

Blue Coat® Systems

ProxySG VA

# Initial Configuration Guide

For SGOS 5.5.2 or later  
Platform: ESX / ESXi Server



**Blue Coat®**  
CONTROL IS YOURS™

## Contact Information

### Americas:

**Blue Coat Systems Inc.**  
410 North Mary Ave  
Sunnyvale, CA 94085-4121

### Rest of the World:

**Blue Coat Systems International SARL**  
3a Route des Arsenaux  
1700 Fribourg, Switzerland

<http://www.bluecoat.com/support/contactsupport>

<http://www.bluecoat.com>

For concerns or feedback about the documentation:

[documentation@bluecoat.com](mailto:documentation@bluecoat.com)

Copyright© 1999-2010 Blue Coat Systems, Inc. All rights reserved worldwide. No part of this document may be reproduced by any means nor modified, decompiled, disassembled, published or distributed, in whole or in part, or translated to any electronic medium or other means without the written consent of Blue Coat Systems, Inc. All right, title and interest in and to the Software and documentation are and shall remain the exclusive property of Blue Coat Systems, Inc. and its licensors. ProxyAV™, CacheOS™, SGOS™, SG™, Spyware Interceptor™, Scope™, ProxyRA Connector™, ProxyRA Manager™, Remote Access™ and MACH5™ are trademarks of Blue Coat Systems, Inc. and CacheFlow®, Blue Coat®, Accelerating The Internet®, ProxySG®, WinProxy®, PacketShaper®, PacketShaper Xpress®, PolicyCenter®, PacketWise®, AccessNow®, Ositis®, Powering Internet Management®, The Ultimate Internet Sharing Solution®, Cerberian®, Permeo®, Permeo Technologies, Inc.®, and the Cerberian and Permeo logos are registered trademarks of Blue Coat Systems, Inc. All other trademarks contained in this document and in the Software are the property of their respective owners.

BLUE COAT SYSTEMS, INC. AND BLUE COAT SYSTEMS INTERNATIONAL SARL (COLLECTIVELY "BLUE COAT") DISCLAIM ALL WARRANTIES, CONDITIONS OR OTHER TERMS, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, ON SOFTWARE AND DOCUMENTATION FURNISHED HEREUNDER INCLUDING WITHOUT LIMITATION THE WARRANTIES OF DESIGN, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL BLUE COAT, ITS SUPPLIERS OR ITS LICENSORS BE LIABLE FOR ANY DAMAGES, WHETHER ARISING IN TORT, CONTRACT OR ANY OTHER LEGAL THEORY EVEN IF BLUE COAT SYSTEMS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### Americas:

**Blue Coat Systems, Inc.**  
420 N. Mary Ave.  
Sunnyvale, CA 94085

### Rest of the World:

**Blue Coat Systems International SARL**  
3a Route des Arsenaux  
1700 Fribourg, Switzerland

Document Number: 231-03049

Document Revision: SGOS 5.5.2, March 2010, Rev. B

# Table of Contents

---

---

## Chapter 1: Overview

## Chapter 2: Before You Begin

Confirm System Requirements for the ProxySG VA . . . . .	2-9
Host Server . . . . .	2-9
Support for RAID . . . . .	2-11
WCCP-Capable Router . . . . .	2-11
Support for VMware Products . . . . .	2-11
Support for SSL . . . . .	2-12
Verify Resource Availability . . . . .	2-12
Retrieve Appliance Serial Numbers . . . . .	2-13
Create a Virtual Switch . . . . .	2-14

## Chapter 3: Create the ProxySG Virtual Appliance

Download the Virtual Appliance Package . . . . .	3-17
Import a ProxySG VA . . . . .	3-19
Enable Performance Monitoring on the ProxySG VA . . . . .	3-20
Reserve Resources for the ProxySG VA . . . . .	3-21
Power on the ProxySG VA . . . . .	3-22

## Chapter 4: Configure the ProxySG VA

Perform Initial Configuration . . . . .	4-23
Launch Blue Coat Sky . . . . .	4-27
Register and License the ProxySG VA . . . . .	4-28
Supported Licenses . . . . .	4-28
License the ProxySG VA . . . . .	4-28
Download and Install the License Key File . . . . .	4-29
Configure WCCP . . . . .	4-31
Configure WCCP on the Router . . . . .	4-32
Configure WCCP on the ProxySG VA . . . . .	4-32
Verify your Configuration . . . . .	4-35
Verifying WCCP Statistics and Service Group Status . . . . .	4-35
Verifying Acceleration . . . . .	4-36
Power Off the ProxySG VA . . . . .	4-38
Next Steps . . . . .	4-39

**Appendix A: WCCP Reference**

About Service Group States. . . . . A-1  
Worksheet for Configuring WCCP (Blank) . . . . . A-2  
Worksheet for Configuring WCCP (Sample) . . . . . A-3

**Appendix B: Upgrading the ProxySG VA**

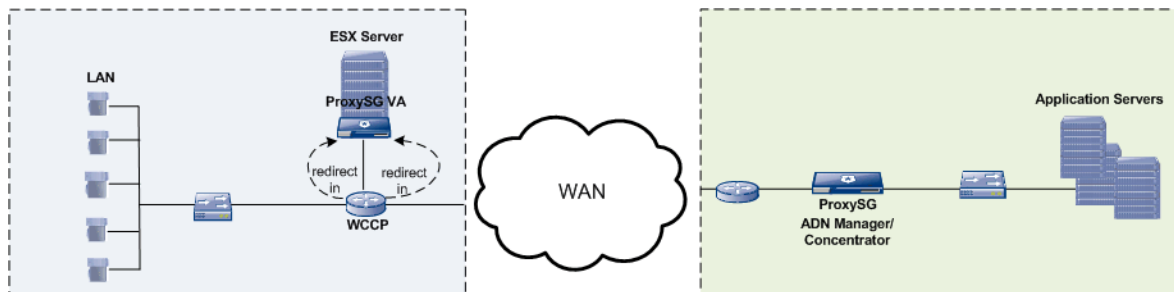
Upgrading to a New SGOS Release . . . . . B-1  
Upgrading the ProxySG VA Model . . . . . B-1

# 1 Overview

---

The ProxySG Virtual Appliance (ProxySG VA) is a software solution that can be installed and deployed on a server running VMware's ESX or ESXi Server. It is a branch office solution that accelerates the flow of data and applications between the branch office and data center, and facilitates server consolidation since the ProxySG VA can co-exist with other virtual machines on a single hardware platform. With the ProxySG VA providing WAN acceleration, the other virtual machines can provide branch office services (such as Domain Controller, print, DNS, and DHCP), as well as any VMware-certified software application.

The ProxySG VA must be installed virtually in-path using Web Cache Communication Protocol (WCCP). WCCP is a protocol that is used when a caching device, such as the ProxySG VA, is not deployed physically in-path with the router. Using the WCCP protocol, a WCCP-capable router transparently intercepts traffic and redirects it to the ProxySG VA. The following network diagram shows an Application Delivery Network (ADN) where the ProxySG VA is deployed virtually inline at a branch office and a ProxySG hardware appliance is deployed inline at the data center.



## About This Guide

This guide is intended for users who are deploying and running a ProxySG VA on VMware's ESX or ESXi Server. It provides information on the minimum system requirements and instructions for creating and configuring a virtual ProxySG.

The following topics are covered in this guide:

- ❑ [Before You Begin](#)
- ❑ [Create the ProxySG Virtual Appliance](#)
- ❑ [Configure the ProxySG VA](#)
- ❑ [WCCP Reference](#)
- ❑ [Upgrading the ProxySG VA](#)

**Note** Check [Blue Touch Online](#) for the most up-to-date version of this guide.

## Conventions Used in This Guide

This guide uses the following typographical conventions:

Convention	Example
Terms that identify buttons, fields, menu or options on the user interface are shown in Palatino font.	Step 1 Select <b>Maintenance &gt; Licensing &gt; Install</b> Step 2 Click <b>Retrieve</b>
Text that you must type exactly is denoted using bold, Courier New font.	Enter <b>https://&lt;ProxySG_IP_address&gt;:8082/mgmt</b>
Information that is variable and specific to your environment is denoted in angle brackets, bold, and in italics.	<ProxySG_IP_address> in <b>https://&lt;ProxySG_IP_address&gt;:8082/mgmt</b>

## Terminology

The following table lists the terms used in this guide.

Term	Definition
Application Delivery Network (ADN)	A Blue Coat solution that provides visibility, acceleration, and control for the application traffic traversing a WAN.
Appliance Serial Number	A string of 10 characters that uniquely identifies a Blue Coat appliance. On the first boot, you must enter the appliance serial number to begin initial configuration on the ProxySG VA.
Blue Coat Sky	The default Web interface for the MACH 5 license.
BCLP	Blue Coat Licensing Portal, for licensing your ProxySG VA. <a href="https://services.bluecoat.com/eservice_enu/licensing/register.cgi">https://services.bluecoat.com/eservice_enu/licensing/register.cgi</a>
Datastore	Storage defined in ESX/i, made up of one or more physical disks.
Director	The Blue Coat Director is the centralized change, configuration, and policy management platform. It allows you to effectively manage multiple ProxySG appliances in your network.
Enable Mode	A mode that allows administrative privileges on the Command Line Interface (CLI) of the ProxySG appliance. You can make permanent changes to the configuration in this mode.
Enable Password	A password used to access enable mode so that you can configure an appliance. The enable password is for administrators who are authorized to configure an appliance.
ESX/i Server	The physical computer (host) onto which VMware's virtualization product is installed. The ESX or ESXi Server provides CPU and memory resources, access to storage, and network connectivity to multiple virtual machines.  <b>Note:</b> Throughout this guide, <i>ESX/i Server</i> is used as a shorthand for <i>ESX or ESXi Server</i> .

## Overview

Term	Definition
Management Console	The Web interface for advanced configuration on the ProxySG VA. Enter the following URL in the Web browser for directly accessing the Management Console: <b>https://&lt;ProxySG_IP_address&gt;:8082/mgmt</b> where <ProxySG_IP_address> is the IP address of your ProxySG VA.
MACH5	Blue Coat's MACH5 edition license on the ProxySG is used for acceleration deployments. The MACH5 base license allows acceleration of HTTP, FTP, CIFS, DNS, email, and streaming protocols. Security-related features are not included.
OVF	The Open Virtualization Format is a format for packaging and distributing virtual machines. It is an XML text file that defines the attributes of a specific virtual machine package.
ProxySG VA	A ProxySG running as a virtual appliance on VMware's ESX or ESXi Server.
SGOS	The ProxySG operating system.
VAP	The Virtual Appliance Package is the zip file that contains the OVF file and the virtual disk files (.vmdk) required for creating the ProxySG VA. It also includes this guide, the ProxySG VA <i>Initial Configuration Guide</i> .
Virtual Machine	An instance of an operating system and one or more applications that run in an isolated partition of an ESX or ESXi Server. ProxySG VA is a virtual machine.
VLAN	Virtual Local Area Network. A local area network (LAN) that is created with software. It maps clients (hosts) on a basis other than by geographic location and extends across LAN segments rather than remaining in one physical LAN.
WCCP	Web Cache Communication Protocol. Allows you to establish redirection of the traffic that flows through routers.





## 2 Before You Begin

This chapter assumes that you have configured your hardware platform as an ESX/i Server, have created datastores, and have configured the ESX/i Server for network access. For information on setting up your ESX/i Server, refer to the VMware documentation.

Before you proceed with creating the ProxySG VA, perform the following tasks:

- ❑ [Confirm System Requirements for the ProxySG VA](#)
- ❑ [Retrieve Appliance Serial Numbers](#)
- ❑ [Create a Virtual Switch](#)

### Confirm System Requirements for the ProxySG VA

To achieve the best performance on the ProxySG VA, it's important that you install the software on a system that satisfies the specified requirements. Follow these guidelines to guarantee satisfactory performance and operation of the ProxySG VA.

#### Host Server

The host server must be on VMware's Hardware Compatibility List (refer to <http://www.vmware.com/resources/compatibility/search.php>). The server must have sufficient virtual resources to run your ProxySG VA model, as described in the following table.

**Table 2-1 Resource requirements by model**

Model	ProxySG VA-5 ( 5 - 10 users)	ProxySG VA-10 ( 10 - 50 users)	ProxySG VA-15 ( 50 - 125 users)	ProxySG VA-20 ( 125 - 300 users)
Virtual CPU minimum	1.0 GHz	1.5 GHz	2.0 GHz	2.5 GHz
Virtual memory	1024 MB	1536 MB	2048 MB	3072 MB
Virtual drives	1	2	4	6
Minimum storage space	100 GB	200 GB	400 GB	600 GB
* Minimum number of physical drives in a non-RAID system. For disk drive requirements in a RAID configuration, see "Support for RAID" on page 2-11.	1**	1**	2***	3***

\* The storage partition in which a ProxySG VA is installed must include the minimum number of physical drives shown in this table. This requirement ensures that adequate disk IO bandwidth is available to support the throughput for which the model is rated.

The storage partition must be on the ESX/i Server and it must contain adequate storage space.

\*\* On some platforms with RAID controllers, the storage set-up utility might allow a single drive to be configured as a RAID 0. Although a single drive is technically not a RAID configuration, it is an acceptable configuration for the ProxySG VA-5 and the ProxySG VA-10.

\*\*\* To configure drives on the ProxySG VA-15 and ProxySG VA-20, add extents to the datastore; refer to the VMware documentation for details.

## Enforced Licensed User Limit

As indicated in Table 2-1, each ProxySG VA model supports a range of users, for example the ProxySG VA-10 supports 10-50 users. However, unlike a physical appliance, the ProxySG VA *does* enforce the number of user connections, as permitted by the license. The ProxySG VA bypasses connections from users after the maximum has been reached. For example, on the ProxySG VA-10, the 51st user connection is bypassed. Alternatively, you can choose to queue the connections for users over the licensed limit.

## Deployment Recommendations

- Create only one ProxySG VA on an ESX or ESXi Server.
- For optimal performance, follow these guidelines:
  - Use only up to 85% of the available disk space on a datastore, as recommended by VMware. For example, when selecting a datastore for a ProxySG VA-15 that uses 400GB of disk space, ensure that at least 15% disk space is still available on the datastore after the ProxySG VA is created.
  - To meet performance expectations, the ProxySG VA requires local storage; SAN and NAS are not supported storage options and might result in reduced performance.
  - To make a back up of your system configuration, use the archiving feature in the ProxySG VA. Do not take snapshots of the ProxySG VA configuration. Snapshots are detrimental to the performance of the ProxySG VA because they occupy too much disk space. When a snapshot is created, a delta file is created on the Virtual Machine File System. The initial size of the delta file is 16MB, but it grows in increments of 16 MB as writes are made to the disk.
  - Do not suspend and resume the ProxySG VA. When you suspend the ProxySG VA, any active TCP connection is suspended at first and is subsequently aborted. Clients will need to reconnect when the ProxySG VA becomes available again. This suspend and resume action thereby creates a poor performance experience for the users.

## Support for RAID

RAID (Redundant Array of Independent Disks) technology is a data storage scheme that provides storage reliability and increased performance by dividing and replicating data among multiple hard disk drives. You can install the ProxySG VA on an ESX/i Server that implements RAID level 0 or RAID level 5 architecture.

RAID 0 configurations provide the best possible performance for the ProxySG VA. RAID 5 configurations, while commonly used, add significant overhead when writing data to disk and might reduce overall performance of the ProxySG VA.

## Before You Begin

The minimum number of physical disk drives required by the ProxySG VA on the ESX/i Server is as follows:

Model	ProxySG VA-5	ProxySG VA-10	ProxySG VA-15	ProxySG VA-20
Minimum number of physical drives for RAID 0	2	2	2	3
Minimum number of physical drives for RAID 5	3	3	3	4

## WCCP-Capable Router

The ProxySG VA must be installed virtually in-path using Web Cache Communication Protocol (WCCP). WCCP is a protocol that is used when a caching device, such as the ProxySG VA, is not deployed physically in-path with the router. Using the WCCP protocol, a WCCP-capable router transparently intercepts traffic and redirects it to the ProxySG VA.

## Support for VMware Products

The ProxySG VA is a VMware Ready™ virtual appliance and is compatible with the following VMware products:

- ESX or ESXi Server v3.5 (update 3 or 4) or v4.0
- VI Client v2.5 or vSphere Client 4.0
- vCenter Server v2.5 or v4.0

**Note** VMotion, Distributed Resource Scheduling (DRS), High Availability (HA), clustering and resource pools are not supported in this release.

Blue Coat worked closely with VMware to ensure that the ProxySG VA runs efficiently in the virtual environment and meets all technical criteria and specifications. The VMware Ready program is a validation program designed to provide the best possible user experience among virtual appliances being deployed in production. This status indicates that Blue Coat has followed best practices and the software is optimized for VMware vSphere, helping to ensure “ready-to-run” reliability and security.

## Support for SSL

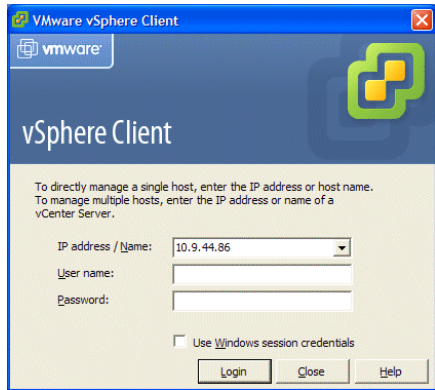
On the ProxySG VA, all cryptographic operations are performed in the SGOS software. The SSL license is included with the virtual appliance license. The SSL accelerator card is not supported on the ProxySG VA.

## Verify Resource Availability



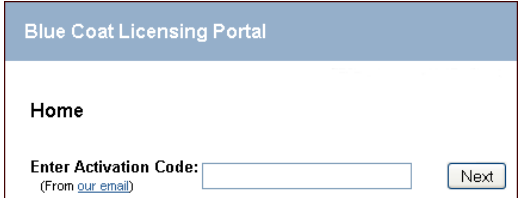
Because all virtual appliances use a hardware resource pool that can be shared and assigned as needed, you must verify that the ESX/i Server meets the minimum hardware requirements for the ProxySG VA model that you have purchased.

The following instructions describe how to verify system resources on the ESX/i Server using a VMware client. The Client is used to connect directly to an ESX/i Server or indirectly to an ESX/i Server through vCenter Server. This guide assumes that you are connected to an ESX/i Server using vSphere Client 4.0 or VI Client v2.5.

Verifying Resource Availability	
<p>Step 1 Access the ESX/i Server using your VMware client.</p>	<p>Enter the IP address of the ESX/i Server into the log-in screen of your VMware client.</p> 
<p>Step 2 Display the summary of the ESX/i Server's resources.</p>	<ol style="list-style-type: none"> <li>a. Select the ESX/i Server.</li> <li>b. Click the <b>Summary</b> tab.</li> </ol>
<p>Step 3 Verify adequate resource availability. For ProxySG VA resource requirements, see <a href="#">Table 2-1 on page 2 - 10</a>.</p>	<ol style="list-style-type: none"> <li>a. In the <b>General</b> panel, confirm availability of the minimum <b>Processor</b> speed requirement for your ProxySG VA model.</li> <li>b. In the <b>Memory Usage</b> section of the <b>Resources</b> panel, confirm availability of adequate memory resources.</li> <li>c. In the <b>Datastore</b> section of the <b>Resources</b> panel, confirm adequate free storage space availability on a local datastore on the ESX/i Server.</li> </ol>

## Retrieve Appliance Serial Numbers

The Blue Coat eFulfillment email you received after placing your order for ProxySG VA appliances contains activation codes for retrieving appliance serial numbers from the Blue Coat Licensing Portal (BCLP).

Retrieving Appliance Serial Numbers		
Step 1	<p>Make sure you have a BlueTouch Online username and password. In addition to retrieving appliance serial numbers, these credentials are required for obtaining your license, downloading software upgrades, and accessing documentation.</p>	<p>If you do not have a BlueTouch Online account, contact <a href="mailto:customercare@bluecoat.com">customercare@bluecoat.com</a>.</p> <p>Or, for call-in information, see <a href="https://bto.bluecoat.com">https://bto.bluecoat.com</a>.</p>
Step 2	<p>Locate the email you received from Blue Coat Systems. This email contains the software activation codes as well as a link to the BCLP.</p>	
Step 3	<p>Log in to BCLP.</p>	<p>a. Click the link embedded in the email. (The link begins with <a href="https://services.bluecoat.com/">https://services.bluecoat.com/</a>).</p> <p>b. Enter your BlueTouch online username and password.</p>
Step 4	<p>Enter the activation code. You can select any of the ProxySG VA activation codes that are listed in the email; the system retrieves all serial numbers from the same purchase order.</p>	<p>a. Type the code as it appears in the email, or copy and paste it into the <b>Activation Code</b> field.</p>  <p>b. Click <b>Next</b>. The ProxySG VA Serial Numbers screen displays.</p>
Step 5	<p>Record the appliance serial number(s). You will need to refer to the serial number when you perform initial configuration on the ProxySG VA.</p>	<p>Perform one of the following tasks to note the appliance serial number.</p> <ul style="list-style-type: none"> <li>• Write down the serial number(s) listed on the screen.</li> <li>• Click the <b>Download</b> link to save the serial numbers in a CSV (Comma Separated Value) file.</li> </ul> <p>For future reference, record the location and name of the ProxySG VA alongside the serial number.</p>

**Note** Each appliance serial number is unique. When performing initial configuration on the ProxySG VA, make sure that you use a dedicated serial number for each instance of a ProxySG VA. If you reuse a serial number, the ProxySG VA license could be suspended. License suspension disables proxy functionality and the graphical user interface displays the **Duplicate serial number detected** error message. To re-enable your license, the ProxySG VA with the duplicate serial number must be deleted.

## Create a Virtual Switch

A virtual machine has virtual network interfaces that are not physically cabled to a network interface card (NIC) on the ESX/i host. Therefore, to provide network access, a virtual switch (vSwitch) is required to logically connect the virtual network interfaces on the virtual machine to a physical NIC on the ESX/i host.

By default, the ESX/i Server creates a vSwitch that is connected to a physical NIC. You could use this default vSwitch, use a vSwitch that you might have created for an existing deployment or create a new vSwitch for the ProxySG VA. For instructions, see "Creating a Virtual Switch" on page 2-15.

The ProxySG VA includes three virtual network interfaces— a LAN interface, a WAN interface and a third optional interface for handling management traffic. Before creating the ProxySG VA, confirm that you have one vSwitch available for connecting the WAN and LAN interfaces. The vSwitch for the third interface is optional.

The vSwitch that connects the WAN and LAN interfaces is required. This virtual switch on the ESX/i host allows the ProxySG VA to connect to external devices, such as the WCCP router. This virtual switch handles all incoming and outgoing traffic for the ProxySG VA.

If your network topology requires a separate interface for handling management traffic to the ProxySG VA, create a virtual switch for the third interface, or use an existing vSwitch that provides the desired connectivity.

**Note** If you use VLANs for segregating traffic within the ESX/i Server or across your network, you must enable VLAN trunking on all interconnecting devices such as switches or routers. This guide does not include information on VLAN configurations.

## Before You Begin

The instructions in this section use vSphere Client v4.0.

### Creating a Virtual Switch

Step 1 Add a virtual switch for the ProxySG VA.

- a. In your VMware client, select the ESX/i Server that will host the ProxySG VA.
- b. Select the **Configuration** tab and choose **Hardware > Networking**.
- c. Click **Add Networking**, in the right corner of the dialog box.
- d. In the Add Network Wizard, select **Virtual Machine** in the **Connection Types** dialog. Click **Next**.
- e. Select **Create a virtual switch**.
- f. Select the physical NIC to manage the traffic to and from the ProxySG VA. This physical NIC will be mapped to the virtual switch. Click **Next**.
- g. Specify the **Network Label**. The default label is **Virtual Machine Network**.
- h. Verify that the VLAN ID field is blank or enter **0**.  
This guide assumes that you do not use VLANs. If you use VLANs, enter **4095** to enable VLAN trunking. This value enables Virtual Guest Machine Tagging mode on the switch, and it allows the virtual switch to preserve VLAN tags between the virtual machine and the external switch/router. Refer to the *WAN Optimization and Application Acceleration Guide* for advanced configuration details on configuring your ProxySG VA with VLANs.
- i. Verify the details and exit the Add Network Wizard.





## 3 Create the ProxySG Virtual Appliance

This chapter describes how to import a virtual appliance in to the ESX/i Server, enable performance monitoring on the virtual appliance, and ensure that the ProxySG VA has the resources available for optimal performance.

To create the ProxySG VA, you must have administrative privileges on the ESX/i Server.

Note: Blue Coat recommends creating only one ProxySG VA on an ESX/i Server.

The following topics are covered in this chapter:

- ❑ [Download the Virtual Appliance Package](#)
- ❑ [Import a ProxySG VA](#)
- ❑ [Enable Performance Monitoring on the ProxySG VA](#)
- ❑ [Reserve Resources for the ProxySG VA](#)
- ❑ [Power on the ProxySG VA](#)

### Download the Virtual Appliance Package

The Virtual Appliance Package (VAP) is required for the initial setup of the ProxySG virtual machine on your ESX/i Server. Each ProxySG VA model has a unique VAP, available for download on the BlueTouch Online download site.

The VAP is a zip file that contains the following files:

- Open Virtualized Format (OVF) file
- Virtual Machine Disk Format (VMDK) files, one for each virtual disk required on the model. For example, the ProxySG VA-20 has six .vmdk files.
- A PDF of the *ProxySG VA Initial Configuration Guide* (this guide)

Downloading the VAP	
Step 1 Log in to BlueTouch Online.	<ul style="list-style-type: none"> <li>a. In a Web browser, go to <a href="https://bto.bluecoat.com/download">https://bto.bluecoat.com/download</a></li> <li>b. Enter your login credentials when prompted.</li> </ul>
Step 2 Download the VAP file.	<ul style="list-style-type: none"> <li>a. In BTO, click the <b>Downloads</b> tab.</li> <li>b. Select <b>ProxySG</b>.</li> <li>c. Click <b>SGOS5.5</b>.</li> <li>d. In the <b>Virtual Appliance Installer</b> section, select the VAP file for your ProxySG VA model.</li> <li>e. Follow the onscreen instructions.</li> </ul>

---

**Downloading the VAP**

---

Step 3 Extract the contents of the VAP file.

The files should be extracted to a location that can be accessed from the system running the VMware client or vCenter Server.

**Note** Because the .ovf file includes a pointer to the .vmdk files, you must extract and store the contents of the .zip file within the same folder. Do not rename the files.

---

## Import a ProxySG VA

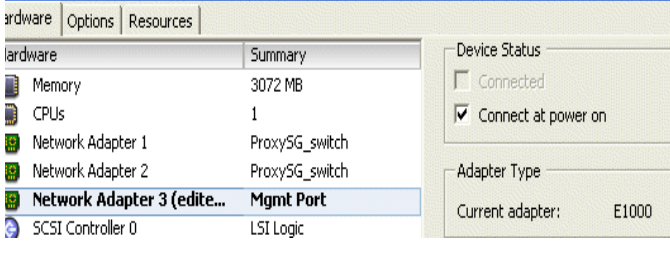
The instructions in this section use vSphere Client v4.0.

Importing the OVF File	
<p>Step 1 Create the ProxySG VA on your host ESX/i Server.</p> <p><b>Note</b> In ESX 4.0, you cannot deploy the OVF from vSphere Server; you must use the vSphere Client to import OVF templates.</p>	<ol style="list-style-type: none"><li>a. In your VMware client, select your host ESX/i Server.</li><li>b. Select <b>File &gt; Deploy OVF Template</b>. <b>Note</b> The equivalent command in VI Client is <b>File &gt; Virtual Appliance &gt; Import</b>.</li><li>c. Select <b>Deploy from file</b> or <b>Deploy from URL</b> and browse to the location of the .ovf file. Click <b>Next</b>.</li><li>d. Verify the OVF template details and click <b>Next</b>.</li><li>e. Enter a name for the ProxySG VA, for example: <b>SGVA_Mode115_Sydney</b>. The name should be unique within your ESX/i host. Click <b>Next</b>.</li><li>f. Choose a datastore with sufficient free space. See "<a href="#">Confirm System Requirements for the ProxySG VA</a>" on page 2-9 for disk space requirements. Click <b>Next</b>.</li><li>g. For the WAN and LAN interfaces, select the vSwitch to be used by the ProxySG VA. Click <b>Next</b>.</li><li>h. (Optional) Connect the third interface to a different virtual switch on the ESX/i host. This interface is required only if a client on a private subnet requires management access to the ProxySG VA, for example, if the management client cannot access the ProxySG VA through its WAN and LAN ports.</li><li>i. Review the details and click <b>Finish</b> to begin creating the ProxySG VA. See the <b>Recent Tasks</b> panel located at the bottom of your VMware client screen, for the progress bar indicating the percentage complete.</li></ol>

**Importing the OVF File (Continued)**

Step 2 (Optional) Enable the vSwitch for the third interface.

**Note** This step is required only if you plan to use the third interface on the ProxySG VA.



- a. Select the ProxySG VA, on the ESX/i Server.
- b. Right click and select **Edit Settings**.
- c. Select **Hardware > Network Adapter 3**.
- d. In the **Device Status** panel, enable the check box for **Connect at power on**.
- e. Click **OK** to exit the dialog.

## Enable Performance Monitoring on the ProxySG VA

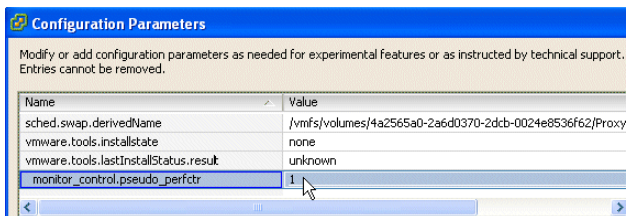
To monitor performance more accurately, you must enable a performance monitoring counter for the ProxySG VA. You will enter this setting using your VMware client.

**Enable the Performance Monitoring Counter**

Step 1 Navigate to the CPU settings for the ProxySG VA.

- a. In your VMware client, select the ProxySG VA virtual machine.
- b. Right click and select **Edit Settings**.
- c. In the **Options** tab, select **Advanced > General**.
- d. Click **Configuration Parameters**.

Step 2 Add the string for monitoring performance.



- a. Click **Add row**, in the Configuration Parameters window.
- b. Enter `monitor_control.pseudo_perfctr` in the **Name** column of the new row.
- c. Enter `1` in the **Value** column.
- d. Verify that the string has no typographical errors.
- e. Click **OK**.
- f. Click **OK** to close the dialog.

The ProxySG VA uses the `monitor_control.pseudo_perfctr` counter to monitor *stolen time*. Stolen time is the difference between “real time” (as measured on the host server’s clock) and “apparent time” (as measured on the ProxySG); small amounts of stolen time are an inevitable occurrence on virtual machines. Stolen time can become excessive when the ProxySG VA is running at 100% CPU utilization, the ESX/i Server is overloaded, and the recommended resources for the ProxySG are not reserved (as described in the next section).

Because excessive stolen time can create issues with ProxySG reporting and operations, the following actions are taken when stolen time on your ProxySG VA has exceeded predefined thresholds:

## Create the ProxySG Virtual Appliance

- ❑ If instantaneous stolen time exceeds 15 seconds, the ProxySG VA automatically reboots.
- ❑ If accumulated stolen time exceeds 30 minutes in a 24-hour period, the ProxySG license is temporarily disabled, and all traffic is bypassed. The health state of the ProxySG VA transitions to Critical, and the following alerts appear:

**License expired. All traffic is now bypassed.**

**Virtual appliance stolen time threshold exceeded.**

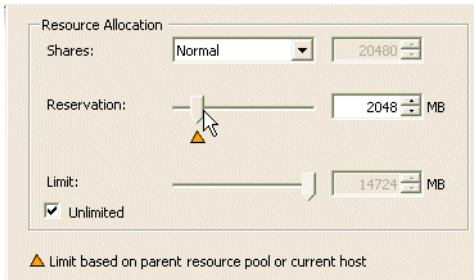
## Reserve Resources for the ProxySG VA

Blue Coat recommends reserving memory and a CPU core for the ProxySG VA. If resource allocation is not accurate for the ProxySG VA model that you have created, the ProxySG VA might not perform optimally. If the ESX/i host does not have the available resources to satisfy the resource reservations, the ProxySG VA will not power on.

Reserving Resources	
Step 1 Determine the appropriate value for the CPU reservation. The reservation should be the full CPU frequency of one core.	<ol style="list-style-type: none"><li>a. In your VMware client, select the ESX/i host.  <b>Note:</b> Make sure the <i>host</i> is selected and not the <i>ProxySG VA virtual machine</i>.</li><li>b. Click the <b>Summary</b> tab.</li><li>c. Note the value next to <b>Processor</b> (for example, 2.26 GHz).</li><li>d. Multiply this number by 1000 to obtain the value in MHz. For example, <math>1000 \times 2.26 = 2260</math> MHz.</li></ol>
Step 2 Specify the CPU reservation value for the ProxySG VA.	<ol style="list-style-type: none"><li>a. Select the ProxySG VA, on the ESX/i host.</li><li>b. Right click and select <b>Edit Settings</b>. The <b>Virtual Machine Properties</b> window displays.</li><li>c. In the <b>Resources</b> tab, select <b>CPU</b>.</li><li>d. Specify the <b>Reservation</b> value for the CPU that you determined in Step 2.</li><li>e. Retain the default values for the other options.</li></ol>

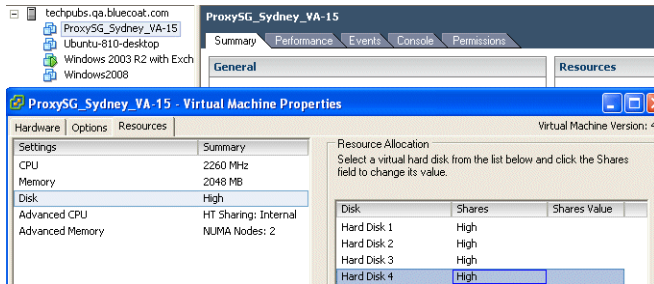
**Reserving Resources (Continued)**

Step 3 Specify the memory reservation for the ProxySG VA.



- In the **Resources** tab, select **Memory**.
- Specify the **Reservation** value for memory allotted to the ProxySG VA. Input the value recommended for your model. See [“Confirm System Requirements for the ProxySG VA”](#) on page 2-9 for the values by model.
- Retain the default values for the other options.

Step 4 Give the virtual disks on the ProxySG VA a higher priority access to the physical disks on the ESX/i Server. (Recommended if the ProxySG VA’s datastore is shared by other virtual machines on the ESX/i Server.)



- In the **Resources** tab, select **Disk**.
- For each of the disks on the ProxySG VA, change the value to **High** in the **Shares** field. Setting this value to *high* ensures that the ProxySG VA gains higher priority access to disk resources, as compared to other virtual machines that use the same physical disks.
- Click **OK** to exit the dialog.

## Power on the ProxySG VA

Make sure that you have enabled the performance monitoring counter and reserved resources for the ProxySG VA before powering it on. If resource allocation is not accurate for the ProxySG VA model that you have created, the ProxySG VA will not power on.

**Powering On the ProxySG VA**

Step 1 Power on the ProxySG VA.

- Log in to the ESX/i Server using your VMware client.
- Select the ProxySG VA.
- Right click and select **Power On**. When the ProxySG VA is powered on, a green arrow appears next to its virtual machine name.



# 4 Configure the ProxySG VA

---

This chapter describes how to perform the initial set-up and configuration of the ProxySG VA for transparent redirection of traffic. The following topics are covered in this chapter:

- ❑ [Perform Initial Configuration](#)
- ❑ [Launch Blue Coat Sky](#)
- ❑ [Register and License the ProxySG VA](#)
- ❑ [Configure WCCP](#)
- ❑ [Verify your Configuration](#)
- ❑ [Next Steps](#)

## Perform Initial Configuration


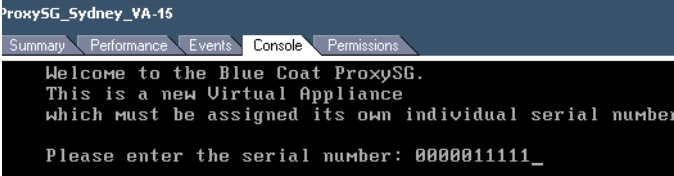
You will use the **Console** tab on your VMware client to access the ProxySG VA for initial configuration. The set-up script prompts you to configure basic network settings, including adding two interface IP addresses for WCCP (transparent redirection), and setting up administrative credentials for console access.

The following table summarizes the prompts in the set-up wizard. Before you launch the set-up wizard, obtain and record the information specific to your deployment in this table. After you have recorded your settings in the table, see "[Completing Initial Configuration](#)" on page 4-24.

Description	Value
Appliance Serial Number	Refer to the 10 digit appliance serial number that you recorded in " <a href="#">Retrieving Appliance Serial Numbers</a> " on page 2-13. Default value: none provided
Manual set-up or use Director	If using Director, you must configure a registration password or <i>shared secret</i> on the Director. The same password must be entered while performing the initial configuration. The shared secret is required because the ProxySG VA does not have an appliance certificate. Default value: none provided
Solution to implement	Acceleration is the only option for the ProxySG VA and is set automatically. Default value: Acceleration
Deployment type	WCCP is the only option for the ProxySG VA and is set automatically. Default value: WCCP
Appliance name	For easy identification, use the same or similar name that you used while creating the ProxySG VA on the ESX/i Server. Default value: VA serial number

Description	Value
Interface configuration	<p>Identify the IP addresses and subnet masks for the WAN and LAN interfaces.</p> <p>Blue Coat recommends keeping the WAN and LAN interfaces of the ProxySG VA on the same subnet. Both interfaces will be connected to one virtual switch that is connected to the same physical NIC on the ESX/i Server.</p> <p>You also have an option to assign a VLAN ID to each interface. If you use VLANs for segregating traffic within the ESX/i Server or across your network, you must enable VLAN trunking on all interconnecting devices such as switches or routers. This guide does not include information on VLAN configurations.</p> <p>Default value: none provided</p>
Default gateway	<p>Provide the IP address for the default gateway.</p> <p>Default value: none provided</p>
Primary DNS server	<p>Provide the IP address for the primary DNS server.</p> <p>Default value: none provided</p>
Administrator username (ID) and password	<p>The password you assign here will also be used for accessing enable mode in the CLI. Enable mode allows the user to make configuration changes.</p> <p>Default username: admin</p> <p>Default password: none provided</p>

Use the instructions below for performing initial configuration on the ProxySG VA.

Completing Initial Configuration	
<p>Step 1 Verify that your ProxySG VA is powered on.</p>	<p>a. Log in to the ESX/i Server using your VMware client.</p> <p>b. Check for power on status. If the ProxySG VA is powered on, a green arrow appears next to its virtual machine name.</p> 
<p>Step 2 Access the virtual console of the ProxySG VA on the ESX/i Server.</p>	<p>a. Select the ProxySG VA on the ESX/i Server.</p> <p>b. Select the <b>Console</b> tab and click inside the console window to activate your mouse.</p>
<p>Step 3 The appliance serial number has 10 digits. It is unique for each appliance and must be used on only one ProxySG VA. See "<a href="#">Retrieve Appliance Serial Numbers</a>" on page 2-13.</p> 	<p>a. Enter the appliance serial number at the prompt.</p> <p><b>Note</b> The leading zeroes are significant for serial numbers. Enter all 10 digits at the prompt.</p> <p>b. Press Enter.</p>



Completing Initial Configuration (Continued)	
<p>Step 4 Follow the prompts and enter the details in the set-up script.</p>	<p>a. Press Enter three times to activate the serial console.</p> <p><b>Note</b> To release the mouse from the VMware client’s <b>Console</b> tab, press the Ctrl and Alt keys on your keyboard.</p> <p>b. <b>Step 1:</b> For the question <b>How do you plan to configure this appliance?</b> select your preference for either configuring the ProxySG VA manually or using Director, If using Director, you must assign a registration password on Director and enter the password in the set-up console, when prompted. For information on setting up a registration password, refer to the <i>Blue Coat Director Configuration and Management Guide</i>.</p> <p>c. <b>Step 2:</b> For the question <b>Which solution would you like to implement?</b> press Enter to accept the auto-selected value (Acceleration).</p> <p>d. <b>Step 3:</b> For the question <b>How will you deploy this appliance?</b> press Enter to accept the auto-selected value (WCCP)</p> <p>e. <b>Step 4:</b> (Optional) Enter an appliance name for the ProxySG VA. The default value is ProxySG VA <i>serial number</i>. This name helps identify the appliance when you log in to the appliance using a Web browser. The name displays on your Web browser and on the banner on Blue Coat Sky.</p> <p>f. <b>Step 5:</b> Add the IP address and subnet mask for two interfaces — WAN and LAN — on your ProxySG VA.</p> <p><b>Note</b> You will also be asked if you want to assign a VLAN ID to each interface. If you use VLANs for segregating traffic within the ESX/i Server or across your network, you must enable VLAN trunking on all interconnecting devices such as switches or routers. This guide does not include information on VLAN configurations.</p>

Completing Initial Configuration (Continued)	
Setup script continued	<ul style="list-style-type: none"> <li>g. <b>Step 6:</b> Add the IP address for the default gateway.</li> <li>h. <b>Step 7:</b> Add the IP address for the DNS server.</li> <li>i. <b>Step 8:</b> Change the username for administrative access on the ProxySG VA. The default username is <i>admin</i>.</li> <li>j. <b>Step 9:</b> Add a password for allowing administrative access privilege.</li> <li>k. <b>Step 10:</b> Confirm that you would like to activate acceleration after you configure WCCP.</li> </ul>
Step 5 Verify the configuration settings.	<ul style="list-style-type: none"> <li>a. Look over the configuration settings displayed on the screen.</li> <li>b. To modify a setting, follow the onscreen prompts.</li> <li>c. Press Enter to save the settings.</li> </ul>
Step 6 Enable return to sender (RTS) for Inbound and Outbound requests. Inbound RTS is enabled by default, but you must enable RTS for Outbound.  <b>Note</b> RTS configures the ProxySG to send response packets back to the same interface that received the request packet.	<ul style="list-style-type: none"> <li>a. Press Enter three times.</li> <li>b. Enter 1 to go to the command line interface.</li> <li>c. At the console prompt, enter <b>enable</b> and type the enable password when prompted.</li> <li>d. Enter <b>conf t</b>. The (config) prompt displays.</li> <li>e. Enter the following command: <b>return-to-sender outbound enable</b></li> <li>f. To verify that RTS is enabled for both Inbound and Outbound:   <pre># (config) show return-to-sender Return to sender:   Inbound sessions: enabled   Outbound sessions: enabled   Overwrite static route entry: disabled   Version: 2</pre> </li> </ul>
Step 7 Close the Console.	<ul style="list-style-type: none"> <li>a. Press Ctrl and Alt to release the mouse from the Console.</li> <li>b. Click any other tab in the VMware client (such as <b>Summary</b>).</li> </ul>

## Launch Blue Coat Sky

The ProxySG has two graphical user interfaces — Blue Coat Sky and the Management Console. Blue Coat Sky is the default Web interface for managing the ProxySG VA. The Management Console allows you to perform advanced configuration tasks, such as creating policy.

To access Blue Coat Sky, enter the IP address of the ProxySG VA into the Web browser, for example:

`https://192.168.16.10:8082`

or

`https://192.168.16.10:8082/sky`

To access the Management Console directly, enter the following URL in your Web browser:

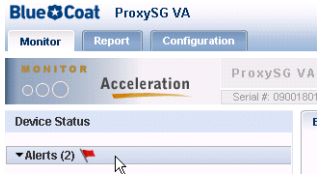
`https://<ProxySG_IP_Address>:8082/mgmt`

For example, `https://192.168.16.10:8082/mgmt`

Before you can accelerate traffic in your network, you must obtain and install the license for the ProxySG VA and configure WCCP for transparent redirection of traffic to the ProxySG VA.

When you log in to Blue Coat Sky, two alerts are displayed, one for licensing the appliance and the other for configuring WCCP. Use the following instructions to complete initial configuration on the ProxySG VA.

### Accessing Blue Coat Sky

<p>Step 1 Access Blue Coat Sky.</p>	<p>Enter the IP address of the ProxySG VA into the Web browser. For example:</p> <p><code>https://192.168.16.10:8082</code></p> <p>or</p> <p><code>https://192.168.16.10:8082/sky</code></p> <p>The <b>WCCP configuration incomplete</b> dialog box displays.</p>
<p>Step 2 Close the <b>WCCP configuration incomplete</b> dialog box. (You will configure WCCP later.)</p>	<p>a. Click <b>Do it Later</b>.</p>
<p>Step 3 View the alerts and proceed with additional configuration tasks.</p> 	<p>a. On the <b>Monitor</b> tab, view the messages in the <b>Alerts</b> panel.</p> <p>b. Perform the following tasks:</p> <ul style="list-style-type: none"> <li>– Click the license alert to retrieve the license for the ProxySG VA. See <a href="#">“Register and License the ProxySG VA” on page 4-28</a>.</li> <li>– Click the WCCP alert to configure WCCP on the ProxySG VA. See <a href="#">“Configure WCCP” on page 4-31</a>.</li> </ul>

**Note** Before you can accelerate traffic in your network, you must complete both tasks: licensing and WCCP configuration.

## Register and License the ProxySG VA

The ProxySG VA offers a subscription-based license that is valid for a set period of time (such as one year). After you have installed the license, the ProxySG VA has full functionality, and you have access to software upgrades and product support for the subscription period.

### Supported Licenses

The ProxySG VA supports only the Blue Coat MACH5 Edition license which allows acceleration of HTTP, FTP, CIFS, DNS, email, and streaming protocols. Security-related features are not included. The ProxySG VA also includes an SSL license for intercepting SSL traffic.

The following license components are not supported:

- Proxy Edition license
- Trial period

A new ProxySG VA is unlicensed and there is no trial period for virtual appliances. Until you install the license, the virtual appliance bypasses all traffic.



The ProxySG VA is in a **License Expired** state when it cannot detect a license, either because it hasn't been installed yet or because the license has expired. The banner displays **Unlicensed** until you renew the subscription and install the license key file. An unlicensed virtual appliance bypasses all traffic. Clicking this link in the Blue Coat Sky banner displays the Licensing page so that you can install the license.

If your ProxySG VA has direct access to the Internet, follow the first procedure ("[License the ProxySG VA on page 4-28](#)"). If your ProxySG VA does not have Internet access, skip the first procedure and follow the instructions in the second procedure ("[Download and Install the License Key File on page 4-29](#)").

### License the ProxySG VA

Follow this procedure if your ProxySG VA can access the Internet.

Licensing the ProxySG VA	
Step 1	Navigate to the Licensing page in Blue Coat Sky.
	This procedure requires that the ProxySG VA has Internet access.
	Click the <b>License expired</b> link in the Alerts panel.
	or
	Select <b>Configure &gt; Device &gt; Licensing</b> .
	The Licensing page displays.

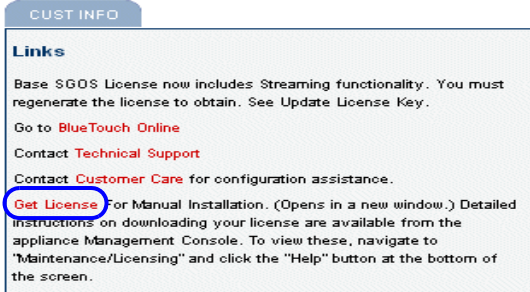
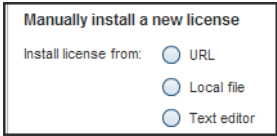
Licensing the ProxySG VA	
<p>Step 2 Install the ProxySG VA license.</p> 	<ol style="list-style-type: none"> <li>a. In the Install License panel, enter your BlueTouch Online credentials (User ID and Password).</li> <li>b. Click <b>Submit credentials and install license</b>. After a moment, the message <b>License installed successfully</b> displays.</li> <li>c. Click <b>OK</b>.</li> </ol>
<p>Step 3 Verify that your license is installed.</p>	<ol style="list-style-type: none"> <li>a. Refresh your browser. (The licensing information may not display until you refresh the browser.)                     <p>The ProxySG VA model number displays on the banner, in place of the <b>Unlicensed</b> message.</p>  </li> <li>b. Return to the Licensing configuration page.                     <p>The <b>Type</b> now reflects the license type: <b>SGOS 5 MACH5 Edition</b>, and the <b>Expiration Date</b> indicates when your license subscription will expire.</p> </li> </ol>

**Note** For 90 days before the license expires, Blue Coat Sky and the Management Console alert you that the license will be expiring. If your license expires before you have renewed the subscription, the ProxySG VA will cease to optimize your network traffic; all traffic will be bypassed. Therefore, it's important that you renew your license during the warning period so that you never lose functionality.


## Download and Install the License Key File

If your ProxySG does not have direct Internet access, you cannot use the automatic procedure described in "[License the ProxySG VA](#)" on page 4-28. You need to download the license key file from a workstation with Internet access and place the file on a web server or a workstation that is used to manage the ProxySG. After the license key is accessible, you can install the license on the ProxySG.

You use the Blue Coat Licensing Portal (BCLP) to create a License Key File (LKF) for your ProxySG VA appliance. The LKF contains all the component licenses for your ProxySG VA—the MACH5 license along with the SSL license.

Manually Licensing the ProxySG VA	
<p>Step 1 Log in to Blue Coat’s licensing portal.</p>	<ol style="list-style-type: none"> <li>a. From a workstation with Internet access, use a Web browser and navigate to <a href="https://bto.bluecoat.com/licensing">https://bto.bluecoat.com/licensing</a></li> <li>b. Click <b>License a Proxy</b> on the page that displays.</li> <li>c. Use your BlueTouch Online credentials to log on to the License Configuration and Management System portal. A list displays all Blue Coat appliances registered to this BTO account.</li> </ol>
<p>Step 2 Download the License Key File for the ProxySG VA.</p> 	<ol style="list-style-type: none"> <li>a. Click on the appropriate virtual appliance serial number.</li> <li>b. Select <b>Manage Software Serial Numbers</b>. The License Self-Service page displays.</li> <li>c. Click <b>Get License</b>. The <b>Get License</b> link is located in the <b>Cust Info &gt; Links</b> tab. A new window displays with the .bin LKF file.</li> <li>d. Verify that the serial number is correct and save the LKF on a local directory or a Web server.</li> </ol>
<p>Step 3 Manually install the License Key File.</p> 	<ol style="list-style-type: none"> <li>a. In Blue Coat Sky, select <b>Configure &gt; Device &gt; Licensing</b>.</li> <li>b. In the <b>Manually install a new license</b> section, select one of the following:                     <ul style="list-style-type: none"> <li><b>URL</b> — Enter the address/name of the web server and the path to the License Key File; then click <b>Upload and install</b>.</li> <li><b>Local file</b> — Click <b>Browse and install</b> and locate the License Key File; then click <b>Open</b>.</li> <li><b>Text editor</b> — Paste in the contents of the License Key File; then click <b>Install</b>. (You need to open the .bin file in a text editor, such as Notepad.)</li> </ul> </li> </ol> <p>After a moment, the message <b>License installed successfully</b> displays.</p>

### Manually Licensing the ProxySG VA

<p>Step 4 Verify that your license is installed.</p>	<p>a. Refresh your browser. (The licensing information may not display until you refresh the browser.)</p> <p>The ProxySG VA model number displays on the banner, in place of the <b>Unlicensed</b> message.</p>  <p>b. Return to the Licensing configuration page.</p> <p>The <b>Type</b> now reflects the license type: <b>SGOS 5 MACH5 Edition</b>, and the <b>Expiration Date</b> indicates when your license subscription will expire.</p>
--	--

**Note** For 90 days before the license expires, Blue Coat Sky and the Management Console alert you that the license will be expiring. If your license expires before you have renewed the subscription, the ProxySG VA will cease to optimize your network traffic; all traffic will be bypassed. Therefore, it's important that you renew your license during the warning period so that you never lose functionality.

## Configure WCCP

WCCP is a routing protocol that allows certain Cisco switches and routers to transparently redirect traffic to a caching device such as the ProxySG VA. To facilitate transparent traffic redirection and service requests from clients, you need to configure both the WCCP-capable switch or router and the ProxySG VA to participate in a service group scheme. A service group is established when the WCCP-capable device and the ProxySG VA are able to discover, advertise, and verify connectivity to each other.

To configure WCCP, perform the following tasks:

- ❑ Plan two service groups for redirecting traffic between the ProxySG VA and the WCCP-capable switch or router. On the ProxySG VA and the WCCP-capable device, you must create two service groups to redirect traffic from the WAN and the LAN to the ProxySG VA. See “[Overview](#)” on page 1-5, for a network diagram. Creating separate service groups allows you to segregate WAN and LAN traffic and helps you monitor the performance of LAN and WAN traffic on your network.
- ❑ Determine the WCCP capabilities that your switch or router supports. The packet forwarding and return mechanism (L2 or GRE) that you choose for redirecting traffic between the switch or router and the ProxySG VA must be supported on your switch or router. Refer to your switch or router documentation for details.
- ❑ Configure your router with the service groups, define the unicast or multicast addressing scheme, and enable WCCP. For a sample router configuration, see “[Configure WCCP on the Router](#)” on page 4-32.
- ❑ Configure WCCP on the ProxySG VA. See “[Configure WCCP on the ProxySG VA](#)” on page 4-32.

For more information on configuring WCCP on the ProxySG VA, refer to the *WCCP Reference Guide* at <https://bto.bluecoat.com/documentation/pubs/ProxySG>

## Configure WCCP on the Router

A sample router configuration follows. Refer to your router documentation for commands that are specific to configuring the router. In the example below, interface 0/0 is the one being used to connect to the ProxySG VA.

```
Router>enable
Router#conf t
Router(config)#ip wccp version 2
Router(config)#ip wccp 10
Router(config)#ip wccp 11
Router(config)#interface gigabitethernet0/0
Router(config-if)#description ProxySG VA facing interface
Router(config-if)#ip address 192.168.16.1 255.255.255.0
Router(config-if)#exit
Router(config)#interface gigabitethernet0/1
Router(config-if)#description LAN facing interface
Router(config-if)#ip address 51.3.200.1 255.255.255.0
Router(config-if)#ip wccp 10 redirect in
Router(config-if)#exit
Router(config)#interface gigabitethernet0/2
Router(config-if)#description WAN facing interface
Router(config-if)#ip address 130.34.191.1 255.255.255.0
Router(config-if)#ip wccp 11 redirect in
Router(config-if)#exit
Router(config)#copy running-config startup-config
```

## Configure WCCP on the ProxySG VA

On the ProxySG VA, both the LAN and the WAN ports are connected to one vSwitch, which is attached to a physical adapter on the ESX/i Server. Because the WCCP router communicates with the ProxySG VA on one physical link, both the LAN and the WAN ports on the ProxySG VA must be on the same subnet. You must configure both the LAN and the WAN interfaces before enabling WCCP.

- ❑ For planning the service groups in your configuration, use the empty “[Worksheet for Configuring WCCP \(Blank\)](#)” on page A-2.
- ❑ For a sample completed worksheet, see “[Worksheet for Configuring WCCP \(Sample\)](#)” on page A-3.

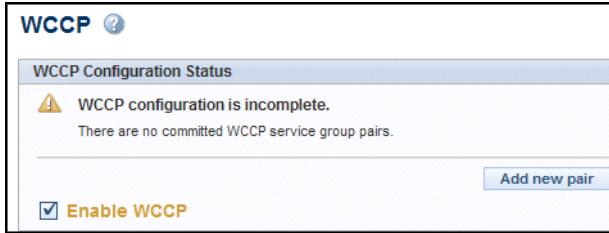
Use the following instructions to configure WCCP on the ProxySG VA.

Configuring WCCP for Traffic Redirection	
Step 1 Access Blue Coat Sky.	Enter the IP address of the ProxySG VA into the Web browser. For example:  <b>https://192.168.16.10:8082</b>
Step 2 Navigate to the WCCP configuration page.	Click the WCCP message in the <b>Alerts</b> panel.  or  Select <b>Configure &gt; Network &gt; WCCP</b> .



**Configuring WCCP for Traffic Redirection (Continued)**

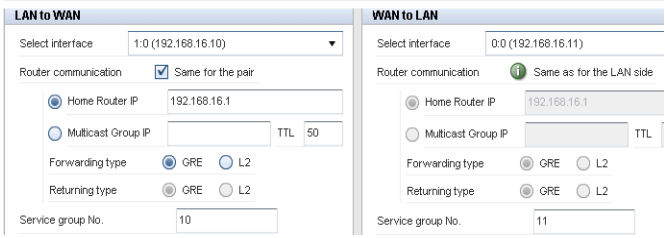
Step 3 Enable WCCP.



Select **Enable WCCP**.

Step 4 Add a new pair of interfaces for WCCP.

Click **Add new pair**. The **WCCP Configuration Pair** details display.

Configuring WCCP for Traffic Redirection (Continued)	
<p>Step 5 Define your service groups for the LAN to WAN and the WAN to LAN interfaces and apply the respective service group to each interface of the ProxySG VA.</p>  <p>The screenshot shows two configuration panels. The left panel is for 'LAN to WAN' with 'Select interface' set to '1.0 (192.168.16.10)'. It has 'Home Router IP' set to '192.168.16.1', 'Forwarding type' set to 'GRE', and 'Returning type' set to 'GRE'. The 'Service group No.' is '10'. The right panel is for 'WAN to LAN' with 'Select interface' set to '0.0 (192.168.16.11)'. It has 'Home Router IP' set to '192.168.16.1', 'Forwarding type' set to 'GRE', and 'Returning type' set to 'GRE'. The 'Service group No.' is '11'. Both panels have 'Same for the pair' checked.</p>	<ol style="list-style-type: none"> <li>a. Select the interface on the ProxySG VA from the drop-down list. For example, the LAN to WAN interface handles LAN traffic that is redirected from the router to the ProxySG VA. For example: <b>1:0 (192.168.16.10)</b></li> <li>b. Make sure the <b>Same for the pair</b> check box is selected. This selection retains identical settings for router IP address, forwarding and returning type configuration on both service groups of the ProxySG VA.</li> <li>c. Add the unicast address in the <b>Home Router IP</b> field to establish and maintain the service group. The home router address that you use for a service group on the ProxySG VA should match the IP address that the ProxySG VA uses to communicate with the router. The ProxySG VA and the router use this IP address to communicate WCCP messages with each other.</li> <li>d. Select the forwarding method and returning method: GRE (default) or L2. <b>Forwarding type</b> defines the method that the router uses to redirect traffic to the ProxySG VA. <b>Returning type</b> defines the method that the router uses to return bypassed packets to the ProxySG VA. If you select GRE forwarding, GRE returning is auto selected. With L2 forwarding, you can select either GRE return or L2 return.</li> <li>e. Enter the <b>Service group number</b> for the <b>LAN to WAN</b> interface; this number needs to match what was configured on the router.</li> <li>f. Enter the <b>Service group number</b> for the <b>WAN to LAN</b> interface; this number also needs to match the router configuration.</li> </ol>
<p>Step 6 (Optional) Change advanced settings if necessary. For example, use these instructions to change the default assignment type.</p>	<ol style="list-style-type: none"> <li>a. Click to expand the <b>More Settings</b> panel for both LAN to WAN and WAN to LAN traffic.  Make sure to leave <b>TCP ports to redirect</b> at its default setting (<b>All ports</b>).</li> <li>b. Use the help button for an explanation of any of these settings.</li> </ol>
<p>Step 7 Save the settings.</p>	<ol style="list-style-type: none"> <li>a. Click <b>Commit all</b>. (You may need to scroll up to see the button.)</li> </ol>

## Verify your Configuration

Use the following instructions to verify that the traffic in your network is being intercepted and accelerated as required.


- ❑ [Verifying WCCP Statistics and Service Group Status](#)
- ❑ [Verifying Acceleration](#)

### Verifying WCCP Statistics and Service Group Status

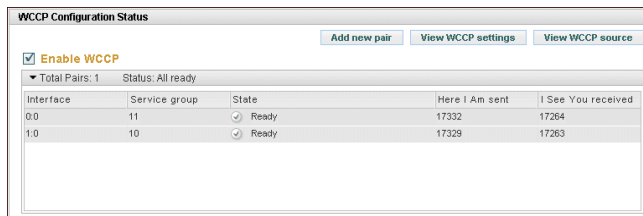
After you configure WCCP, the WCCP router and ProxySG VA begin negotiating the capabilities that are configured. Use the following procedure to monitor the configured service groups.

#### Viewing WCCP Service Group Status

Step 1 View WCCP status.

- a. Navigate to the **Configure > Network > WCCP** page.
- b. If necessary, click the  icon next to **Total pairs**, to open the status panel.

Step 2 Verify WCCP status.



Interface	Service group	State	Here I Am sent	I See You received
0:0	11	Ready	17352	17264
1:0	10	Ready	17328	17263

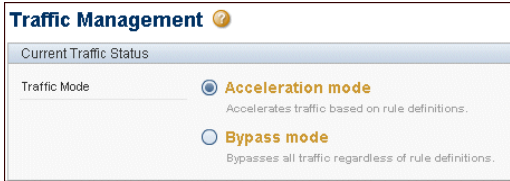
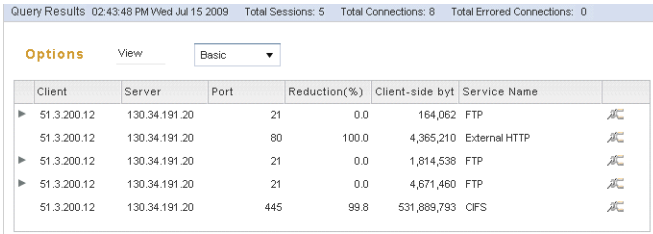
Verify the following:

- WCCP is enabled.
- Each service group is in the **Ready** state.
- The overall status is **All Ready**.
- Messages are being sent to the router (**Here I Am sent**) and received from the router (**I See You received**). These statistics are updated every minute.

If a service group state is not **Ready**, see "[About Service Group States](#)" on page A-1 for descriptions of other states.

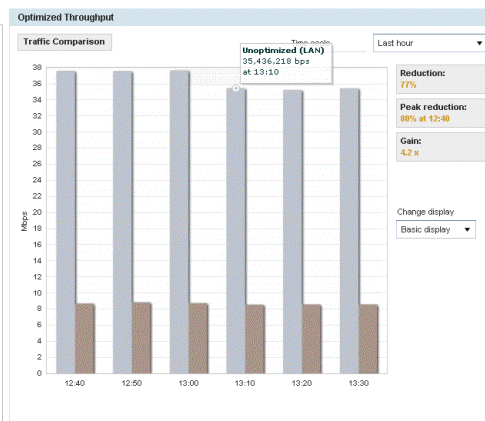
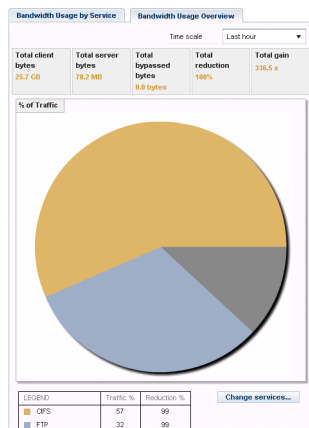
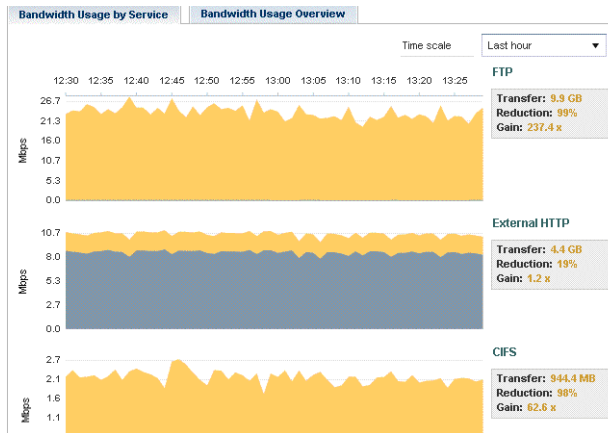
## Verifying Acceleration

Use the steps below to verify that network connectivity is uninterrupted and intercepted traffic is being accelerated and optimized.

Verify Performance																																					
<p>Step 1 Verify that the ProxySG VA is in acceleration mode.</p>  <p>The screenshot shows the 'Traffic Management' configuration page. Under 'Current Traffic Status', the 'Acceleration mode' radio button is selected, with the description 'Accelerates traffic based on rule definitions.' The 'Bypass mode' radio button is unselected, with the description 'Bypasses all traffic regardless of rule definitions.'</p>	<ol style="list-style-type: none"> <li>In Blue Coat Sky, select <b>Configure &gt; Acceleration &gt; Traffic Management</b>.</li> <li>If necessary, select <b>Acceleration Mode</b> and click <b>Commit all</b>.</li> </ol>																																				
<p>Step 2 Verify that the services enabled on your ProxySG VA are being accelerated.</p>  <p>The screenshot shows a 'Query Results' table with the following data:</p> <table border="1"> <thead> <tr> <th>Client</th> <th>Server</th> <th>Port</th> <th>Reduction(%)</th> <th>Client-side byt</th> <th>Service Name</th> </tr> </thead> <tbody> <tr> <td>51.3.200.12</td> <td>130.34.191.20</td> <td>21</td> <td>0.0</td> <td>164,062</td> <td>FTP</td> </tr> <tr> <td>51.3.200.12</td> <td>130.34.191.20</td> <td>80</td> <td>100.0</td> <td>4,365,210</td> <td>External HTTP</td> </tr> <tr> <td>51.3.200.12</td> <td>130.34.191.20</td> <td>21</td> <td>0.0</td> <td>1,814,538</td> <td>FTP</td> </tr> <tr> <td>51.3.200.12</td> <td>130.34.191.20</td> <td>21</td> <td>0.0</td> <td>4,671,460</td> <td>FTP</td> </tr> <tr> <td>51.3.200.12</td> <td>130.34.191.20</td> <td>445</td> <td>99.8</td> <td>531,889,793</td> <td>CIFS</td> </tr> </tbody> </table>	Client	Server	Port	Reduction(%)	Client-side byt	Service Name	51.3.200.12	130.34.191.20	21	0.0	164,062	FTP	51.3.200.12	130.34.191.20	80	100.0	4,365,210	External HTTP	51.3.200.12	130.34.191.20	21	0.0	1,814,538	FTP	51.3.200.12	130.34.191.20	21	0.0	4,671,460	FTP	51.3.200.12	130.34.191.20	445	99.8	531,889,793	CIFS	<p>Select <b>Report &gt; Intercepted Connections</b> to view the sessions that are being intercepted and optimized by the ProxySG VA.</p>
Client	Server	Port	Reduction(%)	Client-side byt	Service Name																																
51.3.200.12	130.34.191.20	21	0.0	164,062	FTP																																
51.3.200.12	130.34.191.20	80	100.0	4,365,210	External HTTP																																
51.3.200.12	130.34.191.20	21	0.0	1,814,538	FTP																																
51.3.200.12	130.34.191.20	21	0.0	4,671,460	FTP																																
51.3.200.12	130.34.191.20	445	99.8	531,889,793	CIFS																																

**Verify Performance**

Step 3 Verify traffic optimization.



Select **Monitor** and view the graphs for details on traffic or services that are being intercepted.

**Bandwidth Usage by Service:** Displays the top four services that use the most bandwidth, and aggregates all other traffic in to the label **Other**. The gray area, *Transmitted*, is the rate of server data that was transmitted over the WAN after optimization. The yellow area, *Savings*, represents the rate of traffic that didn't need to traverse the WAN due to optimization (client-server). The blue area, *Bypassed*, is the rate of traffic that was not controlled by the ProxySG VA. Transfer, Reduction, Gain statistics are also displayed.

**Bandwidth Usage Overview:** Displays a pie graph of the four top bandwidth-using services and aggregates all other intercepted traffic into a slice labeled Other. The overall statistics for the time period aggregates the traffic and calculates the acceleration benefit during the graphing time period.

**Optimized Throughput:** Displays a bar graph to compare the transmission rate of optimized traffic versus unoptimized traffic for a specific time period. The report calculates average bandwidth reduction, peak reduction, and gain. You can also include bypassed traffic in this graph.

## Power Off the ProxySG VA

You have completed initial configuration of the ProxySG VA; the appliance does not require rebooting or shutting down at this time.

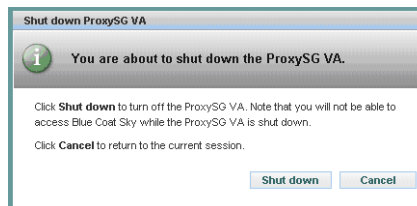
In the future, you will need to shut down the system before performing the following tasks:

- Backing up the system
- Upgrading the server software
- Taking the server offline for maintenance
- Migrating the ProxySG VA to a different server
- Installing additional or higher-capacity drives on the ESX/i host
- Adding a serial port to the ProxySG VA
- Upgrading the virtual appliance model

### Shutting Down the ProxySG VA

Step 1 Save all configuration changes and shut down.

- a. In the Blue Coat Sky **Configure** tab, click **Commit all** to save all configuration changes.
- b. Click **Shut down**, a link on the right side of the banner. The Shut Down ProxySG VA dialog box displays.



- c. Click **Shut down** to confirm.

To power the system back on, you need to use your VMware client. See "[Power on the ProxySG VA](#)" on page 3-22.

## Next Steps

You have completed configuring and verifying your initial configuration on the ProxySG VA. For further information, use the context-sensitive online help in Blue Coat Sky or the Management Console. You can also refer to the following documents at:

<https://bto.bluecoat.com/documentation/pubs/ProxySG>

- ❑ *Acceleration Deployment Guide* for deployment information.
- ❑ *ProxySG Administration Guide* for complete product documentation on SGOS.
- ❑ *WCCP Reference Guide* for comprehensive information on WCCP concepts and configuration tasks.





# Appendix A: WCCP Reference

---

---


## About Service Group States

The ProxySG VA maintains state information on the configured service groups. The following table lists the state of a service group and helps you interpret the status message. Use this table to confirm that service group is configured properly or to troubleshoot the service group error message.

State	Description
Assignment mismatch	The router does not support the assignment type (hash or mask) that is configured for the service group.
Bad router id	The home-router specified in the service group configuration does not match the actual router ID.
Bad router view	The ProxySG VA listed in the service group does not match the one specified on the router.
Capability mismatch	The WCCP configuration includes capabilities that the router does not support.
Initializing	WCCP was just enabled and the ProxySG VA is getting ready to send out its first <code>HERE_I_AM</code> message.
Interface link is down	The ProxySG VA cannot send the <code>HERE_I_AM</code> message because the interface link is down.
Negotiating assignment	The ProxySG VA received the <code>I_SEE_YOU</code> message from the router but has not yet negotiated the service group capabilities.
Negotiating membership	The ProxySG VA sent the <code>HERE_I_AM</code> message and is waiting for an <code>I_SEE_YOU</code> message from the router.
Packet forwarding mismatch	The router does not support the forwarding method (GRE or L2) that is configured for the service group.
Packet return mismatch	The router does not support the return method (GRE or L2) that is configured for the service group.
Ready	The service group formed successfully and the ProxySG VA sent the <code>REDIRECT_ASSIGN</code> message to the router with the hash or mask values table.
Service group mismatch	The router and the ProxySG VA have a mismatch in port, protocol, priority, and/or other service flags.
Security mismatch	The service group passwords on the router and the ProxySG VA do not match.


## Worksheet for Configuring WCCP (Blank)

Use this worksheet for planning your WCCP deployment.

 <b>WCCP CONFIGURATION WORKSHEET (BLANK)</b>			
<b>Service Group ID:</b>			
<b>Router Configuration for Service Group</b>			
Router Name:		ProxySG VA-Facing Interface:	
Interfaces to Redirect:		Redirect Direction	<input type="checkbox"/> In <input type="checkbox"/> Out
<b>ProxySG VA Configuration for Service Group</b>			
ProxySG VA Interface:	1:0 (LAN to WAN)	Protocol: 6 (TCP)	
Ports to Redirect: <input type="checkbox"/> All <input type="checkbox"/> HTTP (80) <input type="checkbox"/> HTTPS (443) <input type="checkbox"/> CIFS (139, 445) <input type="checkbox"/> RTSP (554) <input type="checkbox"/> Other			
Priority (0-255):	0	Home Router IP Address:	
Forwarding/Return Method:	<input type="checkbox"/> GRE/GRE <input type="checkbox"/> L2/L2 <input type="checkbox"/> L2/GRE	Assignment Type:	<input type="checkbox"/> Hash <input type="checkbox"/> Mask
Field to use in Assignment Type Algorithm:		<input type="checkbox"/> Source IP <input type="checkbox"/> Dest IP <input type="checkbox"/> Source Port <input type="checkbox"/> Dest Port	
Did you check whether settings are compatible with router hardware/software?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Service Group ID:</b>			
<b>Router Configuration for Service Group</b>			
Router Name:		ProxySG VA-Facing Interface:	
Interfaces to Redirect:		Redirect Direction	<input type="checkbox"/> In <input type="checkbox"/> Out
<b>ProxySG VA Configuration for Service Group</b>			
ProxySG VA Interface:		Protocol:	
Ports to Redirect: <input type="checkbox"/> All <input type="checkbox"/> HTTP (80) <input type="checkbox"/> HTTPS (443) <input type="checkbox"/> CIFS (139, 445) <input type="checkbox"/> RTSP (554) <input type="checkbox"/> Other			
Priority (0-255):		Home Router IP Address:	
Forwarding/Return Method:	<input type="checkbox"/> GRE/GRE <input type="checkbox"/> L2/L2 <input type="checkbox"/> L2/GRE	Assignment Type:	<input type="checkbox"/> Hash <input type="checkbox"/> Mask
Field to use in Assignment Type Algorithm:		<input type="checkbox"/> Source IP <input type="checkbox"/> Dest IP <input type="checkbox"/> Source Port <input type="checkbox"/> Dest Port	
Did you check whether settings are compatible with router hardware/software?			<input type="checkbox"/> Yes <input type="checkbox"/> No

## Worksheet for Configuring WCCP (Sample)

This sample reference worksheet has been filled in for your reference.

 <b>WCCP CONFIGURATION WORKSHEET (SAMPLE)</b>			
<b>Service Group ID: 10</b>			
<b>Router Configuration for Service Group</b>			
Router Name:	ABC	ProxySG VA-Facing Interface:	GigE 0/0
Interfaces to Redirect:	GigE 0/1	Redirect Direction	<input checked="" type="checkbox"/> In <input type="checkbox"/> Out
<b>ProxySG VA Configuration for Service Group</b>			
ProxySG VA Interface:	1:0 (LAN to WAN)	Protocol:	TCP
Ports to Redirect: <input checked="" type="checkbox"/> All <input type="checkbox"/> HTTP (80) <input type="checkbox"/> HTTPS (443) <input type="checkbox"/> CIFS (139, 445) <input type="checkbox"/> RTSP (554) <input type="checkbox"/> Other			
Priority (0-255):	1	Home Router IP Address:	192.168.16.1
Forwarding/Return Method:	<input checked="" type="checkbox"/> GRE/GRE <input type="checkbox"/> L2/L2 <input type="checkbox"/> L2/GRE	Assignment Type:	<input checked="" type="checkbox"/> Hash <input type="checkbox"/> Mask
Field to use in Assignment Type Algorithm:		<input type="checkbox"/> Source IP <input checked="" type="checkbox"/> Dest IP <input type="checkbox"/> Source Port <input type="checkbox"/> Dest Port	
Did you check whether settings are compatible with router hardware/software?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Service Group ID: 11</b>			
<b>Router Configuration for Service Group</b>			
Router Name:	ABC	ProxySG VA-Facing Interface:	GigE 0/0
Interfaces to Redirect:	GigE 0/2	Redirect Direction	<input checked="" type="checkbox"/> In <input type="checkbox"/> Out
<b>ProxySG VA Configuration for Service Group</b>			
ProxySG VA Interface:	0:0 (WAN to LAN)	Protocol:	TCP
Ports to Redirect: <input checked="" type="checkbox"/> All <input type="checkbox"/> HTTP (80) <input type="checkbox"/> HTTPS (443) <input type="checkbox"/> CIFS (139, 445) <input type="checkbox"/> RTSP (554) <input type="checkbox"/> Other			
Priority (0-255):	1	Home Router IP Address:	192.168.16.1
Forwarding/Return Method:	<input checked="" type="checkbox"/> GRE/GRE <input type="checkbox"/> L2/L2 <input type="checkbox"/> L2/GRE	Assignment Type:	<input checked="" type="checkbox"/> Hash <input type="checkbox"/> Mask
Field to use in Assignment Type Algorithm:		<input checked="" type="checkbox"/> Source IP <input type="checkbox"/> Dest IP <input type="checkbox"/> Source Port <input type="checkbox"/> Dest Port	
Did you check whether settings are compatible with router hardware/software?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## Worksheet for Configuring WCCP (Sample)

# Appendix B: Upgrading the ProxySG VA

---

You can upgrade the SGOS software on your ProxySG VA when new SGOS versions become available. In addition, if you need your ProxySG VA to accelerate traffic for more users, you can upgrade the VA model.

Refer to the following sections:

- [Upgrading to a New SGOS Release](#)
- [Upgrading the ProxySG VA Model](#)

## Upgrading to a New SGOS Release

As new SGOS versions are released, you might choose to upgrade your ProxySG VA. Keep the following in mind:

- You must have a valid, unexpired license to upgrade your virtual appliance software. If your ProxySG VA license has expired, you need to renew your subscription with Blue Coat Systems before you can upgrade the software.
- The first SGOS version that supports the virtual appliance is 5.5.2.1. You can only upgrade to versions higher than 5.5.2.1.
- The procedure for upgrading a virtual appliance is the same as for upgrading a physical appliance. See the *Blue Coat SGOS 5.5.x Release Notes* for details.
- You download the image for the ESX Server, instead of a hardware model (such as 810).
- All ProxySG VA models use the same image; in other words, there are not separate image files for each ProxySG VA model (VA-5, VA-10, and so forth).
- When upgrading the software, you do not need to download and install a Virtual Appliance Package (VAP). VAPs are used for initial configuration only.

## Upgrading the ProxySG VA Model

If you need your ProxySG VA to accelerate traffic for more users, you can upgrade the VA model. For example, you can upgrade from a ProxySG VA-5 (5-10 users) to a ProxySG VA-10 (10-50 users). Please contact Blue Coat Systems if you would like to upgrade the model of your ProxySG VA.

