Blue Coat® Systems ProxySG™

Configuration and Management Guide

Volume 1: Introduction

Version SGOS 5.1.3

Contact Information

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

http://www.bluecoat.com/support/index.html

bcs.info@bluecoat.com
http://www.bluecoat.com

For concerns or feedback about the documentation: documentation@bluecoat.com

Document Number: 231-02837
Document Revision: SGOS 5.x 09/2006

Contents

Chapter 3: Volume Organization

The documentation suite for the *Blue Coat ProxySG Configuration and Management Guide* is composed of 12 volumes, which includes the *Blue Coat ProxySG Content Policy Language Guide* (Volume 11) and *Blue Coat ProxySG Command Line Reference* (Volume 12).

The *Blue Coat ProxySG Configuration and Management Guide* has been divided into separate volumes to improve accessibility and readability, and to allow like topics to be discussed more thoroughly. For example, the proxies chapter has been converted to *Volume 3: Proxies and Proxy Services*, and each proxy has its own chapter. This allows a solutions-based discussion for each proxy.

Nearly every volume contains a glossary. *Volume 11: ProxySG Content Policy Language Guide* has a separate, CPL-specific glossary. *Volume 12: ProxySG Command Line Reference* has no glossary.

Table 3-1. Volume Organization

Volume Title	Description
Volume 1: Introduction to the ProxySG	Volume 1 contains the table of contents for the entire documentation suite. It also contains a task list of pointers to locations for common tasks.
Volume 2: Getting Started	Contained in this book is everything you need to get started: • how to log in to the Proxy*SG* CLI and Web-based Management Console • how to change the administrator username, password, and privileged-mode password;. • licensing • how to set the Proxy*SG* name and system time, configure the network adapter, load balance, and specify DNS servers.
Volume 3: Proxies and Proxy Servicess	Volume 3 describes the proxies and proxy services available. Separate chapters describe each of the various kinds of proxies.
Volume 4: Web Communication Proxies	Application proxies, such as IM and streaming, are discussed in this volume.

Table 3-1. Volume Organization (Continued)

Volume Title	Description
Volume 5: Securing the ProxySG	Enabling and maintaining security on the Proxy*SG* is discussed in this volume. Blue Coat supports a number of kinds of authentication, discussed here: LDAP, IWA, RADIUS, Local, Certificate (which allows you to authenticate using certificates), policy substitution, COREid, Netegrity, and Sequence (which allows you to authenticate using multiple authentication servers). Also discussed in this volume is the Proxy*SG* BCAAA agent.
Volume 6: Advanced Networking	Topics discussed in this volume are networkings tasks: setting failover, TCP-IP, attack detection, WCCP, and the Routing Information Protocol (RIP). Commands supported for the RIP configuration text file are discussed in the appendix. Health Checks, forwarding, and managing bandwidth are also discussed in this volume.
Volume 7: VPM and Advanced Policy	Discussed in this volume are: • Four policy files are used to manage policy: Central, Local, Visual Policy Manager, and Forwarding. T. • Pop-up ad blocking, managing active content, and creating exceptions. • This volume also contains a reference guide and several tutorials for using the Visual Policy Manager.
Volume 8: Managing Content	This volume discusses how to configure and use the Proxy*SG*'s content filtering capabilities, as well as configuring and using content filtering vendors to work with the Proxy*SG*. External Services (ICAP and Websense off-box) are also found in this volume.
Volume 9: Access Logging	Log formats, upload clients, upload schedules, and protocols are discussed in this volume. In the Access Log Formats appendix, ELFF, SQUID, NCSA/Common, and custom logs are discussed.
Volume 10: Managing the ProxySG	This volume discusses upgrading the system and configuring event logs, SMNP, STMP, heartbeats, and core images, as well as diagnostics. Health Monitoring, new in this release, is discussed in this volume. The statistics chapter discusses viewing various kinds of statistics—system usage, efficiency, resources, and logs of all kinds.

Table 3-1. Volume Organization (Continued)

Volume Title	Description
Volume 11: ProxySG Content Policy Language Guide	This volume discusses using Content Policy Language (CPL) to create and manage policies on the Proxy*SG*.
Volume 12: ProxySG Command Line Reference	This is a reference, in man-page format, of all the CLI commands supported by SGOS.

Note: The *Blue Coat ProxySG Configuration and Management Guide* suite and the *online help* contain the same information but are not identical. For the latest information, refer to the *Blue Coat ProxySG Configuration and Management Guide* documentation suite.

Related Blue Coat Documentation

- *Blue Coat 200 Series Installation Guide*
- *Blue Coat SG 410 Installation Guide*
- *Blue Coat SG810 Installation Guide*
- *Blue Coat SG8100 Installation Guide*

Document Conventions

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

Table 3-2. Document Conventions

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

Chapter 4: Master Table of Contents

This chapter contains the table of contents for each of the eleven remaining books in the 12 volume *Blue Coat ProxySG Configuration and Management Guide* Suite. The table of contents for this book, *Volume 1: Introduction to the ProxySG*, is in the front of this book, following the cover.

Volume 2: Getting Started

Volume 3: Proxies and Proxy Services

Volume 4: Web Communication Proxies

Volume 5: Securing the ProxySG

Contents

Contact Information

Volume 6: Advanced Networking

Volume 7: VPM and Advanced Policy

Contents

Volume 8: Managing Content

Volume 9: Access Logging

Volume 10: Managing the ProxySG

Volume 11: ProxySG Content Policy Language Guide

Chapter 4: Property Reference

Chapter 5: Action Reference

Volume 12: ProxySG Command Line Reference

Chapter 3: Privileged Mode Configure Commands

Chapter 5: Customizing the ProxySG

The top-level tasks you need to carry out to customize the Proxy*SG* to your environment are:

This chapter also includes a task list that provides pointers in the documentation.

Placing the ProxySG in a Network

To install a Proxy*SG* into a network, the network must be set up to present the Proxy*SG* with traffic to control.

- Explicit Proxy: All the Proxy*SG* needs is IP address connectivity to the network; browsers must be configured to point to the Proxy*SG* through a PAC file.
- Transparent Proxy: The majority of networks use transparent proxy. Transparent proxying occurs when the Proxy*SG* receives traffic destined for Origin Content Servers (OCS) and terminates the traffic, then initiates the same request to the OCS.
  - Bridging: With this configuration, you do not have to make router or L4 switch configuration changes. The Proxy*SG* is placed inline on a segment of the network where all outgoing traffic flows; one Ethernet interface is connected to the internal network, the other Ethernet interface is connected to the Internet. The Proxy*SG* terminates all traffic on the service ports in which the proxy has been configured and sends the request to the outside OCS. All other traffic is bridged between the two Ethernet interfaces.

    Note that this configuration, without using policy controls, can lead to an *open* proxy. An open proxy results when traffic is allowed on the outside (Internet) interface because users are accessing internal Web servers behind the proxy.
  - WCCP: If the site has Cisco routers, WCCP can be used to direct certain TCP/IP connections to the Proxy*SG*. TCP/IP ports to forward to the Proxy*SG* are communicated between Proxy*SG* appliances and the Cisco routers. Typically, this is enforced on the outgoing interface on the Cisco router.
  - L4 switching: Similar to WCCP, the L4 switch is configured to forward traffic for specific TCP/IP ports to the attached Proxy*SG*.

Initial Setup

The Proxy*SG* must be initially configured before it operates on a network. This can be done through the front panel (if applicable) or the serial console. The initial setup sets not only the IP address, but enable and console passwords. Once completed, the Proxy*SG* can be managed through the serial console, SSH, or HTTPS at port 8082. Information on setting up the Proxy*SG* is in the Quick Start Guide and Installation Guide for your platform.

Simple Policy

The default policy on new Proxy*SG* appliances is to deny everything. To test initial setup, you can create a policy of ALLOW, along with changing access logging to log to the default logs. If the Proxy*SG* is correctly set up, Web browsers can surf the Internet and all transactions are logged. Once the Proxy*SG* setup is verified, the policy should again be set to DENY, unless otherwise required.

If the policy is set to allow everything and a bridged configuration is used, clients can send a connection request for any port, including e-mail, using the proxy to send spam. This is called an *open* proxy and usually results in performance slowdowns (among other things).

To prevent the Proxy*SG* from becoming an open proxy in a bridged configuration if you must use an ALLOW configuration, add the following policy to the end of the local policy:

```
define subnet Trusted_Clients
  10.0.0.0/8
end subnet

define subnet Trusted_Servers
  216.52.23.0/24
end subnet

<Proxy>
  client.address = Trusted_Clients OK ; Policy below applies
  proxy.address = Trusted_Servers OK  ; Policy below applies
  FORCE_DENY ; Force a denial for everything else

<Proxy>
  ; Add other allow or deny rules here
  ; Example: Allow all traffic not denied above
  ALLOW
```

Implementing Policies

Once the basic system is set up, you need to decide which controls—policies— to put in place. Typically, the following are configured on the system:

- Proxy caching (HTTP, FTP, Streaming)
- Authentication/single sign-on
- Access control policy
- Content filtering
- Web anti-virus

Implementing policies is a two-step process:

- Configure the feature; for example, choose Blue Coat Web Filter (BCWF) or another content filtering vendor, enable it, and schedule downloads of the database.

- Create policy through the graphical Visual Policy Manager (VPM) or through the Content Policy Language (CPL).

Managing the ProxySG

Once the configuration and policy on the Proxy*SG* are set, you should know how to evaluate the current operating state. This can include reviewing event log messages, utilizing SNMP, or diagnostics such as CPU utilization.

- Archive a configuration file: *Volume 2: Getting Started*
- Upgrade the system: *Volume 10: Managing the ProxySG*
- Set up event logging: *Volume 10: Managing the ProxySG*
- Configure SNMP: *Volume 10: Managing the ProxySG*
- Understand Diagnostics: *Volume 10: Managing the ProxySG*

Managing the ProxyAV

The Proxy*SG* with Proxy*AV*™ integration is a high-performance Web anti-virus (AV) solution. For most enterprises, Web applications and traffic are mission-critical, representing 90% of the total Internet traffic.

By deploying the Proxy*SG*/Proxy*AV* solution, you gain performance and scalability (up to 250+ Mbps HTTP throughput), along with Web content control.

For information on managing the Proxy*AV*, refer to the *Blue Coat ProxyAV Configuration and Management Guide*.

Troubleshooting

Use the access logs, event logs, and packet captures to check connections and view traffic passing through the Proxy*SG*. Use policy tracing to troubleshoot policy. Note that policy tracing is global; that is, it records every policy-related event in every layer. Turning on policy tracing of any kind is expensive in terms of system resource usage and slows down the Proxy*SG*'s ability to handle traffic.

- Policy tracing: For information on using policy tracing, refer to *Volume 7: VPM and Advanced Policy*.
- Access Logs: For information on configuring and using access logs, refer to *Volume 9: Access Logging*.
- Event logs: For information on using event logs, refer to *Volume 10: Managing the ProxySG*.
- Packet capture: For information on using the PCAP utility, refer to *Volume 10: Managing the ProxySG*.

Task Tables

The tables below refer to the sections in the manuals that describe the top-level tasks to customize the Proxy*SG* to your environment. The tables are listed in alphabetical order (for example, *access logging*, *authentication*, *bridging*, *caching*, and so on).

Table 5.1: Access Logging

Task	Reference
Configure access logging with • Blue Coat Reporter • SurfControl Reporter • Websense Reporter	• Blue Coat Reporter: Chapter 3, "Creating the First Profile," *Blue Coat Reporter Configuration and Management Guide* • SurfControl Reporter: *Volume 8: Managing Content* • Websense Reporter: *Volume 8: Managing Content*

Table 5.2: Anti-Virus

Task	Reference
Block Web viruses using Proxy*AV*	*Volume 8: Managing Content*
Set up anti-virus filtering	*Blue Coat ProxyAV Configuration and Management Guide*

Table 5.3: Authentication

Task	Reference
Achieve single sign-on with IWA (formerly NTLM)	*Volume 5: Securing the ProxySG*
Select the right authentication mode	*Volume 5: Securing the ProxySG*
Install the Blue Coat authentication/ authorization agent to work with IWA (formerly NTLM)	*Volume 5: Securing the ProxySG*
Configure authentication to work with an existing authentication service	*Volume 5: Securing the ProxySG*
Set up authentication schemes and use them in policy	*Volume 5: Securing the ProxySG*

Table 5.4: Bridging

Task	Reference
Configure bridging (hardware or software)	*Volume 2: Getting Started*
Allow those from outside a bridged deployment to get to internal servers	*Volume 3: Proxies and Proxy Services*

Table 5.5: Caching

Task	Reference
Disable caching	*Volume 3: Proxies and Proxy Services*

Table 5.6: HTTP

Task	Reference
Redirect HTTP with WCCP	*Volume 3: Proxies and Proxy Services*

Table 5.7: HTTPS

Task	Reference
Create a transparent HTTPS service	*Volume 3: Proxies and Proxy Services*

Table 5.8: Instant Messaging

Task	Reference
Allow, block, and control the supported Instant Messaging clients	*Volume 4: Web Communication Proxies*

Table 5.9: Management

Task	Reference
Get the Management Console to work	*Volume 2: Getting Started*

Manage the System:
• License the system
• Back up the configuration
• View statistics
  ◎ Resources
  ◎ Efficiency
• SNMP monitoring
	• *Volume 2: Getting Started*
	• *Volume 2: Getting Started*
	• *Volume 10: Managing the ProxySG*
	• *Volume 10: Managing the ProxySG*
	• *Volume 10: Managing the ProxySG*
	• *Volume 10: Managing the ProxySG*

Table 5.10: Policy

Task	Reference
Set up authentication schemes and use them in policy	*Volume 5: Securing the ProxySG*
Limit network access and configuring compliance pages	*Volume 5: Securing the ProxySG*
Block unwanted content	*Volume 5: Securing the ProxySG*

Table 5.10: Policy

Change policy default	*Volume 7: VPM and Advanced Policy*
Write policy using the Visual Policy Manager (VPM)	*Volume 7: VPM and Advanced Policy*
Write policy using the Content Policy Language (CPL)	*Blue Coat ProxySG Content Policy Language Guide*

Table 5.11: Proxies

Task	Reference
Determine the best type of proxy for the environment	*Volume 3: Proxies and Proxy Services*
Set up HTTPS Reverse Proxy	*Volume 3: Proxies and Proxy Services*
Get traffic to the proxy	*Volume 3: Proxies and Proxy Services*

Table 5.12: Reporter, Blue Coat

Task	Reference
Make Blue Coat Reporter work with access logging	Blue Coat Reporter: Chapter 3, "Creating the First Profile," *Blue Coat Reporter Configuration and Management Guide*
Use Scheduler to set up report generation	Chapter 3, "Using Scheduler," in the *Blue Coat Reporter Configuration and Management Guide*
Generate specific reports for specific people	*Blue Coat Reporter Configuration and Management Guide*

Table 5.13: Reporter, SurfControl

Task	Reference
Configure SurfControl Reporter	*Volume 8: Managing Content*

Table 5.14: Reporter, Websense

Task	Reference
Configure Websense Reporter	*Volume 8: Managing Content*

Table 5.15: Services

Task	Reference
Create a port service	*Volume 3: Proxies and Proxy Services*

Table 5.16: Streaming

Task	Reference
Control streaming protocols	*Volume 4: Web Communication Proxies*

Table 5.17: WCCP

Task	Reference
Configure WCCP for multiple ports	*Volume 6: Advanced Networking*
Redirect HTTP with WCCP	*Volume 6: Advanced Networking*
Configure the home-router IP	*Volume 6: Advanced Networking*
Configure multiple home-routers	*Volume 6: Advanced Networking*
Configure a multicast address as the proxy's home router	*Volume 6: Advanced Networking*

Third Party Copyright Notices

Blue Coat Systems, Inc. utilizes third party software from various sources. Portions of this software are copyrighted by their respective owners as indicated in the copyright notices below.

The following lists the copyright notices for:

BPF

Redistribution and use in source and binary forms, with or without modification, are permitted provided that: (1) source code distributions retain the above copyright notice and this paragraph in its entirety, (2) distributions including binary code include the above copyright notice and this paragraph in its entirety in the documentation or other materials provided with the distribution, and (3) all advertising materials mentioning features or use of this software display the following acknowledgement:

This product includes software developed by the University of California, Lawrence Berkeley Laboratory and its contributors.

Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DES

Software DES functions written 12 Dec 1986 by Phil Karn, KA9Q; large sections adapted from the 1977 public-domain program by Jim Gillogly.

EXPAT

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Finjan Software

Flowerfire

ISODE

ISODE 8.0 NOTICE

Acquisition, use, and distribution of this module and related materials are subject to the restrictions of a license agreement. Consult the Preface in the User's Manual for the full terms of this agreement.

4BSD/ISODE SMP NOTICE

Acquisition, use, and distribution of this module and related materials are subject to the restrictions given in the file SMP-READ-ME.

UNIX is a registered trademark in the US and other countries, licensed exclusively through X/Open Company Ltd.

MD5

RSA Data Security, Inc. MD5 Message-Digest Algorithm

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

THE BEER-WARE LICENSE" (Revision 42):

<phk@FreeBSD.org <mailto:phk@FreeBSD.org>> wrote this file. As long as you retain this notice you can do whatever you want with this stuff. If we meet some day, and you think this stuff is worth it, you can buy me a beer in return. Poul-Henning Kamp

Microsoft Windows Media Streaming

OpenLDAP

http://www.openldap.org/software/release/license.html

The OpenLDAP Public License Version 2.7, 7 September 2001

Redistribution and use of this software and associated documentation ("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain copyright statements and notices,

2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution, and

3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

OpenSSH

Copyright (c) 1995 Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland. All rights reserved

This file is part of the OpenSSH software.

The licences which components of this software fall under are as follows. First, we will summarize and say that all components are under a BSD licence, or a licence more free than that.

OpenSSH contains no GPL code.

1) As far as I am concerned, the code I have written for this software can be used freely for any purpose. Any derived versions of this software must be clearly marked as such, and if the derived work is incompatible with the protocol description in the RFC file, it must be called by a name other than "ssh" or "Secure Shell".

[Tatu continues]

However, I am not implying to give any licenses to any patents or copyrights held by third parties, and the software includes parts that are not under my direct control. As far as I know, all included source code is used in accordance with the relevant license agreements and can be used freely for any purpose (the GNU license being the most restrictive); see below for details.

[However, none of that term is relevant at this point in time. All of these restrictively licenced software components which he talks about have been removed from OpenSSH, i.e.,

- RSA is no longer included, found in the OpenSSL library

- IDEA is no longer included, its use is deprecated

- DES is now external, in the OpenSSL library

- GMP is no longer used, and instead we call BN code from OpenSSL

- Zlib is now external, in a library

- The make-ssh-known-hosts script is no longer included

- TSS has been removed

- MD5 is now external, in the OpenSSL library

- RC4 support has been replaced with ARC4 support from OpenSSL

- Blowfish is now external, in the OpenSSL library

[The licence continues]

Note that any information and cryptographic algorithms used in this software are publicly available on the Internet and at any major bookstore, scientific library, and patent office worldwide. More information can be found e.g. at "http://www.cs.hut.fi/crypto".

The legal status of this program is some combination of all these permissions and restrictions. Use only at your own responsibility. You will be responsible for any legal consequences yourself; I am not making any claims whether possessing or using this is legal or not in your country, and I am not taking any responsibility on your behalf.

NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

2) The 32-bit CRC compensation attack detector in deattack.c was contributed by CORE SDI S.A. under a BSD-style license.

Cryptographic attack detector for ssh - source code

Copyright (c) 1998 CORE SDI S.A., Buenos Aires, Argentina. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that this copyright notice is retained. THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES ARE DISCLAIMED. IN NO EVENT SHALL CORE SDI S.A. BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR MISUSE OF THIS SOFTWARE.

Ariel Futoransky <futo@core-sdi.com> <http://www.core-sdi.com>

3) ssh-keygen was contributed by David Mazieres under a BSD-style license.

Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>. Modification and redistribution in source and binary forms is permitted provided that due credit is given to the author and the OpenBSD project by leaving this copyright notice intact.

4) The Rijndael implementation by Vincent Rijmen, Antoon Bosselaers and Paulo Barreto is in the public domain and distributed with the following license:

@version 3.0 (December 2000)

Optimised ANSI C code for the Rijndael cipher (now AES)

@author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>

@author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>

@author Paulo Barreto <paulo.barreto@terra.com.br>

This code is hereby placed in the public domain.

THIS SOFTWARE IS PROVIDED BY THE AUTHORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

5) One component of the ssh source code is under a 3-clause BSD license, held by the University of California, since we pulled these parts from original Berkeley code.

Copyright (c) 1983, 1990, 1992, 1993, 1995

The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

6) Remaining components of the software are provided under a standard 2-term BSD licence with the following names as copyright holders:

Markus Friedl
Theo de Raadt
Niels Provos
Dug Song
Aaron Campbell
Damien Miller
Kevin Steves
Daniel Kouril
Wesley Griffin
Per Allansson
Nils Nordman
Simon Wilkinson

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

OpenSSL

Copyright (c) 1995-1998 Eric Young (eay@cryptsoft.com). All rights reserved.

http://www.openssl.org/about/

http://www.openssl.org/about/

OpenSSL is based on the excellent SSLeay library developed by Eric A. Young <mailto:eay@cryptsoft.com> and Tim J. Hudson <mailto:tjh@cryptsoft.com>.

The OpenSSL toolkit is licensed under a Apache-style license which basically means that you are free to get and use it for commercial and non-commercial purposes.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are adhered to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed. If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)" The word 'cryptographic' can be left out if the routines from the library being used are not cryptographic related :-).

4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The license and distribution terms for any publicly available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution license [including the GNU Public License.]

Copyright (c) 1998-2002 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. All advertising materials mentioning features or use of this software must display the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"

4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.

5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.

6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

PCRE

Copyright (c) 1997-2001 University of Cambridge

University of Cambridge Computing Service, Cambridge, England. Phone: +44 1223 334714.

Written by: Philip Hazel <ph10@cam.ac.uk>

Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. This software is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

2. Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/

PHAOS SSLava and SSLavaThin

Copyright (c) 1996-2003 Phaos Technology Corporation. All Rights Reserved.

The software contains commercially valuable proprietary products of Phaos which have been secretly developed by Phaos, the design and development of which have involved expenditure of substantial amounts of money and the use of skilled development experts over substantial periods of time. The software and any portions or copies thereof shall at all times remain the property of Phaos.

PHAOS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE SOFTWARE, OR ITS USE AND OPERATION ALONE OR IN COMBINATION WITH ANY OTHER SOFTWARE.

PHAOS SHALL NOT BE LIABLE TO THE OTHER OR ANY OTHER PERSON CLAIMING DAMAGES AS A RESULT OF THE USE OF ANY PRODUCT OR SOFTWARE FOR ANY DAMAGES WHATSOEVER. IN NO EVENT WILL PHAOS BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF ADVISED OF THE POSSIBLITY OF SUCH DAMAGES.

RealSystem

The RealNetworks® RealProxy™ Server is included under license from RealNetworks, Inc. Copyright 1996-1999, RealNetworks, Inc. All rights reserved.

SNMP

Copyright (C) 1992-2001 by SNMP Research, Incorporated.

This software is furnished under a license and may be used and copied only in accordance with the terms of such license and with the inclusion of the above copyright notice. This software or any other copies thereof may not be provided or otherwise made available to any other person. No title to and ownership of the software is hereby transferred. The information in this software is subject to change without notice and should not be construed as a commitment by SNMP Research, Incorporated.

Restricted Rights Legend:

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013; subparagraphs (c)(4) and (d) of the Commercial Computer Software-Restricted Rights Clause, FAR 52.227-19; and in similar clauses in the NASA FAR Supplement and other corresponding governmental regulations.

PROPRIETARY NOTICE

This software is an unpublished work subject to a confidentiality agreement and is protected by copyright and trade secret law. Unauthorized copying, redistribution or other use of this work is prohibited. The above notice of copyright on this source code product does not indicate any actual or intended publication of such source code.

STLport

Copyright (c) 1999, 2000 Boris Fomitchev

This material is provided "as is", with absolutely no warranty expressed or implied. Any use is at your own risk.
Permission to use or copy this software for any purpose is hereby granted without fee, provided the above notices are retained on all copies. Permission to modify the code and to distribute modified code is granted, provided the above notices are retained, and a notice that the code was modified is included with the above copyright notice.

The code has been modified.

Copyright (c) 1994 Hewlett-Packard Company

Copyright (c) 1996-1999 Silicon Graphics Computer Systems, Inc.

Copyright (c) 1997 Moscow Center for SPARC Technology

Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Hewlett-Packard Company makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Silicon Graphics makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Moscow Center for SPARC Technology makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

SmartFilter

Copyright (c) 2003 Secure Computing Corporation. All rights reserved.

SurfControl

Copyright (c) 2003 SurfControl, Inc. All rights reserved.

Symantec AntiVirus Scan Engine

Copyright (c) 2003 Symantec Corporation. All rights reserved.

TCPIP

Some of the files in this project were derived from the 4.X BSD (Berkeley Software Distribution) source.

Their copyright header follows:

Copyright (c) 1982, 1986, 1988, 1990, 1993, 1994, 1995

The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed by the University of California, Berkeley and its contributors.

4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Trend Micro

zlib

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.