

# Blue Coat® Systems SG™ Appliance

## *Blue Coat SGOS 5.2.x Upgrade Guide*

*Version SGOS 5.2.2*



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## Chapter 1: *Upgrading—Overview*

Blue Coat® strongly recommends that you read this document before attempting to upgrade to SGOS 5.x from previous SGOS operating systems.

Existing features and policies might not perform as with previous versions, and upgrading to this version might require some additional configuration tuning.

### SGOS 5.x Upgrades

Upgrades are permitted only from SGOS 4.2.3.x and higher. For information on the correct upgrade path, see [Table 2-1, “Upgrade Paths”](#) on page 7.

If you attempt to download the next major release and receive an error message saying that the download failed due to policy deprecations, your policy uses constructs that are no longer supported in the current version. You must correct any policy syntax problems before upgrading.

If the upgrade path is followed, most of the current settings on the SG appliance are maintained after the upgrade. New or transformed settings in SGOS 5.x are taken from the original settings wherever possible.

### About the Document Organization

This document is organized for easy reference and is divided into the following sections and chapters:

Table 1-1. Document Organization

Chapter Title	Description
Chapter 1 – <i>Upgrading Overview</i>	This chapter discusses SGOS 5.x upgrades, related Blue Coat documentation, and documentation organization and conventions.
Chapter 2 – <i>Upgrade Behavior, General</i>	This chapter discusses general upgrade issues, including the required upgrade path and licensing.
Chapter 3 – <i>Upgrade Behavior, Specifics</i>	This chapter identifies new behaviors in SGOS 5.x and discusses any upgrade/downgrade issues.

### Related Blue Coat Documentation

- ❑ *Blue Coat SG200 Installation Guide*
- ❑ *Blue Coat SG210 Installation Guide*
- ❑ *Blue Coat SG400 Series Installation Guide*
- ❑ *Blue Coat SG510 Installation Guide*
- ❑ *Blue Coat SG800 Installation Guide*
- ❑ *Blue Coat SG810 Installation Guide*
- ❑ *Blue Coat SG8000 Installation Guide*

- ❑ *Blue Coat SG8100 Installation Guide*
- ❑ The 11-volume *Blue Coat ProxySG Configuration and Management Guide Suite* includes the following documents:
  - *Volume 1: Getting Started*
  - *Volume 2: Proxies and Proxy Services*
  - *Volume 3: Web Communication Proxies*
  - *Volume 4: Securing the Blue Coat SG Appliance*
  - *Volume 5: Advanced Networking*
  - *Volume 6: VPM and Advanced Policy*
  - *Volume 7: Managing Content*
  - *Volume 9: Access Logging*
  - *Volume 9: Managing the Blue Coat SG Appliance*
  - *Volume 10: Content Policy Language Guide*
  - *Volume 11: Command Line Interface Reference*

## Document Conventions

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

Table 1-2. Typographic Conventions

Conventions	Definition
<i>Italics</i>	The first use of a new or Blue Coat-proprietary term.
Courier font	Command-line interface 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.
<b>Courier Boldface</b>	Text that must be entered as shown.
{ }	One of the parameters enclosed within the braces must be supplied.
[ ]	Encompasses one or more optional parameters.
	This pipe character delineates options in a mandatory or optional list. For example: configure {terminal   network url}

## Chapter 2: *Upgrade Behavior*

You should follow the upgrade path provided below; using the upgrade path maintains most of the current settings, the exceptions being those features that were substantially enhanced in SGOS 5.x.

The following table provides the upgrade paths for these earlier SGOS versions.

Table 2-1. Upgrade Paths

Current OS (Range)	Direct Upgrade to Latest Version?	Next OS version required
SGOS 2.1.x, where $x \geq 07$	No	SGOS 3.2.6
SGOS 3.1.x	No	SGOS 3.2.6
SGOS 3.2.x, where $x \leq 3$	No	SGOS 3.2.6
SGOS 3.2.x, where $x \geq 4$	No	SGOS 4.2.1.6
SGOS 4.1.x	No	SGOS 4.2.1.6
SGOS 4.2.1.x, where $x \leq 5$	No	SGOS 4.2.1.6
SGOS 4.2.1.x, where $x \geq 6$	No	SGOS 4.2.4
SGOS 4.2.2.x	No	SGOS 4.2.4
SGOS 4.2.3.x	Yes	SGOS 5.2.2
SGOS 4.2.4.x	Yes	SGOS 5.2.2
SGOS 4.2.5.x	Yes	SGOS 5.2.2
SGOS 5.1.x	Yes	SGOS 5.2.2
SGOS 5.2.x	Yes	SGOS 5.2.2

### CPL Notes

Deprecation warnings are issued for CPL syntax that is abandoned in the current release. Use of abandoned syntax causes CPL compiler errors, the policy fails to install, and the SG appliance uses the default policy of ALLOW or DENY for all traffic. Following the recommended upgrade process ensures that policy integrity and, therefore, network security are maintained.

## Migrating to SGOS 5.2

SGOS 5.2.x supports direct upgrade from SGOS 4.2.3.x or 5.1.4.x. SGOS 5.2 is supported on the current SG210, SG510, SG810, and SG8100 hardware platforms as well as older SG200, SG400, SG800 and SG8000 platforms. Because SGOS 5.2 contains significant new functionality, upgrading can impact CPU utilization. If the peak CPU utilization on your system exceeds 65 percent on SG810/SG800 and lower models, or 70 percent on SG8100/SG8000 models running SGOS 4.2, contact your Blue Coat representative before upgrading to SGOS 5.2.

## Restoring to Previous Versions

You can restore previous versions if you upgraded from SGOS 4.2.3.x or higher. In this case, a copy of the settings is saved prior to any transformations by SGOS 5.2.x, allows the original settings to be available if the SG appliance is downgraded to SGOS 4.2.3.x. (This is only possible with systems that were upgraded from 4.2.3.x. New systems running SGOS 5.2.x can only be downgraded to 4.2.5.x.)

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**Note:** Always archive the current configuration offbox before upgrading or downgrading. To archive a configuration, go to **Configuration > General > Archive**. For information about archiving, refer to *Volume 2: Proxies and Proxy Services*.

---

Keep in mind that changes made after upgrade are not preserved if you subsequently downgrade. After an upgrade and a downgrade, the state is exactly what it was before the upgrade.

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**Note:** Should the latest release not boot successfully, the SG appliance might attempt to an earlier image. This can lead to a downgrade without warning.

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## Upgrading to SGOS 5.2.x

The upgrade process happens only one time. If you must redo the upgrade process on a system where the system has already been upgraded to SGOS 5.x, you can use the CLI `restore-sgos4-config` command.

The `restore-sgos4-config` command checks whether the system has saved SGOS 4.x settings on the SG appliance; if not, a warning message displays and the appliance exits the operation.

If saved SGOS 4.x settings exist, the SG appliance warns that all current SGOS 5.x settings will be lost and that a restart will be initiated. The restart triggers the upgrade process, which copies the SGOS 4.x settings and transforms them to the SGOS 5.2 settings.

The old `restore-sgos3-config`, `restore-sgos2-config`, and `restore-cacheos4-config` commands are not available. To restore an earlier SGOS 3, SGOS 2, or CacheOS 4 configuration, you must downgrade to the SGOS 4, SGOS 3 or SGOS 2 dot release, run the desired restore command, upgrade to SGOS 5.2 again, and run the `restore-sgos4-config` command to force the upgrade process to be executed again.



## Downgrading from SGOS 5.2.x

The ability to downgrade to earlier versions depends on the version you originally upgraded from:

- ❑ If you upgraded from SGOS 5.1.x or SGOS 4.2.3.x, you can downgrade to those versions.
- ❑ If you are starting with a new SGOS 5.2.x Proxy Edition installation, you can only downgrade to 4.2.5.x or 5.1.x. You cannot downgrade from a MACH5 Edition license.

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**Note:** You can easily upgrade to SGOS 5.2.x Proxy Edition license from a MACH5 license. At that point, you can downgrade to SGOS 5.1.x or SGOS 4.2.5.x.

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Downgrade default behavior also depends on the version that you are downgrading:

- ❑ On downgrade from a new SGOS 5.2.x Proxy Edition system to SGOS 4.2.5.x, all system configuration is lost, including the IP address.
- ❑ On a downgrade from SGOS 5.2.x to SGOS 5.1.x, the current SGOS 5.2.x settings are retained; on a downgrade from SGOS 5.2.x to 4.2.x, the previously saved SGOS 4.x configuration is retained.

## Upgrading or Downgrading Between SGOS 5.x Versions

When upgrading or downgrading between versions of SGOS 5.x, copies of version-specific configurations are not retained. Instead, all configurations created in an upgrade are retained if the configuration is relevant to the downgrade version.

Care should be taken when using policy features introduced in a minor release. These cause compilation errors if you downgrade to a previous version of the same major release in which those features were unsupported.

To prevent accidental downgrades, remove unused system images using the `installed_systems delete number`, from the `(config installed-systems)` prompt. You cannot remove unused system images through the Management Console.

## Licensing

You can upgrade to SGOS 5.x from SGOS 4.2.3.x or higher.

### *Upgrading from SGOS 4.2.3.x*

If you upgraded from SGOS 4.2.3.x or higher with a valid Support entitlement, you should already have an SGOS 5 license; no further action is required. If you do not have an SGOS 5 license, contact Support Services at <http://www.bluecoat.com/support/contact.html>.

### *Licensable Components*

There are three types of licensable components:

- ❑ Required—The SGOS base
- ❑ Included—Additional features provided by Blue Coat
- ❑ Optional— If applicable, any additional purchased features

When the license key file is created, it consists of all three components. The SGOS 5 Proxy Edition is a required component of the license key file. The following table lists the SG appliance licensable components, categorized by type.

Table 2-2. Licensable Components

Type	Component	Description
Required	SGOS 5 Proxy Edition	The SG operating system, plus base features: HTTP, FTP, TCP-Tunnel, SOCKS, and DNS proxy.
Included	3rd Party Onbox Content Filtering	Allows use with third-party vendor databases: Intersafe, Optenet, Proventia, SmartFilter, SurfControl, Websense, and Webwasher.
Included	Websense Offbox Content Filtering	For Websense off-box support only.
Included	ICAP Services	External virus and content scanning with ICAP servers.
Included	Bandwidth Management	Allows you to classify, control, and, if required, limit the amount of bandwidth used by different classes of network traffic flowing into or out of the SG.
Included	Windows Media Streaming	MMS and RTSP proxy for Windows Media content; content caching and splitting. Full policy control over MMS and RTSP traffic for Windows Media content. When the maximum number of concurrent streams is reached, all subsequent streams are denied and the client receives a message.
Included	Real Media Streaming	RTSP proxy for Real Media content; content caching and splitting. Full policy control over RTSP traffic for Real Media content. When the maximum number of concurrent streams is reached, all subsequent streams are denied and the client receives a message.
Included	QuickTime Streaming	RTSP proxy for QuickTime content; no caching or splitting; content pass-through. Full policy control over RTSP traffic for QuickTime content.
Included	Netegrity SiteMinder	Allows realm initialization and user authentication to SiteMinder servers.
Included	Oracle COREid	Allows realm initialization and user authentication to COREid servers.
Included	Peer-to-Peer	Allows you to recognize and manage peer-to-peer P2P activity relating to P2P file sharing applications.
Included	HTTP Compression	Allows reduction to file sizes without losing any data.
Optional	SSL	SSL Proxy and HTTPS Reverse Proxy (SSL termination).
Optional	AOL Instant Messaging	AIM proxy with policy support for AOL Instant Messenger.

Table 2-2. Licensable Components (Continued)

Type	Component	Description
Optional	MSN Instant Messaging	MSN proxy with policy support for MSN Instant Messenger.
Optional	Yahoo Instant Messaging	Yahoo proxy with policy support for Yahoo Instant Messenger.
Optional	SG Client—Acceleration	<p>Entitles you to support a certain number of SG Clients in your enterprise; however, the license does not limit the number of ADN tunnels to which clients can have access. SG Client licenses are upgradeable so you can support a larger number of users.</p> <p><b>Note:</b> Only the appliance designated as the SG Client Manager requires a license. To use SG Clients in your enterprise, apply the license only to the Client Manager and not to any other appliances in the ADN network.</p>

## Hardware Supported

Blue Coat SGOS 5.2.x supports the following hardware:

- ❑ SG200
- ❑ SG210
- ❑ SG400
- ❑ SG510
- ❑ SG800
- ❑ SG810
- ❑ SG8000
- ❑ SG8100

## Related Documentation

- ❑ *Volume 1: Getting Started*
- ❑ *Volume 9: Managing the Blue Coat SG Appliance*
- ❑ *Volume 11: Command Line Reference*



## Chapter 3: *Feature-Specific Upgrade Behavior*

This chapter provides critical information about how specific features are affected by upgrading to or downgrading from SGOS 5.x and provides actions administrators must or are recommended to take as a result of upgrading. If a specific feature is not mentioned, it has no known upgrade or downgrade issues.

This chapter contains the following sections:

- ❑ “[Management Console > Licensing Page](#)” on page 14: The licensing procedure has been modified to make licensing and registration easier on a new system.
- ❑ “[Configuration > Network](#)” on page 14: In SGOS 5.1.x, bridging has been modified; bridging behavior is very different from the behavior in SGOS 4.2.x.

In SGOS 5.2, the hardware programmable bridge cards change behavior from SGOS 4.2.x. For more information, see “[Hardware Bridging](#)” on page 16.

- ❑ “[Configuration > ADN](#)” on page 16: In SGOS 5.1.x, you can upgrade your network to take advantage of appropriate WAN optimization acceleration techniques (bandwidth management, compression, protocol optimization, byte caching, and object caching) and security protections (host authentication and authorization, message integrity, and privacy) to all of an enterprise’s key applications.

In SGOS 5.2.x, you can use policy to control DSCP settings for ADN tunnel connections. (DSCP offers the ability to specify per-hop behavior for a packet.) For more information, see “[DSCP](#)” on page 22.

- ❑ “[Configuration > Services](#)” on page 22: In SGOS 5.1.x, a new infrastructure was implemented for services, as well as including bypass lists on this pane. In SGOS 5.2.x, a new tab has been added: **Restricted Intercept List**.
- ❑ “[Configuration > Services > Proxy Services](#)” on page 25: In SGOS 5.2.x, the behavior of cached HTTP objects has changed, as has the logging behavior for cache hits.
- ❑ “[Configuration > SG Client](#)” on page 25: In SGOS 5.1, a client was introduced that enables users to benefit from accelerated application delivery directly to their desktops.
- ❑ “[Configuration > SSL](#)” on page 26: The `ssl-verify-server` commands under HTTP (both CLI and Management Console) have been removed.
- ❑ “[Configuration > Proxy Settings](#)” on page 26: In SGOS 5.2.x, a new menu item, **General**, has been added that controls the Trust Destination IP option and the default behavior when the number of concurrent licensed-user connections on a platform exceeds the limitations. In addition, Windows Media RTSP proxy functionality is now supported.
- ❑ “[Configuration > Content Filtering](#)” on page 28: In SGOS 5.1.x, a new content filtering provider has been added.
- ❑ “[Configuration > Authentication](#)” on page 28: In SGOS 5.2.x, you can now allow a certain type and number of authentication errors, you can use guest authentication, and you can use default groups. You also can explicitly log out users in SGOS 5.2.x.

In addition, realm configuration options have been enhanced and reorganized, and RADIUS realms can specify the character set to encode the user's credentials with when communicating with the RADIUS server. Also, several new realms (Novell SSO and XML) have been added, COREid has important considerations, and BCAA installation has been clarified.

- ❑ “[Configuration > External Services](#)” on page 33: In SGOS 5.2.x, the ICAP Services have been reorganized. In addition to the ICAP Services and ICAP Patience Page tabs, an ICAP Feedback tab has been added to allow you finer control over object delivery when ICAP scanning is enabled.

Also, ICAP configuration limits the service/group names that can be used.

- ❑ “[Configuration > Forwarding and SOCKS Gateways](#)” on page 35: The forwarding and SOCKS modules have been reorganized to remove old functionality and to enhance existing functionality for forwarding and SOCKS gateways.
- ❑ “[Configuration > Health Checks](#)” on page 36: In SGOS 5.2.x, the Health Check module has been completely reorganized to allow enhanced functionality, and it is now more tightly integrated with External Services and Forwarding and SOCKS gateways.
- ❑ “[Configuration > Access Logging](#)” on page 38: In SGOS 5.2.x, a new field has been added to the default streaming log format: `s-session-id`.
- ❑ “[Configuration > Policy \(QoS\)](#)” on page 39: The SG appliance supports Quality of Service (QoS) detection.
- ❑ “[Configuration > Policy > VPM](#)” on page 39: General naming conventions have changed. In SGOS 5.2.2, the HTTPS Forward Proxy object has been renamed to **Enable HTTPS Interception**, and the **Enable HTTPS Interception on Exception** object has been added, as well as the **Disable SSL Interception** static object.
- ❑ “[Statistics](#)” on page 40: Statistics behavior has changed since SGOS 4.x.

## Management Console > Licensing Page

The licensing register-hardware command and the **License Warning** tab attempt to request the software license as well as the hardware license after successful hardware registration.

Similarly, the licensing request-key and corresponding **Maintenance > Licensing > Install > Request key** attempt to register the hardware before requesting the license key if the hardware has not already been registered.

## Configuration > Network

Both hardware and software bridging have changed for SGOS 5.x. For information on software bridging, continue with the next section; for information on hardware bridging, continue with “[Hardware Bridging](#)” on page 16.

### Software Bridging

Changes to bridging include:

- ❑ Bridges are not configured during initial configuration of the system.
- ❑ A bridge is now considered to be a set of assigned interfaces and does not have an IP address. All interface configuration is done using the `#(config) interface` command.

- ❑ Interfaces are no longer identified by ports.
- ❑ Interface configuration is no longer done in the bridge editing submenu.

## Upgrade Behavior

The bridge-related settings have been migrated from previous SGOS releases to SGOS 5.1.3 or later. The behavior changes include:

- ❑ IP address, subnet: These have been moved to the lowest numbered interface attached to the bridge.
- ❑ mtu-size: On upgrade, mtu-size from an SGOS 4.2.x bridge is reflected to all the interfaces that belong to the bridge on SGOS 5.1.3 or later.
- ❑ accept-inbound. On upgrade, accept inbound settings from an SGOS 4.2.x bridge are reflected to all the interfaces that belong to the bridge on SGOS 5.1.3 or later. In SGOS 5.x, it has been renamed `reject-inbound`.
- ❑ speed: Speed is upgraded for both software and hardware bridges. For hardware bridges, the speed from the first port of a hardware bridge on SGOS 4.2.x is copied onto both interfaces belonging to the hardware bridge on SGOS 5.1.3 or later.. for a software bridge, speed is copied over from each port of a software bridge on SGOS 4.2.x to the corresponding interface of the software bridge on SGOS 5.1.3 or later.
- ❑ half-duplex/full-duplex: Duplex (half-duplex/full-duplex) is upgraded for both software and hardware bridges. For hardware bridges, the duplex from the first port of a hardware bridge on SGOS 4.2.x is copied onto both interfaces belonging to the hardware bridge on SGOS 5.1.3. For a software bridge, duplex is copied over from each port of a software bridge on SGOS 4.2.x to the corresponding interface of the software bridge on SGOS 5.1.3 or later.
- ❑ link-autosense: Link-autosense is upgraded for both software and hardware bridges. For hardware bridges, the link-autosense, if set on the first port of a hardware bridge on SGOS 4.2.x, is reflected onto both interfaces belonging to the hardware bridge on SGOS 5.1.3 or later.. For software bridges, link-autosense, if set for a particular port of a software bridge on SGOS 4.2.x, is reflected to the corresponding interface of the software bridge on SGOS 5.1.3 or later.
- ❑ static-fwtable-entry: Static forwarding entries are migrated from each of the individual ports on SGOS 4.2.x to the corresponding interfaces on SGOS 5.1.3.
- ❑ instructions (PAC Files): For hardware bridges, instructions from an SGOS 4.2.x bridge are automatically upgraded onto the first interface of the hardware bridge in SGOS 5.1.3. For software bridges, instructions from an SGOS 4.2.x bridge are upgraded onto an interface with an IP address that belongs to that bridge in SGOS 5.1.3.

If a software bridge was created in SGOS 4.2, that software bridge remains after an upgrade; the interfaces are attached to this software bridge on a best-effort basis. For example, if the bridge configuration is:

```
bridge "bg0"
```

- ❑ interface 0:0
- ❑ interface 3:0

0:0 is not part of a hardware bridge, while 3:0 is part of a hardware bridge

In this case, 3:0 is reassigned to the hardware bridge, and bridge "bg0" is left with one interface. If both interfaces are part of a hardware bridge, software bridge bg0 remains with no interface assigned to it.

## Downgrade Behavior

- ❑ For downgrades to SGOS 4.x, previously existing SGOS 4.x settings are preserved; if the system was a new SGOS 5.x installation before the downgrade, the defaults are used.
- ❑ For downgrades to SGOS 5.1.x, SGOS 5.2 settings are preserved, except for the programmable bridge functionality described in “[Hardware Bridging](#)” below.

## Related Documentation

- ❑ *Volume 1: Getting Started*

## Hardware Bridging

Blue Coat offers two types of programmable bridge cards, some sold as hardware bridges others as regular Network Interface Cards (NICs).

## Upgrade Behavior

For SGOS 4.2.3 or higher and SGOS 5.x upgrades, software bridges can be lost if they were created on a programmable card prior to upgrade.

Cards that were sold as bridges remain hardware bridges on upgrade and are configured to fail open. Cards that were sold as NICs might have had software bridges configured; if so, that configuration is lost on an upgrade.

You can recreate software bridges by either setting one of the pre-configured bridges to fail open or fail closed or by creating a software bridge and attaching the interfaces. Note that you must disable the automatically created hardware bridge before creating the software bridge.

## Downgrade Behavior

Downgrade behavior depends upon the type of programmable card you originally purchased. Regardless of configuration, the card returns to its original sold-as configuration (either a bridge or a NIC).

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**Note:** If you are using SGOS 4.2 .x and upgrade to SGOS 5.2.x and later decide to downgrade, Blue Coat strongly recommends against downgrading to SGOS 5.1.x. SGOS 4.2.x has gateway features and enhancements; SGOS 5.1.x does not.

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## Related Documentation

- ❑ The option card instructions that shipped with your option card.

## Configuration > ADN

The Application Delivery Network (ADN) is aimed at enhancing the experience of users in WAN environments. Blue Coat offers two approaches to upgrading and securing your network; both approaches allow you to keep the network in operation during the upgrade.



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**Note:** If you are configuring a new ADN installation, you do not need to worry about keeping a network in operation and secure; no live traffic is going through the ADN nodes. You can choose either approach discussed below or you can create your own custom approach.

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- ❑ Breadth-first: This is the operation-centric approach, where each operation is done on each ADN node before the next operation is started. For more information, see [“Upgrading Using the Breadth-First Approach”](#) on page 18.
- ❑ Rolling: This is the device-centric configuration, where a set of operations is done to a specific device before you move to the next device. The rolling approach works best when there's a clear separation of roles; for example, you have dedicated managers, concentrators, and branches. You don't have ADN nodes that function as both managers and concentrators. The recommended upgrade order for the rolling approach is to upgrade the ADN managers first, then the concentrators, and the branches last. This method allows a staged deployment. For more information, see [“Upgrading Using the Rolling Approach”](#) on page 19.

Note that you must have SGOS 5.1.3.3 or higher if you want to keep the ADN network in operation during the upgrade.

## New System Defaults

On a new system or a newly upgraded system, default settings are for insecure mode operation. Security must be explicitly enabled. The backwards-compatible ADN manager runs on the existing plain ADN manager port. This manager can handle ADN nodes running SGOS 5.2.x, SGOS 5.1.4, and SGOS 5.1.3.

- ❑ Advertised, explicit, routes are used. Connect transparent is enabled, but the prefer transparent setting is disabled. Servers where explicit routes exist are routed through explicit tunnels.
- ❑ Security settings:
  - Authentication and authorization are disabled until a valid profile is selected.
  - ADN routing and tunnel connection requests are unauthenticated.
  - All ADN protocol messaging and compressed application data are transferred in plaintext.
  - Device-auth-profile: **None**.

The ADN device-auth-profile must be configured on the ADN managers before any outbound connections can be set to a secure mode on any ADN node.

The profile also must be configured on all concentrators for a specific branch before securing any outbound tunnel connections on the branch.

- Authorization: **Disabled**.

Authorization can be enabled only if verify-peer option is enabled in the selected ADN device-auth-profile.
- Manager-listening-mode: **Plain-Only**.

The Manager-listening-mode on the ADN managers can be set to **Secure-only** if all ADN nodes secure their routing connections.
- Tunnel-listening-mode: **Plain-Only**.

Tunnel-listening-mode on a concentrator can be set to **Secure-only** if all branches connect to the concentrator through secure connections.

- Secure-outbound: **None**.
- ❑ Manager settings:
  - Pending-peers: **Enabled**

## Upgrading Using the Breadth-First Approach

If you upgrade from SGOS 4.2.x, the settings are as described above. From an ADN perspective, SGOS 4.2.x upgrades are treated as a new installation.

The breadth-first approach requires that you do certain operations on each node before moving to the next node.

---

**Note:** When upgrading to SGOS 5.2.x, backward compatibility is guaranteed only for devices running SGOS 5.1.3.3 or higher. Blue Coat appliances running SGOS 5.1.x versions must be upgraded to SGOS 5.1.3.3 or higher. Downgrading to SGOS 5.1.2 might not be possible after new features are enabled.

---

The overview for configuration is as follows:

1. Upgrade all ADN nodes to the latest SGOS release, including the latest patch version.
2. On each ADN node, configure the device authentication profile.

Security parameters switch to authentication defaults after the device is configured with the device authentication profile:

- a. Device-auth-profile: Set to the desired profile.
- b. Authorization: **Enabled**
- c. Manager-listening-mode: **Both**.
- d. Tunnel-listening-mode: **Both**.
- e. Secure-outbound: **Secure-Proxies**.

---

**Note:** If you are upgrading a network with live ADN traffic, reset secure-outbound to **None** to avoid potential ADN service outages. Otherwise, continue with the procedures below.

---

For more information, refer to “Device Authentication” and “Configuring an Application Delivery Network” in *Volume 5: Advanced Networking*.

3. Pre-configure the approved-peers list on each ADN manager.

If a backup manager exists, the backup manager should be added to the approved-peers list on the ADN manager; in that case, the ADN manager should be added to the approved-peers list on the backup manager.

4. Enable outbound security on each ADN node:
  - a. Secure-outbound: This setting can be configured to **Routing-only**, **Secure-proxies**, or **All**.

When routing connection security is enabled, each node reconnects to the ADN managers using the secure protocol.

- If the secure-outbound option is set to **Secure-proxies**, all future outbound secure-proxy connections are secured.
- If Secure-outbound is set to **All**, all future outbound connections are secured. Existing non-secure-proxy connections are upgraded to secure mode automatically. This is the most secure mode, allowing all ADN plain listeners to be disabled.

Configure secure-outbound to at least **Routing-only**. If the routing managers are also branch nodes, configure secure-outbound to **Secure-proxies** or **All**.

5. Tighten up security by shutting down any unneeded plain (unsecured) listeners on each node:

- a. Manager-listening-mode: Configure this setting to **Secure-only** on each ADN manager.

This setting can be selected only if the secure-outbound option is anything other than **None** on the ADN nodes. Note that you cannot select this option if you have SG Clients on the network.

- b. Tunnel-listening-mode: configure tunnel listening mode to **Secure-only** on each node.

Tunnel listening mode can be set to **Secure-only** on each node if no other ADN branches or SG Clients attempt to connect to this concentrator through plain (unsecured) tunnel connections.

For more information, refer to “Configuring an Application Delivery Network” in *Volume 6: VPM and Advanced Policy Tasks*.

## Upgrading Using the Rolling Approach

If you upgrade from SGOS 4.2.x, the settings are as described in the previous section. From an ADN perspective, SGOS 4.2.x upgrades are treated as a new installation.

The rolling approach requires that you complete all pertinent operations on each node before configuring the next node.

---

**Note:** When upgrading to SGOS 5.2.x, backward compatibility is guaranteed only for devices running SGOS 5.1.3.3 or higher. Blue Coat appliances running SGOS 5.1.x versions must be upgraded to SGOS 5.1.3.3 or higher. Rolling back to SGOS 5.1.2 might not be possible after new features are enabled.

---

## ADN Manager Upgrade

Complete each step below for the ADN manager and backup ADN manager:

1. Upgrade the appliances to the latest release of SGOS, including the most recent patch version.
2. Configure the device authentication profile.

Security parameters switch to authentication defaults after the device is configured with the device authentication profile:

- Device-auth-profile: Set to the desired profile.
- Authorization: **Enabled**.
- Manager-listening-mode: **Both**.

- Tunnel-listening-mode: **Both**.
- Secure-outbound: **Secure-Proxies**.

---

**Note:** If you are upgrading a network with live ADN traffic, reset secure-outbound to **None** to avoid potential ADN service outages.

---

For more information, refer to “Device Authentication” and “Configuring an Application Delivery Network” in *Volume 5: Advanced Networking*.

3. Configure the Manager-listening-mode to **Secure-only**.

---

**Note:** Do not do this step until all nodes have been upgraded and the secure-outbound option has been set to secure routing connections. If you attempt to do this step before configuring all other nodes, the nodes fail to connect to the secure manager port.

---

This setting can be selected only if the secure-outbound option is anything other than None on the ADN nodes. Note that you cannot select this option if you have SG Clients on the network.

4. Configure the approved-peers list, if authorization is enabled, to avoid potential temporary ADN service outage on a node.

For more information, refer to “Configuring an Application Delivery Network” in *Volume 6: VPM and Advanced Policy Tasks*.

## ADN Node Upgrade

Avoid making changes to ADN configuration on any ADN nodes until both managers have been upgraded and configured.

---

**Note:** The recommended approach to upgrading the ADN nodes is to configure all concentrators first, followed by the branch appliances.

---

The overview for upgrading one ADN node is as follows:

1. Upgrade the appliance to the latest version of SGOS, including all patch releases.
2. Bring up the ADN node and complete basic ADN configuration. For more information, refer to *Volume 5: Advanced Networking*.
3. Configure the device authentication profile.

Security parameters switch to authentication defaults after the device is configured with the device authentication profile:

- Device-auth-profile: Set to the desired profile.
- Authorization: **Enabled**.
- Manager-listening-mode: **Both**.
- Tunnel-listening-mode: **Both**.
- Secure-outbound: **Secure-Proxies**.

---

**Note:** If you are upgrading a network with live ADN traffic, reset secure-outbound to **None** to avoid potential ADN service outages.

---

For more information, refer to *Volume 5: Advanced Networking*.

## Enabling the Secure-Outbound Security Option

This setting can be configured to **Routing-only**, **Secure-proxies**, or **All**.

- ❑ When routing connection security is enabled, each node reconnects to the ADN managers using the secure protocol.
- ❑ If the secure-outbound option is set to **Secure-proxies**, all future outbound secure-proxy connections are secured.
- ❑ If Secure-outbound is set to **All**, all future outbound connections are secured. Existing non-secure-proxy connections are upgraded to secure mode automatically. This is the most secure mode, allowing all ADN plain listeners to be disabled.

## Setting Tunnel Listening Mode to Secure-Only

The tunnel listening mode can be set to **secure-only** if no other ADN branches or SG Clients attempt to connect to this concentrator through plain (unsecured) tunnel connections.

For more information, refer to “Configuring an Application Delivery Network” in *Volume 5: Advanced Networking*.

## Downgrading an ADN Network

To downgrade your network, reverse the steps you did to upgrade. Note that any attempt to enable tunnel security on a down-versioned branch fails and the connection is closed.

## Policy

- ❑ To support Application Delivery Networks (ADN):
 

```
adn.server.optimize (yes|no|byte_cache|compress)
adn.server.optimize.optimization-setting (yes|no)
adn.server.optimize[optimization-settings] (yes|no)
adn.server.optimize.inbound (yes|no|byte_cache|compress)
adn.server.optimize.inbound.optimization-setting (yes|no)
adn.server.optimize.inbound[optimization-settings] (yes|no)
adn.server.optimize.outbound (yes|no|byte_cache|compress)
adn.server.optimize.outbound.optimization-setting (yes|no)
adn.server.optimize.outbound[optimization-settings] (yes|no)
adn.connection.dscp (dscp_value)
```

The following CPL syntax is being deprecated in favor of the ADN tunnel properties:

```
socks.allow_compression (yes|no)
socks_gateway.request_compression (yes|no|default)
```

You can use the deprecated syntax, but you will receive a warning.

---

**Note:** If you use SOCKS compression, convert the configuration from SOCKS to ADN. At this point the improved compression and much more flexible ADN policy becomes available.

---

## Related Documentation

- ❑ *Volume 5: Advanced Networking*

## DSCP

On a new or upgraded system, DSCP behavior is not changed (per-hop behavior for an ADN packet cannot be set separately). Any previous settings are maintained.

On an ADN network, behavior does not change until both the branch and data center nodes are upgraded; the `adn.connection.dscp` property then takes effect and controls the dscp value sent and received in the ADN tunnel. When both the branch and data center nodes are upgraded, the `server.connection.dscp` setting (which is set on the branch) is enforced on the data center node.

The values for `adn.connection.dscp` and `server.connection.dscp` are configurable.

## Downgrade Behavior

The `adn.connection.dscp` property is ignored.

## Related Documentation

- ❑ *Volume 6: VPM and Advanced Policy Tasks*
- ❑ *Volume 10: Blue Coat SG Appliance Content Policy Language Guide*

## Configuration > Services

The **Configuration > Services** module has been reworked for increased functionality, and proxy settings have moved from the **Services** tab to the **Proxy Settings** tab. New or changed features on the **Services** tab SGOS 5.x are:

- ❑ “[Services Framework](#)” on page 22
- ❑ “[Bypass Lists](#)” on page 24
- ❑ “[Restricted Intercept](#)” on page 24

## Services Framework

The services framework (the infrastructure used to manage proxy services) has been revamped to, among other things, support multiple listeners and ports for each service.

New features in services include:

- ❑ **Multiple Listeners Per Service:** A proxy service is comprised of one or more listeners. Each listener can be configured to intercept a particular destination IP subnet and port range. This provides considerable power in intercepting specific application data streams and protocols on the network.
- ❑ **Port Ranges:** A listener can now contain a port range. Since a service can have multiple listeners, many port ranges can be used for a particular service.

- ❑ Subnet Ranges: A listener can match:
  - All traffic
  - Only traffic that is not destined to the SG appliance (Transparent)
  - Traffic specifically destined to the SG appliance (Explicit)
  - Traffic destined to a particular IP address or subnet
- ❑ Default Service: The default service matches all TCP traffic not otherwise matched by other service listeners. This provides the option to intercept all TCP traffic on the network so it can be accelerated and controlled by enforcing company policy on the traffic.
- ❑ Service Names in Policy: Each proxy service now requires a name. This name can contain spaces and can be used as a token in policy. This provides an easy mechanism to identify particular traffic flows in policy.
- ❑ Static Bypass: The static bypass is now configured under the Proxy Services and bypasses both TCP and UDP traffic.
- ❑ Separation of Console and Proxy Services: The console and proxy services are now configured using different commands.
  - To configure a console service from the CLI, use the `console-services` command.
  - To configure a proxy service from the CLI, use the `proxy-services` command.The services have separate Management Console pages (**Configuration > Services > Proxy Services**, **Configuration > Services > Console Services**).

## Upgrade Behavior

On upgrade, the old services configuration is upgraded to the new service framework. The new services name contains the old services type and generates a name with one of the following formats:

- ❑ If more than one service with identical properties exists, one service is created with multiple listeners when upgraded. For example, Yahoo IM has two service ports in SGOS 4.2, one on 5050 and one on 5101. Instead of creating two services, one service is created with two listeners.
- ❑ If multiple proxies of the same type exist, the upgrade uses the format `<proxy_name>-<number>`. For example, if you had two HTTP services, the new names are HTTP-1 and HTTP-2.
- ❑ On upgrade, only new SGOS 5.x services are added. Services that were purposefully deleted in SGOS 4.2.x are not re-added in the upgrade.

Most attributes directly translate to the new services framework. The exceptions are:

- ❑ The tunnel proxy attribute **detect protocol** is preserved on upgrade; the default behavior on a new system is disabled.
- ❑ The transparent and explicit attributes are removed.
- ❑ The **send-client-ip** attribute in SGOS 4.2 maps directly to **reflect-client-ip** in SGOS 5.x.

## Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*

## Bypass Lists

If you upgrade to SGOS 5.x from SGOS 4.x, entries from the central and local bypass lists are migrated to the static bypass list. Because the static bypass list does not support listing gateways, any central or local bypass entries that included a gateway are converted to static route entries in the static route table. The converted static route entries are appended after the existing static route entries. Duplicate static route entries are silently ignored.

All traffic leaving the SG appliance is affected by the static route entries created from the SGOS 4.x bypass lists, not just traffic that matches that particular bypass list entry.

Several parameters of bypass lists are renamed in SGOS 5.x:

- ❑ `server_bypass_threshold` is now `server-threshold`. This contains the maximum number of client entries for a particular server before all client entries are collapsed into a wildcard entry that bypasses all clients going to that particular server. The default value remains at 16; the range is 1 to 256.
- ❑ `max_dynamic_bypass_entry` is now `max-entries`. This defaults to 10000; the valid range is 100 to 50000.
- ❑ `dynamic_timeout` is now `timeout`. This defaults to 60 minutes and has a range between 1 and 86400 minutes.

## Downgrade Behavior

SGOS 5.x settings are not copied back to SGOS 4.x on a downgrade. Previously existing SGOS 4.x settings will be used, or default settings are used if no previous SGOS 4.x configuration exists.

CLI commands that are no longer used in SGOS 5.x include:

```
#show bypass-list <cr>
#(config) bypass-list central-path <url> <cr>
#(config) bypass-list local-path <url> <cr>
#(config) bypass-list no central-path <cr>
#(config) bypass-list no local-path <cr>
#(config) bypass-list no notify <cr>
#(config) bypass-list no subscribe <cr>
#(config) bypass-list notify <cr>
#(config) bypass-list poll-now <cr>
#(config) bypass-list subscribe <cr>
#(config) inline bypass-list central <eof marker> <cr>
#(config) inline bypass-list local <eof marker> <cr>
#(config) load bypass-list central <cr>
#(config) load bypass-list local <cr>
```

## Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*, Chapter 3

## Restricted Intercept

With SGOS 5.2.x, a new tab has been added to the **Configuration > Services** menu.

Restricted Intercept allows you to create a list of IP addresses that are intercepted, while allowing all other IP addresses to be bypassed. The Restricted Intercept List is useful in a rollout, prior to full production, where you only want to intercept a subset of the clients. After you are in full production mode, you can disable the Restricted Intercept List.

The Restricted Intercept List is also useful when troubleshooting an issue, because you can reduce the set of systems that are intercepted.



## Downgrade Behavior

This feature is new in SGOS 5.2.x. On a downgrade, the restricted intercept list is not available.

## Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*

## Configuration > Services > Proxy Services

The behavior of cached objects and cache hits has changed for SGOS 5.2.1.

### Cached Objects

Objects (except replacement objects from the ICAP server) that are cached under prior SGOS releases (SGOS 3.2.x, SGOS 4.1.x, SGOS 4.2.x and SGOS 5.1.x) of SGOS remain usable on upgrade to SGOS 5.2.

## Downgrade Behavior

Objects cached under SGOS 5.2.x are not usable if the SG appliance system is downgraded to any prior SGOS version. In case of an unusable object, the object is fetched again from the Origin Content Server (OCS.)

## Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*

### Cache-Hit Behavior

The `virus_detected` policy condition now generates an event log for cache hits, cache misses, and non-cacheable objects when a virus is found. If this behavior is not needed in your environment, you can create an access-log facility to report the URL, client IP address, and the virus-detected fields. The `s-action` access-logging field identifies the type of action taken to process the request and can distinguish between cache hits and cache misses. Reporter can be used to generate various reports.

## Downgrade Behavior

If you downgrade to a version lower than SGOS 5.2.x, the `virus_detected` policy condition is available for cache-miss transactions only.

## Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*
- ❑ *Volume 6: VPM and Advanced Policy Tasks*
- ❑ *Volume 10: Blue Coat SG Appliance Content Policy Language Guide*

## Configuration > SG Client

In SGOS 5.1.x, the SG Client was introduced. The SG Client enables users to benefit from accelerated application delivery directly to their desktops. This allows mobile users or users in small branch offices—where it might not be cost-justifiable to deploy an acceleration gateway—to have improved networked application access.

## Upgrade Behavior

To use the SG Client, one SG appliance must be configured as the Client Manager. Upgrading the Client Manager to SGOS 5.2 does not upgrade installed clients. Upgrading the ADN manager or the ADN data center concentrators has no effect on clients as long as the client-related settings are not changed.

When upgrading from SGOS 4.x to SGOS 5.2, you must install the client license and configure the ADN Manager and Client Manager as discussed in the chapter on the SG Client in *Volume 5: Advanced Networking*.

## Related Documentation

- ❑ *Volume 5: Advanced Networking*
- ❑ *Blue Coat SG Client Release Notes*

## Configuration > SSL

Several changes have been made to the SSL module for SGOS 5.2.x.

### SSL-Verify Server

In SGOS 5.2.x, server certificates are verified by default. The `ssl-verify-server` attribute under HTTP and the corresponding CLI and Management Console commands have been removed.

If you upgrade from SGOS 4.2.3 or later and have this flag set to no, policy is generated to restore pre-upgrade server certificate verification behavior. If the `ssl-verify server` attribute was set to yes in SGOS 4.2.3, no policy is generated. Generated policy is visible in the VPM as a new **Server Certificate Validation** object and negated version of **Request Forwarded** object.

### SSL Detection

In SGOS 5.2.x, options to set the SSL protocol detection for HTTP CONNECT, SOCKS, and TCP Tunnels are no longer available.

If these attributes were set to no in SGOS 4.2.x, policy is generated to maintain the pre-upgrade SSL detection behavior. If those attributes were set to yes in SGOS 4.2.x, no policy is generated.

Generated policy is visible in the VPM as a new **Disable SSL detection** object. Note that this VPM object is meant to accommodate upgrade scenarios only.

The preferred way to control SSL detection and protocol detection in general is by using the per-service attribute for protocol detection under **Configuration > Services > Proxy Services**.

## Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*

## Configuration > Proxy Settings

The CIFS proxy (discussed below) is new in SGOS 5.x.

Other new functionality includes:

- ❑ [“Trusted Destination IP”](#) on page 27

- ❑ [“User License Limits”](#) on page 27

## CIFS

The CIFS proxy on the SG appliance enables the SG appliance to improve performance, reduce bandwidth, and apply basic policy checks to clients using the CIFS protocol. This solution is designed for branch office deployments because network administrators can consolidate their Windows file servers (at the core office) instead of spreading them across the network.

### Upgrade Behavior

Systems that are upgraded from versions of SGOS that do not have a CIFS proxy behave the same as new systems in that they receive a default set of CIFS services and settings. Existing services listening on the default CIFS TCP ports are not overwritten.

### Downgrade Behavior

Downgrading to an SGOS 4.x has no effect on the box, except that the CIFS proxy is not available. The next time the upgrade is done, the settings from the previous upgrade still exist.

### Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*

## Trusted Destination IP

If, in your environment, a client can provide a destination IP address that the SG appliance cannot determine or if the SG appliance determines an incorrect IP address, you can tell the SG appliance to trust the client-provided IP address and not do a DNS lookup. This can improve performance (but potentially cause a security concern).

### Downgrade Behavior

This feature is new in SGOS 5.2.x. On a downgrade, the trusted destination IP address option is not available.

### Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*

## User License Limits

With SGOS 5.2.x, the number of users is enforced through model licensing. If you have more connections than your license permits, you can determine the overflow behavior. Connections beyond the limits can be bypassed, queued (waiting for a connection to drop off), or the licensed-user limit can be ignored. The default value is **none**.

### Downgrade Behavior

This feature is new in SGOS 5.2.x. On a downgrade, the licensed-user limit overflow option is not available.

### Related Documentation

- ❑ *Volume 2: Proxies and Proxy Services*

## Configuration > Content Filtering

One new content filtering vendor has been added for SGOS 5.x: The Internet Watch Foundation (IWF). This new vendor causes no upgrade issues. On a downgrade, IWF is not supported.

### Related Documentation

- ❑ [Volume 7: Managing Content, Chapter 2](#)

## Configuration > Authentication

A number of authentication enhancements were added in SGOS 5.2.1. As well, the following pre-existing upgrade considerations exist:

- ❑ [“User Management”](#) on page 28
- ❑ [“Permitted Errors, Guest Authentication, and Default Groups”](#) on page 29
- ❑ [“Configuration Options”](#) on page 29
- ❑ [“New Realms”](#) on page 30
- ❑ [“Radius Realms”](#) on page 31
- ❑ [“Upgrading the BCAA Authentication Service”](#) on page 31

## User Management

With SGOS 5.2, management of users who authenticate to the SG appliance is enhanced. Previously, users were authenticated without a concept of logging in or logging out of the SG appliance.

A user is considered logged in when first authenticated to the SG appliance, allowing different ways of managing users and controlling access to resources. A login is the combination of a unique IP address with a unique username in a unique realm. For a specific realm, a user is only considered to be logged in once from a given workstation, even if using multiple user agents.

You can browse the users logged into the SG appliance. You can also filter the displayed users by username pattern, by IP address subnet, and by realm.

Prior to SGOS 5.2, a single cache credentials value determined how long credentials, surrogate credentials (authentication cookie or IP address), and authorization data were trusted. With SGOS 5.2.1 and higher, three refresh times are available.

Prior to SGOS 5.2, one-time passwords only could be used once; to mimic that behavior, set the credential refresh time for the realm to 1.

### Policy

- ❑ `user.login.log_out (yes)`
- ❑ `user.login.log_out_other (yes)`
- ❑ `client.address.login.log_out_other (yes)`
- ❑ `user.login.count`
- ❑ `client.address.login.count`
- ❑ `user.login.time`
- ❑ `user.login.address`

- ❑ `authenticate.authorization_refresh_time(x)`
- ❑ `authenticate.credential_refresh_time(x)`
- ❑ `authenticate.surrogate_refresh_time(x)`
- ❑ `authenticate.credentials.address(x.x.x.x)`

## Downgrade

If the new features are specified in policy, the policy fails to compile on a downgrade.

## *Permitted Errors, Guest Authentication, and Default Groups*

Through policy, you can configure several new features in authentication:

- ❑ Attempt user authentication while permitting specific authentication or authorization errors.
- ❑ Allow a user to log in as a guest user.
- ❑ Set up default groups with any realm, allowing you to assign users to groups and use those groups in reporting and subsequent authorization decisions.

## Policy

New policy gestures include:

- ❑ `authenticate.tolerate_error`
- ❑ `authorize.tolerate_error`
- ❑ `user.authentication_error`
- ❑ `user.authorization_error`
- ❑ `authenticate.guest`
- ❑ `authorize.add_group`
- ❑ `user.is_guest`

## Upgrade Behavior

The "authenticated" condition previously evaluated to true only if both authentication and authorization succeeded. It now indicates whether the user is authenticated. If the authentication realm supports split authentication and authorization or is a valid authorization realm, it is possible for authentication to succeed and authorization to fail.

## Downgrade Behavior

If the new features are specified in policy, the policy fails to compile on a downgrade because those features do not exist in earlier versions.

## *Configuration Options*

In SGOS 5.2.x, a number of realm configuration options have been enhanced and reorganized.

- ❑ **Cache Credentials** has been replaced by separate refresh times that better manage how credentials, surrogate credentials, and authorization data is managed.
  - Credential Refresh
  - Surrogate Refresh

- Authorization Refresh
- Inactivity Timeout

These settings are all initialized with the value from the original Cache Credentials setting.

- ❑ The global virtual URL has been replaced; each realm must set its virtual URL separately.
- ❑ The global setting to determine whether cookies used in authentication are persistent cookies or session cookies has been replaced. Each realm now manages this setting separately.

## CLI Changes

- ❑ In each realm, the CLI command **cache-duration** has been replaced with commands to set the refresh time for credentials, surrogates and authorization data.
- ❑ The majority of global **transparent-proxy-auth** commands (all except method) have been replaced with equivalent settings in each realm.

## Upgrade Behavior

- ❑ Each realm that does not have an existing virtual URL is set to the default virtual URL.
- ❑ Each realm's cookie behavior (persistent or session cookies) is inherited from the old global option.

## Downgrade Behavior

New settings are ignored and the **Cache Credentials** value is set to the **Surrogate Refresh** time.

## Related Documentation

- ❑ *Volume 4: Securing the Blue Coat SG Appliance*

## New Realms

Two new realms are supported in SGOS 5.2.x: XML and Novell Single Sign-On (SSO). (Both the XML and Novell SSO realms are supported in SGOS 4.2.4, but not in SGOS 5.1.x.)

- ❑ Novell SSO—This realm is an authentication mechanism that provides single sign-on authentication for users who authenticate against a Novell eDirectory server. The mechanism uses the Novell eDirectory Network Address attribute to map the user's IP address to an LDAP Fully Qualified Domain Name (FQDN).
- ❑ XML— This realm allows you to integrate SGOS with the authentication/ authorization protocol if you are using an authentication or authorization protocol that is not natively supported by Blue Coat. This realm requires that you create an XML realm responder to handle XML requests, which requires knowledge of the SOAP protocol. To this end, a SOAP appendix has been created in *Volume 4: Securing the Blue Coat SG Appliance*.

## Downgrade Behavior

The Novell SSO and the XML realms are supported in SGOS 4.2.4.x. Neither realm is available in SGOS 5.1.x. If you downgrade to a version that does not support the realm, the realm and its settings are not available.

## Related Documentation

- ❑ *Volume 4: Securing the Blue Coat SG Appliance*

## Radius Realms

RADIUS realms can specify the character set to encode the user's credentials with when communicating with the RADIUS server. This is a new configuration option in SGOS 5.2.2 and is not available in previous releases.

A character set is a Multipurpose Internet Mail Extension (MIME) charset name. Any of the standard charset names for encodings commonly supported by Web browsers can be used. The default is Unicode:UTF8.

## Downgrade Behavior

If you downgrade to a previous release then the credentials are sent as UTF8 encoded.

## COREid Authentication

When the Oracle COREid 6.5 WebGate server software is upgraded to Oracle COREid 7.0, the single sign-on feature might stop working even if the IPValidation value in the WebGate configuration file (WebGateStatic.lst) is later set to `false`. The workaround is to uninstall and reinstall the Oracle COREid 7.0 WebGate software, and set IPValidation to `false`. Then restart the COREid Access server and the IIS server.

## Upgrading the BCAA Authentication Service

SGOS 5.2.x uses version 120 of the BCAA authentication service, as does SGOS 4.2.3.x and higher. SGOS 5.1.x uses BCAA version 110; you should upgrade the BCAA version when upgrading the SG appliance, even if you are already using version 120, to pick up any bug fixes and new functionality.

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**Note:** BCAA version 120, along with SGOS 5.2.x, can be used to determine whether the user attempted to log in to a trusted domain. Prior versions do not have this functionality.

---

BCAA is distributed as a zip file or UNIX shell script, to be installed on a Microsoft® Windows® system or a Solaris™ system. The zip file to download the BCAA service is posted on the SGOS 5 software download page at [http://download.bluecoat.com/release/SGOS5\\_2/index.html](http://download.bluecoat.com/release/SGOS5_2/index.html).

## Using Multiple Versions of the BCAA Service

You can run multiple versions of the BCAA service. Depending on the versions of BCAA that you want to run, you might have to install different versions of the service. Each version of the BCAA service that you want to run must reside on your system.

---

**Note:** You cannot use an older version or a newer version than your proxy expects. For example, you must install BCAA version 100 for SGOS 4.2.1; BCAA version 110 for SGOS 4.2.2 or 5.1.x; or BCAA version 120 for SGOS 4.2.3.x or SGOS 5.2.1.

---

Table 3-1. Supported Versions of the BCAA Service

SGOS Version	BCAA Version Supported
SGOS 3.2.6	Upgrade to BCAA version 99 or higher
SGOS 4.1.x	Upgrade to BCAA version 99 or higher
SGOS 4.2	100 (Download from: <a href="http://download.bluecoat.com/release/SGOS4/index.html">http://download.bluecoat.com/release/SGOS4/index.html</a> )
SGOS 4.2.2	110 (Download from: <a href="http://download.bluecoat.com/release/SGOS4/index.html">http://download.bluecoat.com/release/SGOS4/index.html</a> )
SGOS 4.2.3	120 Download from <a href="http://download.bluecoat.com/release/SGOS4/index.html">http://download.bluecoat.com/release/SGOS4/index.html</a>
SGOS 4.2.4	120 Download from <a href="http://download.bluecoat.com/release/SGOS4/index.html">http://download.bluecoat.com/release/SGOS4/index.html</a>
SGOS 5.1.1.x	100 (Download from <a href="http://download.bluecoat.com/release/SGOS5/index.html">http://download.bluecoat.com/release/SGOS5/index.html</a> )
SGOS 5.1.2	100 (Download from: <a href="http://download.bluecoat.com/release/SGOS5/index.html">http://download.bluecoat.com/release/SGOS5/index.html</a> )
SGOS 5.1.3	110 (Download from <a href="http://download.bluecoat.com/release/SGOS5/index.html">http://download.bluecoat.com/release/SGOS5/index.html</a> )
SGOS 5.1.4	110 (Download from <a href="http://download.bluecoat.com/release/SGOS5/index.html">http://download.bluecoat.com/release/SGOS5/index.html</a> )
SGOS 5.2.1	120 (Download from <a href="http://download.bluecoat.com/release/SGOS5_2/index.html">http://download.bluecoat.com/release/SGOS5_2/index.html</a> )
SGOS 5.2.2	120 (Download from <a href="http://download.bluecoat.com/release/SGOS5_2/index.html">http://download.bluecoat.com/release/SGOS5_2/index.html</a> )

Install the lowest version of the BCAA service first and the highest version of BCAA last, allowing each version to uninstall the previous version. This leaves behind the `bcaa.ini` and `bcaa-nn.exe` files for each version.

## Notes

- ❑ Only one listening port is used, no matter how many versions you are running. The BCAA service hands off the connection to the appropriate BCAA version.
- ❑ Installation instructions for BCAA are located in *Volume 5: Advanced Networking*, accessible through WebPower account access.
- ❑ The BCAA service cannot be installed on Windows NT.



- ❑ The firewall on Windows systems must be disabled for the BCAA service to work. If the firewall is enabled, the SG appliance won't be able to connect to BCAA.

### Related Documentation

- ❑ *Volume 4: Securing the Blue Coat SG Appliance*

## Configuration > External Services

The major change to **Configuration > External Services** is the addition of the ICAP feedback page. Naming behavior has also changed for ICAP virus scanning.

### ICAP Feedback

A new tab, **ICAP Feedback**, allows you to select either patience pages or data trickling, which is new for SGOS 5.2.x. Data trickling allows some or most of the HTTP object data to continue to the client while the ICAP scan occurs. This is primarily designed for non-interactive (non-Web browser based) HTTP traffic. For interactive (browser-based) traffic, you can employ data trickling or patience pages.

### Upgrade Behavior

On upgrade from a pre-5.2 SGOS version:

- ❑ For a non-interactive client, feedback is set to **none**.
  - ❑ For an interactive client:
    - If no ICAP RESPMOD service is found in a pre-SGOS 5.2.x configuration, interactive feedback is set to **none**.
    - If an ICAP RESPMOD service is found in a pre-SGOS 5.2 configuration and all ICAP RESPMOD services were set to patience-page, interactive feedback is set to **patience-page**. The delay is set to the minimum of the delays configured on all ICAP services.
- To set patience-page feedback in the upgraded system, enable patience page for each ICAP service prior to the upgrade. Alternatively, use the CLI to do this after upgrading.
- ❑ VPM: Any existing ICAP Patience Page objects are converted into the Return ICAP Feedback object. The **Interactive** section within the Return ICAP Feedback object is derived from the older ICAP Patience Page object.
  - ❑ VPM: Existing older versions of the ICAP Request Service objects and ICAP Response Service objects with the option "**Use ICAP request/response service**" selected are upgraded to the newer version of ICAP Request/Response Service object with the same option selected.
  - ❑ VPM: Older version of the ICAP Request Service objects and ICAP Response Service objects with the option **Do not use any ICAP service** selected are upgraded to the newer version of the ICAP Request/Response Service object with the same option selected.

### Downgrade Behavior

- ❑ VPM: Any existing Return ICAP Feedback objects are converted into ICAP Patience Page objects and the **Interactive** section within the Return ICAP Feedback object is used to create the ICAP Patience Page object.

- ❑ VPM: Any existing newer version of the ICAP Request Service objects and ICAP Response Service objects with the option **Use ICAP request/response service** selected are downgraded to the older version of ICAP Request/Response Service object with the same option and the service selected is the same as the first item selected in the pre-downgrade object.
- ❑ VPM: Any existing newer version of the ICAP Request Service objects and ICAP Response Service objects with the option **Do not use any ICAP service** selected are downgraded to the older version of the ICAP Request/Response Service object with the same option selected.

## Deprecated CLI

The following command has been deprecated for ICAP.

```
SGOS# (config icap services service_name) patience-page seconds
```

## Deprecated Policy

The following policy has been deprecated for ICAP.

Table 3-2. Deprecated Policy

Deprecated Policy	Replacement Policy
patience_page(delay)	response.icap_feedback.interactive(patience_page, 10)
patience_page(no)	response.icap_feedback.interactive(no)
force_patience_page(yes)	response.icap_feedback.force_interactive(yes)
force_patience_page.user-agent (yes)	response.icap_feedback.force_interactive.user-agent (yes)
force_patience_page[user-agent, extension, content-type](yes)	response.icap_feedback.force_interactive[user-agent, extension, content-type](yes)
force_patience_page(user-agent, extension)	response.icap_feedback.force_interactive(user-agent, extension)

### VPM-Specific Deprecated Objects

- ❑ The ICAP Patience Page object generates `patience_page( )`

## Related Documentation

- ❑ *Volume 6: VPM and Advanced Policy Tasks*

## ICAP Scanning

In SGOS 5.2.x, you can no longer create ICAP services named **fail\_open** and **fail\_closed**. If you are upgrading, you can continue to use the names.

In CPL, you can continue to have ICAP services named **fail\_open** and **fail\_closed** as long as those names are either the only service specified or not the last service named if more than one service is specified in a failover sequence. To specify a service named **fail\_over** or **fail\_closed** as the last service in a sequence, you must follow the sequence with a failure behavior directive. For example:

```
response.icap_service(first_service, fail_open, fail_closed)
```

Here, **fail\_open** is interpreted as a service name (since it is not the last token) and **fail\_closed** is taken as a failure directive, since it is the last token.

## Downgrade Behavior

A policy syntax error is generated if policy contains an ICAP failover sequence of more than one service or group.

Before downgrading, change any ICAP failover sequence containing more than one service to a sequence of one service.

## Related Documentation

- ❑ *Volume 6: VPM and Advanced Policy Tasks*
- ❑ *Volume 7: Managing Content*
- ❑ *Volume 10: Blue Coat SG Appliance Content Policy Language Guide*

## Configuration > Forwarding and SOCKS Gateways

In SGOS 5.2, support for groups (including load balancing and host affinity) has been added to the SOCKS gateways. In addition, some changes were made to the forwarding group structure to match the new SOCKS gateway groups.

---

**Note:** The retention of deprecated CLI and installable list commands and command options ensures that older configurations continue to work after an upgrade. The upgrade introduces new capabilities without removing older ones.

The new load balancing and host affinity capabilities in the forwarding and SOCKS gateways are disabled by default after an upgrade. The **other** setting for host affinity will be **none** in all cases.

---

## Changes to Forwarding and SOCKS Gateways

- ❑ Empty groups are allowed, can be created, and are not automatically deleted.
- ❑ Hosts can become members of more than one group.
- ❑ Load balancing and host affinity commands have been changed.
- ❑ Many CLI commands have been deprecated in favor of commands that better reflect the new functionality.
- ❑ Directives have been changed to match the new CLI.

## Upgrade Behavior

On upgrade, the forwarding and SOCKS gateway configurations are updated to match the new forwarding/SOCKS behavior.

After an upgrade, SOCKS gateway group names may be used in the **socks\_gateway** policy. The introduction of new forwarding host or group names or new SOCKS gateway or group names into policy can cause problems when downgrading as the policy might not compile.

In SGOS 5.2, when you create a forwarding alias, a socks gateway, or a health check through the CLI or the Management Console, you can use any printable character in the name except for back quotes (`), colons (:), double quotes ("), and spaces. Note that non-ASCII characters are legal.

On an upgrade from SGOS 4.2.x, previously created alias names are transformed into legal alias names, using the following mappings:

- ❑ ` becomes '
- ❑ : becomes %
- ❑ " becomes =
- ❑ space becomes \_

For example, if you used a string such as `http://example.com` as a forwarding alias, the alias is transformed to `"http%//example.com"` after upgrading from 4.2 to 5.2.

If the SGOS 4.2.x VPM policy references a forwarding alias or socks gateway alias that contains one of the four illegal characters, you will see warning messages the next time you try to install VPM policy after the upgrade. To fix the problem, edit each forwarding and SOCKS gateway object to delete the old, invalid alias name and replace it with the transformed alias name.

If you created custom CPL code and this code contains a `<Forward>` layer that references forwarding or socks gateway aliases, edit the CPL code, replacing the old, invalid alias name with the transformed alias name.

## Downgrade Behavior

On downgrade, the system reverts to the configuration that existed prior to the SGOS 5.2 upgrade. Any changes to the configuration are lost on downgrade.

## Related Documentation

- ❑ *Volume 5: Advanced Networking*

## Configuration > Health Checks

Health checks are now automatically created and deleted for forwarding hosts and groups, SOCKS gateways and groups, ICAP servers and service groups, Websense off-box servers and service groups, and DRTR. You can create additional health checks for any target host or create composite health checks that merge the results of other health checks. All health checks are now individually configurable. Policy conditions allow the state of any health check to be used in policy.

Health checks are subject to forwarding and SOCKS gateway policy when appropriate. SSL certificate policy affects certain types of health checks.

## Changes

- ❑ Health checks for the ICAP and Websense off-box services are no longer optional, but are automatically created and deleted as the service is created and deleted. You cannot create health checks for these services.
- ❑ Health check names have changed, with each health check type having a different prefix.

- ❑ External services and external service group names are now limited to 64 characters each. If an old name exceeds 64 characters, the service or service group continues to function normally but no corresponding health check is created.
- ❑ Although health checks were used for DRTR in previous releases, they were hidden. The DNS resolution for DRTR is checked according to the site's time-to-live value.
- ❑ Health checks have vastly changed functionality so CLI commands in previous versions do not work, and there is no backward compatibility. See [“Deprecated CLI”](#) on page 38 for more information.

## Upgrade Behavior

After an upgrade, examine the new health checks and the configuration and ensure that the health checks are properly configured and succeeding. Check that the results of the upgrade are satisfactory. Note that any health check can be disabled if necessary.

- ❑ Forwarding hosts and SOCKS gateways have health checks created that are based on the previous global health check configuration settings. New health checks are created for any forwarding groups that previously existed.
- ❑ ICAP and Websense off-box services that had health checks before the upgrade have health checks created that are based on the previous settings for that health check.
- ❑ New health checks are created on upgrade for any ICAP or Websense off-box service groups.
- ❑ User-defined health checks from previous versions are converted to the new user-defined health checks on upgrade.

In SGOS 5.2, when you create a health check through the CLI or the Management Console, you can use any printable character in the name except for back quotes (`), colon (:), double quotes ("), and spaces. Note that non-ASCII characters are legal.

On an upgrade from SGOS 4.2.x, previously created alias names are transformed into legal alias names, using the following mappings:

- ❑ ` becomes '
- ❑ : becomes %
- ❑ " becomes =
- ❑ space becomes \_

For example, if you used a string such as `http://example.com` as a forwarding alias, the alias is transformed to `"http%//example.com"` after upgrading from 4.2.x to 5.2.

If the SGOS 4.2.x VPM policy references a forwarding alias or socks gateway alias that contains one of the four illegal characters, you will see warning messages the next time you try to install VPM policy after the upgrade. To fix the problem, edit each forwarding and SOCKS gateway object to delete the old, invalid alias name and replace it with the transformed alias name.

If you created custom CPL code and this code contains a `<Forward>` layer that references forwarding or socks gateway aliases, edit the CPL code, replacing the old, invalid alias name with the transformed alias name.

## Downgrade Behavior

- ❑ The system reverts to the configuration that existed prior to this upgrade. Any changes to the configuration are lost on downgrade.

- ❑ Policy that contains new health check types does not compile.

## Policy

New policy conditions include:

- ❑ `is_healthy.alias` = yes | no
- ❑ `health_check` = yes | no | *alias*

## Deprecated CLI

```
SGOS#(config health-check) forwarding
SGOS#(config health-check) socks-gateways
```

## New CLI

```
SGOS#(config health-check) copy source-alias target-alias
SGOS#(config health-check) create {composite alias_name | http
alias_name url | https alias_name url | icmp alias_name hostname | ssl
alias_name hostname [port] | tcp alias_name hostname [port]}
SGOS#(config health-check) default e-mail {healthy {enable | disable} |
report-all-ips {enable | disable} | sick {enable | disable}}
SGOS#(config health-check) default event-log {healthy {enable
| disable} | report-all-ips {enable | disable} | sick {enable |
disable}}
SGOS#(config health-check) default failure-trigger {none | count}
SGOS#(config health-check) default interval {healthy seconds | sick
seconds}
SGOS#(config health-check) default snmp {healthy {enable | disable} |
report-all-ips {enable | disable} | sick {enable | disable}}
SGOS#(config health-check) default threshold {healthy count /
response-time milliseconds | sick count}
SGOS#(config health-check) delete alias_name
SGOS#(config health-check) disable {healthy alias_name | sick
alias_name}
SGOS#(config health-check) edit composite_health_check
SGOS#(config health-check) edit health_check_type
SGOS#(config health-check) enable alias_name
SGOS#(config health-check) exit
SGOS#(config health-check) perform-health-check alias_name
SGOS#(config health-check) view {configuration | quick-statistics |
statistics}
```

## Configuration > Access Logging

In SGOS 5.2.2, a new field has been added to the default streaming log format: `s-session-id`. This field can be used to identify playspurts from the same client session and is supported for all streaming protocols:

- ❑ Windows Media over RTSP
- ❑ Real Media over RTSP
- ❑ QuickTime over RTSP
- ❑ MMS

- ❑ HTTP

## Upgrade Behavior

Upon upgrade to 5.2.2, the default streaming log format changes to the new log format. If you have modified the default streaming log format prior to upgrade, those changes will be preserved.

## Related Documentation

*Volume 9: Access Logging*

## Configuration > Policy (QoS)

Beginning with SGOS 5.1.3, the SG appliance supports Quality of Service (QoS) detection, which is becoming a more prevalent control point for network layer traffic. Previously, the QoS information was lost or not detected when the SG appliance terminated the client connection and issued a new connection to the server. QoS support allows you to create policy to examine the Type of Service (ToS) fields in the IP header to determine the QoS of the bits.

Policy matches are based on Differentiated Services Code Point (DSCP) values, which network devices use to identify traffic to be handled with higher or lower priority.

In SGOS 5.2.x, the following VPM objects and CPL gestures were added to support QoS:

```
server.connection.dscp=  
client.connection.dscp=  
server.connection.dscp( )  
client.connection.dscp( )  
adn.connection.dscp( )
```

The following objects have been added to VPM to support QoS:

- ❑ **Client Connection DSCP Trigger** (Source)
- ❑ **Server Connection DSCP Trigger** (Destination)
- ❑ **Set Client Connection DSCP** (Action)
- ❑ **Set Server Connection DSCP** (Action)
- ❑ **Set ADN Connection DSCP** (Action)

## Related Documentation

- ❑ ADN and DSCP: “[DSCP](#)” on page 22
- ❑ *Volume 6: VPM and Advanced Policy Tasks*

## Configuration > Policy > VPM

Note the following changes that took place with SGOS 4.2.x and higher.

### Object Naming

Objects that you can name can no longer start with “\_” (an underscore character). The underscore character prefix is now used for internally-generated names to prevent name collisions between objects that can be named by the user and internally generated names.

## Cipher and Cipher Strength

Prior to the SGOS 4.2 release, the objects Cipher and Cipher Strength objects didn't have a Name entry field and had only fixed internal names. The internal names were similar to \_\_Cipher1 for the Cipher object and \_\_CipherStrength1 for the Cipher Strength object.

Effective with SGOS 4.2, you can modify or change the names of these objects.

When preexisting Cipher and Cipher Strength objects are upgraded, these objects display the internal names with prefix "\_\_". The underscore in the prefix is not a problem as long as you do not edit the object, and the object compiles properly when installing. If you modify an object with a name that includes the prefix "\_\_", VPM will prompt you to remove this prefix.

## SSL Forward Proxy Object Renamed

In SGOS 5.2.2, the **Add SSL Forward Proxy** object is renamed to **Enable HTTPS Interception** to better reflect the object's function. In addition, the **HTTPS Interception on Exception** object is used to intercept SSL traffic if there is an exception, such as a certificate error or policy denial. This differs from the **HTTPS Intercept** object, which intercepts all HTTPS traffic.

### Related Documentation

- ❑ *Volume 6: VPM and Advanced Policy Tasks*

## New User Login Address Object

A new subnet mask field allows you to specify a subnet of addresses to match in addition to single IP addresses. This lets you match against all machines on a particular subnet, rather than specific individual machines.

### Upgrade/Downgrade Behavior

On an upgrade, existing User Login Address objects are treated as if no subnet mask was specified. User Login Address objects created with a subnet mask are not supported if the SG is downgraded to a previous release without this functionality.

### Related Documentation

- ❑ *Volume 6: VPM and Advanced Policy Tasks*

## Statistics

- ❑ Persistent bandwidth statistics are not preserved on upgrade from SGOS 4.x. These statistics are now computed differently.
- ❑ Persistent statistics are kept differently in SGOS 5.x and SGOS 4.x. Statistics are imported on first upgrade. After that, SGOS 5.x statistics show gaps when SGOS 4.x is running and vice versa.

### Related Documentation

- ❑ *Volume 10: Managing the Blue Coat SG Appliance*