perform administrative tasks.
administration authentication policy	A policy layer that determines how administrators accessing the SG appliance must authenticate.
Application Delivery Network (ADN)	A WAN that has been optimized for acceleration and compression by Blue Coat. This network can also be secured through the use of appliance certificates. An ADN network is composed of an ADN manager and backup ADN manager, ADN nodes, and a network configuration that matches the environment.
ADN backup manager	Takes over for the ADN manager in the event it becomes unavailable. See <i>ADN manager</i> .
ADN manager	Responsible for publishing the routing table to SG Clients (and to other SG appliances).
ADN optimize attribute	Controls whether to optimize bandwidth usage when connecting upstream using an ADN tunnel.
asx rewrite	Allows you to rewrite URLs and then direct a client's subsequent request to the new URL. One of the main applications of ASX file rewrites is to provide explicit proxy-like support for Windows Media Player 6.4, which cannot set explicit proxy mode for protocols other than HTTP.
audit	A log that provides a record of who accessed what and how.

authenticate-401 attribute	All transparent and explicit requests received on the port always use transparent authentication (cookie or IP, depending on the configuration). This is especially useful to force transparent proxy authentication in some proxy-chaining scenarios.
authenticated content	Cached content that requires authentication at the origin content server (OCS). Supported authentication types for cached data include basic authentication and IWA (or NTLM).
authentication	Allows you to verify the identity of a user. In its simplest form, this is done through usernames and passwords. Much more stringent authentication can be employed using digital certificates that have been issued and verified by a Certificate Authority. <i>See also</i> basic authentication, proxy authentication, and SSL authentication.
authentication realm	Authenticates and authorizes users to access SG services using either explicit proxy or transparent proxy mode. These realms integrate third-party vendors, such as LDAP, Windows, and Novell, with the Blue Coat operating system.
authorization	The permissions given to an authenticated user.

B

bandwidth class	A defined unit of bandwidth allocation.
bandwidth class hierarchy	Bandwidth classes can be grouped together in a class hierarchy, which is a tree structure that specifies the relationship among different classes. You create a hierarchy by creating at least one parent class and assigning other classes to be its children.
bandwidth management	Classify, control, and, if needed, limit the amount of bandwidth used by network traffic flowing in or out of an SG appliance.
basic authentication	The standard authentication for communicating with the target as identified in the URL.
BCAAA	Blue Coat Authentication and Authorization Agent. Allows SGOS 5.x to manage authentication and authorization for IWA, CA eTrust SiteMinder realms, Oracle COREid, Novell, and Windows realms. The agent is installed and configured separately from SGOS 5.x and is available from the Blue Coat Web site.
BCLP	Blue Coat Licensing Portal.
byte-range support	The ability of the SG appliance to respond to byte-range requests (requests with a Range : HTTP header).

C

cache	An "object store," either hardware or software, that stores information (objects) for later retrieval. The first time the object is requested, it is stored, making subsequent requests for the same information much faster. A cache helps reduce the response time and network bandwidth consumption on future, equivalent requests. The SG appliance serves as a cache by storing content from many users to minimize response time and prevent extraneous network traffic.
-------	---

cache control	Allows you to configure which content the SG appliance stores.
cache efficiency	A tab found on the Statistics pages of the Management Console that shows the percent of objects served from cache, the percent loaded from the network, and the percent that were non-cacheable.
cache hit	Occurs when the SG appliance receives a request for an object and can serve the request from the cache without a trip to the origin server.
cache miss	Occurs when the appliance receives a request for an object that is not in the cache. The appliance must then fetch the requested object from the origin server.
cache object	Cache contents includes all objects currently stored by the SG appliance. Cache objects are not cleared when the SG appliance is powered off.
Certificate Authority (CA)	A trusted, third-party organization or company that issues digital certificates used to create digital signatures and public key/private key pairs. The role of the CA is to guarantee that the individuals or company representatives who are granted a unique certificate are who they claim to be.
child class (bandwidth gain)	The child of a parent class is dependent upon that parent class for available bandwidth (they share the bandwidth in proportion to their minimum/maximum bandwidth values and priority levels). A child class with siblings (classes with the same parent class) shares bandwidth with those siblings in the same manner.
client consent certificates	A certificate that indicates acceptance or denial of consent to decrypt an end user's HTTPS request.
client-side transparency	A way of replacing the appliance IP address with the Web server IP address for all port 80 traffic destined to go to the client. This effectively conceals the SG appliance address from the client and conceals the identity of the client from the Web server.
concentrator	An SG appliance, usually located in a data center, that provides access to data center resources, such as file servers.
content filtering	A way of controlling which content is delivered to certain users. SG appliances can filter content based on content categories (such as gambling, games, and so on), type (such as http, ftp, streaming, and mime type), identity (user, group, network), or network conditions. You can filter content using vendor-based filtering or by allowing or denying access to URLs.
D	
default boot system	The system that was successfully started last time. If a system fails to boot, the next most recent system that booted successfully becomes the default boot system.
default proxy listener	<i>See proxy service (d efault).</i>

denial of service (DoS)	A method that hackers use to prevent or deny legitimate users access to a computer, such as a Web server. DoS attacks typically send many request packets to a targeted Internet server, flooding the server's resources and making the system unusable. Any system connected to the Internet and equipped with TCP-based network services is vulnerable to a DoS attack. The SG appliance resists DoS attacks launched by many common DoS tools. With a hardened TCP/IP stack, SG appliance resists common network attacks, including traffic flooding.
destination objects	Used in Visual Policy Manager. These are the objects that define the target location of an entry type.
detect protocol attribute	Detects the protocol being used. Protocols that can be detected include: HTTP, P2P (eDonkey, BitTorrent, FastTrack, Gnutella), SSL, and Endpoint Mapper.
diagnostic reporting	Found in the Statistics pane, the Diagnostics tab allows you to control whether Daily Heartbeats and/or Blue Coat Monitoring are enabled or disabled.
directives	Commands used in installable lists to configure forwarding and SOCKS gateway.
DNS access	A policy layer that determines how the SG appliance processes DNS requests.
domain name system (DNS)	An Internet service that translates domain names into IP addresses. <i>See also</i> private DNS or public DNS.
dynamic bypass	Provides a maintenance-free method for improving performance of the SG appliance by automatically compiling a list of requested URLs that return various kinds of errors.
dynamic real-time rating (DRTR)	Used in conjunction with the Blue Coat Web Filter (BCWF), DRTR (also known as <i>dynamic categorization</i>) provides real-time analysis and content categorization of requested Web pages to solve the problem of new and previously unknown uncategorized URLs—those not in the database. When a user requests a URL that has not already been categorized by the BCWF database (for example, a brand new Web site), the SG appliance dynamic categorization service analyzes elements of the requested content and assigns a category or categories. The dynamic service is consulted <i>only</i> when the installed BCWF database does not contain category information for an object.

E

early intercept attribute	Controls whether the proxy responds to client TCP connection requests before connecting to the upstream server. When early intercept is disabled, the proxy delays responding to the client until after it has attempted to contact the server.
ELFF-compatible format	A log type defined by the W3C that is general enough to be used with any protocol.
emulated certificates	Certificates that are presented to the user by SG appliance when intercepting HTTPS requests. Blue Coat emulates the certificate from the server and signs it, copying the subjectName and expiration. The original certificate is used between the SG appliance and the server.
encrypted log	A log is encrypted using an external certificate associated with a private key. Encrypted logs can only be decrypted by someone with access to the private key. The private key is not accessible to the SG appliance.

EULA	End user license agreement.
event logging	Allows you to specify the types of system events logged, the size of the event log, and to configure Syslog monitoring. The appliance can also notify you by email if an event is logged. <i>See also</i> access logging.
explicit proxy	A configuration in which the browser is explicitly configured to communicate with the proxy server for access to content. This is the default for the SG appliance, and requires configuration for both browser and the interface card.
extended log file format (ELFF)	A variant of the common log file format, which has two additional fields at the end of the line—the referer and the user agent fields.
F	
fail open/closed	Failing open or closed applies to forwarding hosts and groups and SOCKS gateways. Fail open or closed applies when health checks are showing sick for each forwarding or SOCKS gateway target in the applicable fail-over sequence. If no systems are healthy, the SG appliance fails open or closed, depending on the configuration. If closed, the connection attempt simply fails. If open, an attempt is made to connect without using any forwarding target (or SOCKS gateway). Fail open is usually a security risk; fail closed is the default if no setting is specified.
filtering	<i>See</i> content filtering.
forward proxy	A proxy server deployed close to the clients and used to access many servers. A forward proxy can be explicit or transparent.
FTP	<i>See</i> Native FTP; Web FTP.
G	
gateway	A device that serves as entrance and exit into a communications network.
H	
hardware serial number	A string that uniquely identifies the appliance; it is assigned to each unit in manufacturing.

health check tests	<p>The method of determining network connectivity, target responsiveness, and basic functionality. The following tests are supported:</p> <ul style="list-style-type: none">• ICMP• TCP• SSL• HTTP• HTTPS• Group• Composite and reference to a composite result• ICAP• Websense• DRTR rating service
health check type	<p>The kind of device or service the specific health check tests. The following types are supported:</p> <ul style="list-style-type: none">• Forwarding host and forwarding group• SOCKS gateway and SOCKS gateway group• CAP service and ICAP service group• Websense off-box service and Websense off-box service group• DRTR rating service• User-defined host and a user-defined composite
heartbeat	<p>Messages sent once every 24 hours that contain the statistical and configuration data for the SG appliance, indicating its health. Heartbeats are commonly sent to system administrators and to Blue Coat. Heartbeats contain no private information, only aggregate statistics useful for pre-emptively diagnosing support issues.</p> <p>The SG appliance sends emergency heartbeats whenever it is rebooted. Emergency heartbeats contain core dump and restart flags in addition to daily heartbeat information.</p>
host affinity	<p>The attempt to direct multiple connections by a single user to the same group member. Host affinity is closely tied to load balancing behavior; both should be configured if load balancing is important.</p>
host affinity timeout	<p>The host affinity timeout determines how long a user remains idle before the connection is closed. The timeout value checks the user's IP address, SSL ID, or cookie in the host affinity table.</p>
inbound traffic (bandwidth gain)	<p>Network packets flowing into the SG appliance. Inbound traffic mainly consists of the following:</p> <ul style="list-style-type: none">• Server inbound: Packets originating at the origin content server (OCS) and sent to the SG appliance to load a Web object.• Client inbound: Packets originating at the client and sent to the SG appliance for Web requests.

installable lists	Installable lists, comprised of directives, can be placed onto the SG appliance in one of the following ways: <ul style="list-style-type: none"> • Creating the list using the SG text editor • Placing the list at an accessible URL • Downloading the directives file from the local system
integrated host timeout	An integrated host is an origin content server (OCS) that has been added to the health check list. The host, added through the <code>integrate_new_hosts</code> property, ages out of the integrated host table after being idle for the specified time. The default is 60 minutes.
intervals	Time period from the completion of one health check to the start of the next health check.
IP reflection	Determines how the client IP address is presented to the origin server for explicitly proxied requests. All proxy services contain a <code>reflect-ip</code> attribute, which enables or disables sending of client's IP address instead of the SG's IP address.
issuer keyring	The keyring used by the SG appliance to sign emulated certificates. The keyring is configured on the appliance and managed through policy.
L	
licensable component (LC)	(Software) A subcomponent of a license; it is an option that enables or disables a specific feature.
license	Provides both the right and the ability to use certain software functions within an AV (or SG) appliance. The license key defines and controls the license, which is owned by an account.
listener	The service that is listening on a specific port. A listener can be identified by any destination IP/subnet and port range. Multiple listeners can be added to each service.
live content	Also called live broadcast. Used in streaming, it indicates that the content is being delivered fresh.
LKF	License key file.
load balancing	A way to share traffic requests among multiple upstream systems or multiple IP addresses on a single host.
local bypass list	A list you create and maintain on your network. You can use a local bypass list alone or in conjunction with a central bypass list. See <code>bypass list</code> .
local policy file	Written by enterprises (as opposed to the central policy file written by Blue Coat); used to create company- and department-specific advanced policies written in the Blue Coat Policy Language (CPL).
log facility	A separate log that contains a single logical file and supports a single log format. It also contains the file's configuration and upload schedule information as well as other configurable information such as how often to rotate (switch to a new log) the logs at the destination, any passwords needed, and the point at which the facility can be uploaded.

log format	The type of log that is used: NCSA/Common, SQUID, ELFF, SurfControl, or Websense. The proprietary log types each have a corresponding pre-defined log format that has been set up to produce exactly that type of log (these logs cannot be edited). In addition, a number of other ELFF type log formats are also pre-defined (im, main, p2p, ssl, streaming). These can be edited, but they start out with a useful set of log fields for logging particular protocols understood by the SG appliance. It is also possible to create new log formats of type ELFF or Custom which can contain any desired combination of log fields.
log tail	The access log tail shows the log entries as they get logged. With high traffic on the SG appliance, not all access log entries are necessarily displayed. However, you can view all access log information after uploading the log.
M	
MACH5	SGOS 5 MACH5 Edition.
Management Console	A graphical Web interface that lets you to manage, configure, monitor, and upgrade the SG appliance from any location. The Management Console consists of a set of Web pages and Java applets stored on the SG appliance. The appliance acts as a Web server on the management port to serve these pages and applets.
management information base (MIB)	Defines the statistics that management systems can collect. A managed device (gateway) has one or more MIBs as well as one or more SNMP agents, which implements the information and management functionality defined by a specific MIB.
maximum object size	The maximum object size stored in the SG appliance. All objects retrieved that are greater than the maximum size are delivered to the client but are not stored in the SG appliance.
MIME/FILE type filtering	Allows organizations to implement Internet policies for both uploaded and downloaded content by MIME or FILE type.
multi-bit rate	The capability of a single stream to deliver multiple bit rates to clients requesting content from appliances from within varying levels of network conditions (such as different connecting bandwidths and traffic).
multicast	Used in streaming; the ability for hundreds or thousands of users to play a single stream.
multicast aliases	Used in streaming; a streaming command that specifies an alias for a multicast URL to receive an .nsc file. The .nsc files allows the multicast session to obtain the information in the control channel
multicast station	Used in streaming; a defined location on the proxy where the Windows Media player can retrieve streams. A multicast station enables multicast transmission of Windows Media content from the cache. The source of the multicast-delivered content can be a unicast-live source, a multicast (live) source, and simulated live (video-on-demand content converted to scheduled live content).
multimedia content services	Used in streaming; multimedia support includes Real Networks, Microsoft Windows Media, Apple QuickTime, MP3, and Flash.

N

name inputing	Allows an SG appliance to resolve host names based on a partial name specification. When a host name is submitted to the DNS server, the DNS server resolves the name to an IP address. If the host name cannot be resolved, Blue Coat adds the first entry in the name-inputing list to the end of the host name and resubmits it to the DNS server
native FTP	Native FTP involves the client connecting (either explicitly or transparently) using the FTP protocol; the SG appliance then connects upstream through FTP (if necessary).
NCSA common log format	Blue Coat products are compatible with this log type, which contains only basic HTTP access information.
network address translation (NAT)	The process of translating private network (such as intranet) IP addresses to Internet IP addresses and vice versa. This methodology makes it possible to match private IP addresses to Internet IP addresses even when the number of private addresses outnumbers the pool of available Internet addresses.
non-cacheable objects	A number of objects are not cached by the Blue Coat appliance because they are considered non-cacheable. You can add or delete the kinds of objects that the appliance considers non-cacheable. Some of the non-cacheable request types are: <ul style="list-style-type: none">• Pragma no-cache, requests that specify non-cached objects, such as when you click refresh in the Web browser.• Password provided, requests that include a client password.• Data in request that include additional client data.• Not a GET request.
.nsc file	Created from the multicast station definition and saved through the browser as a text file encoded in a Microsoft proprietary format. Without an .nsc file, the multicast station definition does not work.

NTP

To manage objects in an appliance, an SG appliance must know the current Universal Time Coordinates (UTC) time. By default, the SG appliance attempts to connect to a Network Time Protocol (NTP) server to acquire the UTC time. SG appliance includes a list of NTP servers available on the Internet, and attempts to connect to them in the order they appear in the NTP server list on the NTP tab.

O

object (used in caching)	An object is the item that is stored in an appliance. These objects can be frequently accessed content, content that has been placed there by content publishers, or Web pages, among other things.
object (used in Visual Policy Manager)	An object (sometimes referred to as a condition) is any collection or combination of entry types you can create individually (user, group, IP address/subnet, and attribute). To be included in an object, an item must already be created as an individual entry.
object pipelining	This patented algorithm opens as many simultaneous TCP connections as the origin server will allow and retrieves objects in parallel. The objects are then delivered from the appliance straight to the user's desktop as fast as the browser can request them.

origin content server (OCS)	Also called origin server. This is the original source of the content that is being requested. An appliance needs the OCS to acquire data the first time, to check that the content being served is still fresh, and to authenticate users.
outbound traffic (bandwidth gain)	Network packets flowing out of the SG appliance. Outbound traffic mainly consists of the following: <ul style="list-style-type: none">• Client outbound: Packets sent to the client in response to a Web request.• Server outbound: Packets sent to an OCS or upstream proxy to request a service.
P	
PAC (Proxy AutoConfiguration) scripts	Originally created by Netscape, PACs are a way to avoid requiring proxy hosts and port numbers to be entered for every protocol. You need only enter the URL. A PAC can be created with the needed information and the local browser can be directed to the PAC for information about proxy hosts and port numbers.
packet capture (PCAP)	Allows filtering on various attributes of the Ethernet frame to limit the amount of data collected. You can capture packets of Ethernet frames going into or leaving an SG appliance.
parent class (bandwidth gain)	A class with at least one child. The parent class must share its bandwidth with its child classes in proportion to the minimum/maximum bandwidth values or priority levels.
passive mode data connections (PASV)	Data connections initiated by an FTP client to an FTP server.
pipelining	<i>See</i> object pipelining.
policies	Groups of rules that let you manage Web access specific to the needs of an enterprise. Policies enhance SG appliance feature areas such as authentication and virus scanning, and let you control end-user Web access in your existing infrastructure. <i>See also</i> refresh policies.
policy-based bypass list	Used in policy. Allows a bypass based on the properties of the client, unlike static and dynamic bypass lists, which allow traffic to bypass the appliance based on destination IP address. <i>See also</i> bypass lists and dynamic bypass.
policy layer	A collection of rules created using Blue Coat CPL or with the VPM.
pragma: no cache (PNC)	A metatag in the header of a request that requires the appliance to forward a request to the origin server. This allows clients to always obtain a fresh copy (<i>of the request?</i>).
proxy	Caches content, filters traffic, monitors Internet and intranet resource usage, blocks specific Internet and intranet resources for individuals or groups, and enhances the quality of Internet or intranet user experiences. A proxy can also serve as an intermediary between a Web client and a Web server and can require authentication to allow identity based policy and logging for the client. The rules used to authenticate a client are based on the policies you create on the SG appliance, which can reference an existing security infrastructure—LDAP, RADIUS, IWA, and the like.

Proxy Edition	SGOS 5 Proxy Edition.
proxy service	The proxy service defines the ports, as well as other attributes, that are used by the proxies associated with the service.
proxy service (default)	The default proxy service is a service that intercepts all traffic not otherwise intercepted by other listeners. It only has one listener whose action can be set to bypass or intercept. No new listeners can be added to the default proxy service, and the default listener and service cannot be deleted. Service attributes can be changed.
public key certificate	An electronic document that encapsulates the public key of the certificate sender, identifies this sender, and aids the certificate receiver to verify the identity of the certificate sender. A certificate is often considered valid if it has been digitally signed by a well-known entity, which is called a Certificate Authority (such as VeriSign).
public virtual IP (VIP)	Maps multiple servers to one IP address and then propagates that information to the public DNS servers. Typically, there is a public VIP known to the public Internet that routes the packets internally to the private VIP. This enables you to "hide" your servers from the Internet.

R

real-time streaming protocol (RTSP)	A standard method of transferring audio and video and other time-based media over Internet-technology based networks. The protocol is used to stream clips to any RTP-based client.
reflect client IP attribute	Enables the sending of the client's IP address instead of the SG's IP address to the upstream server. If you are using an application delivery network (ADN), this setting is enforced on the concentrator proxy through the Configuration > App. Delivery Network > Tunneling tab.
registration	An event that binds the appliance to an account, that is, it creates the Serial#, Account association.
remote authentication dial-in user service (RADIUS)	Authenticates user identity via passwords for network access.
reverse proxy	A proxy that acts as a front-end to a small number of pre-defined servers, typically to improve performance. Many clients can use it to access the small number of predefined servers.
routing information protocol (RIP)	Designed to select the fastest route to a destination. RIP support is built into Blue Coat appliances.
router hops	The number of jumps a packet takes when traversing the Internet.

S

secure shell (SSH)	Also known as Secure Socket Shell. SSH is an interface and protocol that provides strong authentication and enables you to securely access a remote computer. Three utilities—login, ssh, and scp—comprise SSH. Security via SSH is accomplished using a digital certificate and password encryption. Remember that the Blue Coat SG appliance requires SSH1. An SG appliance supports a combined maximum of 16 Telnet and SSH sessions.
serial console	A third-party device that can be connected to one or more Blue Coat appliances. Once connected, you can access and configure the appliance through the serial console, even when you cannot access the appliance directly.
server certificate categories	The hostname in a server certificate can be categorized by BCWF or another content filtering vendor to fit into categories such as banking, finance, sports.
server portals	Doorways that provide controlled access to a Web server or a collection of Web servers. You can configure Blue Coat SG appliances to be server portals by mapping a set of external URLs onto a set of internal URLs.
server-side transparency	The ability for the server to see client IP addresses, which enables accurate client-access records to be kept. When server-side transparency is enabled, the appliance retains client IP addresses for all port 80 traffic to and from the SG appliance. In this scheme, the client IP address is always revealed to the server.
service attributes	Define the parameters, such as explicit or transparent, cipher suite, and certificate verification, that the SG appliance uses for a particular service..
SG appliance	A Blue Coat security and cache box that can help manage security and content on a network.
sibling class (bandwidth gain)	A bandwidth class with the same parent class as another class.
simple network management protocol (SNMP)	The standard operations and maintenance protocol for the Internet. It uses MIBs, created or customized by Blue Coat, to handle (<i>needs completion</i>).
simulated live	Used in streaming. Defines playback of one or more video-on-demand files as a scheduled live event, which begins at a specified time. The content can be looped multiple times, or scheduled to start at multiple start times throughout the day.
SmartReporter log type	A proprietary ELFF log type that is compatible with the SmartFilter SmartReporter tool.
SOCKS	A proxy protocol for TCP/IP-based networking applications that allows users transparent access across the firewall. If you are using a SOCKS server for the primary or alternate forwarding gateway, you must specify the appliance's ID for the identification protocol used by the SOCKS gateway. The machine ID should be configured to be the same as the appliance's name.
SOCKS proxy	A generic way to proxy TCP and UDP protocols. The SG appliance supports both SOCKSv4/4a and SOCKSv5; however, because of increased username and password authentication capabilities and compression support, Blue Coat recommends that you use SOCKS v5.
splash page	Custom message page that displays the first time you start the client browser.

split proxy	Employs co-operative processing at the branch and the core to implement functionality that is not possible in a standalone proxy. Examples of split proxies include: <ul style="list-style-type: none">• Mapi Proxy• SSL Proxy
SQUID-compatible format	A log type that was designed for cache statistics and is compatible with Blue Coat products.
squid-native log format	The Squid-compatible format contains one line for each request.
SSL authentication	Ensures that communication is with “trusted” sites only. Requires a certificate issued by a trusted third party (Certificate Authority).
SSL interception	Decrypting SSL connections.
SSL proxy	A proxy that can be used for any SSL traffic (HTTPS or not), in either forward or reverse proxy mode.
static route	A manually-configured route that specifies the transmission path a packet must follow, based on the packet’s destination address. A static route specifies a transmission path to another network.
statistics	Every Blue Coat appliance keeps statistics of the appliance hardware and the objects it stores. You can review the general summary, the volume, resources allocated, cache efficiency, cached contents, and custom URLs generated by the appliance for various kinds of logs. You can also check the event viewer for every event that occurred since the appliance booted.
stream	A flow of a single type of data, measured in kilobits per second (Kbps). A stream could be the sound track to a music video, for example.
SurfControl log type	A proprietary log type that is compatible with the SurfControl reporter tool. The SurfControl log format includes fully-qualified usernames when an NTLM realm provides authentication. The simple name is used for all other realm types.
syslog	An event-monitoring scheme that is especially popular in Unix environments. Most clients using Syslog have multiple devices sending messages to a single Syslog daemon. This allows viewing a single chronological event log of all of the devices assigned to the Syslog daemon. The Syslog format is: “Date Time Hostname Event.”
system cache	The software cache on the appliance. When you clear the cache, all objects in the cache are set to expired. The objects are not immediately removed from memory or disk, but a subsequent request for any object requested is retrieved from the origin content server before it is served.
T	
time-to-live (TTL) value	Used in any situation where an expiration time is needed. For example, you do not want authentication to last beyond the current session and also want a failed command to time out instead of hanging the box forever.

traffic flow (bandwidth gain)	Also referred to as <i>flow</i> . A set of packets belonging to the same TCP/UDP connection that terminate at, originate at, or flow through the SG appliance. A single request from a client involves two separate connections. One of them is from the client to the SG appliance, and the other is from the SG appliance to the OCS. Within each of these connections, traffic flows in two directions—in one direction, packets flow out of the SG appliance (outbound traffic), and in the other direction, packets flow into the SG (inbound traffic). Connections can come from the client or the server. Thus, traffic can be classified into one of four types: <ul style="list-style-type: none">• Server inbound• Server outbound• Client inbound• Client outbound These four traffic flows represent each of the four combinations described above. Each flow represents a single direction from a single connection.
transmission control protocol (TCP)	TCP, when used in conjunction with IP (Internet Protocol) enables users to send data, in the form of message units called packets, between computers over the Internet. TCP is responsible for tracking and handling, and reassembly of the packets; IP is responsible for packet delivery.
transparent proxy	A configuration in which traffic is redirected to the SG appliance without the knowledge of the client browser. No configuration is required on the browser, but network configuration, such as an L4 switch or a WCCP-compliant router, is required.
trial period	Starting with the first boot, the trial period provides 60 days of free operation. All features are enabled during this time.
U	
unicast alias	Defines a name on the appliance for a streaming URL. When a client requests the alias content on the appliance, the appliance uses the URL specified in the unicast-alias command to request the content from the origin streaming server.
universal time coordinates (UTC)	An SG appliance must know the current UTC time. By default, the appliance attempts to connect to a Network Time Protocol (NTP) server to acquire the UTC time. If the SG appliance cannot access any NTP servers, you must manually set the UTC time.
URL filtering	<i>See</i> content filtering.
URL rewrite rules	Rewrite the URLs of client requests to acquire the streaming content using the new URL. For example, when a client tries to access content on www.mycompany.com, the appliance is actually receiving the content from the server on 10.253.123.123. The client is unaware that mycompany.com is not serving the content; however, the appliance access logs indicate the actual server that provides the content.
W	
WCCP	Web Cache Communication Protocol. Allows you to establish redirection of the traffic that flows through routers.

Web FTP Web FTP is used when a client connects in explicit mode using HTTP and accesses an `ftp://` URL. The SG appliance translates the HTTP request into an FTP request for the OCS (if the content is not already cached), and then translates the FTP response with the file contents into an HTTP response for the client.

Websense log type A Blue Coat proprietary log type that is compatible with the Websense reporter tool.

X

XML responder HTTP XML service that runs on an external server.

XML requestor XML realm.

Index

Numerics

- 3rd party
 - configuring 28
 - specifying a time period 33
 - specifying time period 33

A

- access logging, ICAP 75

B

- Blue Coat SG
 - ICAP service configuration 56
- Blue Coat Web Filter
 - configuring 14
 - specifying a time period 16
 - update time period 16

C

- content filtering
 - 3rd party
 - configuring 28
 - 3rd party, automatic download 33
 - Blue Coat Web Filter
 - configuring 14
 - example of category= 35
 - expired database, using 40
 - expired license, downloading a database with 40
 - IWF
 - automatic download 26
 - configuring 24
 - local database
 - configuring 20
 - policy with vendor categories 37
 - provider, selecting 19
 - SmartFilter
 - configuring 30
 - Websense on-box
 - configuring 31
- content scanning
- ICAP service 56
 - policy for 48

D

- data trickling, about 52
- document
 - conventions 7
- Dynamic Categorization
 - about 12

F

- FTP, content scanning 48

H

- headers
 - request modification 49
 - response modification 48
- HTTP, scanning HTTP objects 48
- HTTPS, content scanning 48

I

- ICAP
 - configuring Blue Coat SG for 56
 - data trickling 52
 - failover, about 55
 - feedback, configuring 61
 - health checks, managing 59
 - installing server 56
 - ISTags 51
 - patience pages, about 51
 - patience text, customizing 62
 - policy examples 67
 - replacing the server 75
 - request modification, about 49
 - response modification, about 48
 - sense settings 51
 - service, creating 56
- IWF
 - configuring 24
 - custom time frame update 26
 - scheduling download 26

L

- local database
 - configuring 20

P

patience pages, about 51
policy
 content scanning 48
 example, limit access to certain Web sites 38
 example, limit access to specified time of day 38
 vendor categories, using with 37

R

request modification, about 49
response modification, about 48

S

SmartFilter
 configuring 30

V

virus scanning
 advanced configurations 74
 managing 74
 replacing the ICAP server 75

W

Websense on-box
 configuring 31