

WatchGuard® High Availability Guide

High Availability for WFS 6.0



Notice to Users

Information in this guide is subject to change without notice. Companies, names, and data used in examples herein are fictitious unless otherwise noted. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of WatchGuard Technologies, Inc.

Copyright, Trademark, and Patent Information

Copyright© 1998 - 2002 WatchGuard Technologies, Inc. All rights reserved.

Firebox, Firebox 1000, Firebox 2500, Firebox 4500, Firebox II, Firebox II Plus, Firebox II FastVPN, Firebox III, Firebox SOHO, Firebox SOHO|tc, Firebox V100, Firebox V80, Firebox V60, Firebox V10, LiveSecurity, RapidStream, RapidCore, WatchGuard, WatchGuard Technologies, Inc., AppLock, AppLock/Web, Designing peace of mind, DVCP technology, Enforcer/MUVPN, FireChip, HackAdmin, HostWatch, LockSolid, RapidCare, SchoolMate, ServerLock, ServiceWatch, Smart Security, Simply Done., SpamScreen, Vcontroller are either registered trademarks or trademarks of WatchGuard Technologies, Inc. in the United States and/or other countries.

© Hi/fn, Inc. 1993, including one or more U.S. Patents: 4701745, 5016009, 5126739, and 5146221 and other patents pending.

Microsoft®, Internet Explorer®, Windows® 95, Windows® 98, Windows NT® and Windows® 2000 are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Netscape and Netscape Navigator are registered trademarks of Netscape Communications Corporation in the United States and other countries.

RC2 Symmetric Block Cipher, RC4 Symmetric Stream Cipher, RC5 Symmetric Block Cipher, BSAFE, TPEM, RSA Public Key Cryptosystem, MD, MD2, MD4, and MD5 are either trademarks or registered trademarks of RSA Data Security, Inc. Certain materials herein are Copyright © 1992-1999 RSA Data Security, Inc. All rights reserved.

RealNetworks, RealAudio, and RealVideo are either a registered trademark or trademark of RealNetworks, Inc. in the United States and/or other countries.

Java and all Java-based marks are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. All right reserved.

© 1995-1998 Eric Young (eay@cryptsoft). All rights reserved.

© 1998-2000 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).

© 1995-1998 Eric Young (eay@cryptsoft.com)

All rights reserved.

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 aheared 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 licence 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 licence [including the GNU Public Licence.]

The mod_ssl package falls under the Open-Source Software label because it's distributed under a BSD-style license. The detailed license information follows.

Copyright (c) 1998-2001 Ralf S. Engelschall. 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 Ralf S. Engelschall <rse@engelschall.com> for use in the mod_ssl project (<http://www.modssl.org/>)."

4. The names "mod_ssl" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact rse@engelschall.com.

5. Products derived from this software may not be called "mod_ssl" nor may "mod_ssl" appear in their names without prior written permission of Ralf S. Engelschall.

6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by Ralf S. Engelschall <rse@engelschall.com> for use in the mod_ssl project (<http://www.modssl.org/>)."

THIS SOFTWARE IS PROVIDED BY RALF S. ENGELSCHALL ``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 RALF S. ENGELSCHALL OR HIS 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 Apache Software License, Version 1.1
Copyright (c) 2000 The Apache Software Foundation. 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. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>)." Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.
4. The names "Apache" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact apache@apache.org.
5. Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation.

THIS SOFTWARE IS PROVIDED ``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 APACHE SOFTWARE FOUNDATION 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 software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation. For more information on the Apache Software Foundation, please see <<http://www.apache.org/>>.

Portions of this software are based upon public domain software originally written at the National Center for Supercomputing Applications, University of Illinois, Urbana-Champaign.

All other trademarks or trade names mentioned herein, if any, are the property of their respective owners.
Part No:

WatchGuard Technologies, Inc.
High Availability Software
End-User License Agreement

IMPORTANT - READ CAREFULLY BEFORE ACCESSING WATCHGUARD SOFTWARE:

This High Availability End-User License Agreement ("AGREEMENT") is a legal agreement between you (either an individual or a single entity) and WatchGuard Technologies, Inc. ("WATCHGUARD") for the WATCHGUARD optional software product for the WatchGuard Firebox System you have purchased, which includes computer software components (whether installed separately on a computer workstation or on the WATCHGUARD hardware product) and may include associated media, printed materials, and on-line or electronic documentation, and any updates or modifications thereto, including those received through the WatchGuard LiveSecurity Service (or its equivalent), (the "OPTIONAL SOFTWARE PRODUCT"). WATCHGUARD is willing to license the OPTIONAL SOFTWARE PRODUCT to you only on the condition that you accept all of the terms contained in this Agreement. Please read this Agreement carefully. By installing, activating or using the OPTIONAL SOFTWARE PRODUCT you agree to be bound by the terms of this Agreement. If you do not agree to the terms of this AGREEMENT, WATCHGUARD will not license the

OPTIONAL SOFTWARE PRODUCT to you, and you will not have any rights in the OPTIONAL SOFTWARE PRODUCT. In that case, promptly return the OPTIONAL SOFTWARE PRODUCT/license key certificate, along with proof of payment, to the authorized dealer from whom you obtained the OPTIONAL SOFTWARE PRODUCT/license key certificate for a full refund of the price you paid.

1. Ownership and License. The OPTIONAL SOFTWARE PRODUCT is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. This is a license agreement and NOT an agreement for sale. All title and copyrights in and to the OPTIONAL SOFTWARE PRODUCT (including but not limited to any images, photographs, animations, video, audio, music, text, and applets incorporated into the OPTIONAL SOFTWARE PRODUCT), the accompanying printed materials, and any copies of the OPTIONAL SOFTWARE PRODUCT are owned by WATCHGUARD or its licensors. Your rights to use the OPTIONAL SOFTWARE PRODUCT are as specified in this AGREEMENT, and WATCHGUARD retains all rights not expressly granted to you in this AGREEMENT. Nothing in this AGREEMENT constitutes a waiver of our rights under U.S. copyright law or any other law or treaty.

2. Permitted Uses. You are granted the following rights to the OPTIONAL SOFTWARE PRODUCT:

(A) You may install and use the OPTIONAL SOFTWARE PRODUCT on that number of WATCHGUARD hardware products (or manage that number of WATCHGUARD hardware products) at any one time as permitted in the license key certificate that you have purchased and may install and use the OPTIONAL SOFTWARE PRODUCT on multiple workstation computers. You must also maintain a current subscription to the WatchGuard LiveSecurity Service (or its equivalent) for each additional WATCHGUARD hardware product on which you will use a copy of an updated or modified version of the OPTIONAL SOFTWARE PRODUCT received through the WatchGuard LiveSecurity Service (or its equivalent).

(B) To use the OPTIONAL SOFTWARE PRODUCT on more WATCHGUARD hardware products than provided for in Section 2(A), you must license additional copies of the OPTIONAL SOFTWARE PRODUCT as required.

(C) In addition to the copies described in Section 2(A), you may make a single copy of the OPTIONAL SOFTWARE PRODUCT for backup or archival purposes only.

3. Prohibited Uses. You may not, without express written permission from WATCHGUARD:

(A) Use, copy, modify, merge or transfer copies of the OPTIONAL SOFTWARE PRODUCT or printed materials except as provided in this AGREEMENT;

(B) Use any backup or archival copy of the OPTIONAL SOFTWARE PRODUCT (or allow someone else to use such a copy) for any purpose other than to replace the original copy in the event it is destroyed or becomes defective;

(C) Sublicense, lend, lease or rent the OPTIONAL SOFTWARE PRODUCT;

(D) Transfer this license to another party unless

(i) the transfer is permanent,

(ii) the third party recipient agrees to the terms of this AGREEMENT, and

(iii) you do not retain any copies of the OPTIONAL SOFTWARE PRODUCT; or

(E) Reverse engineer, disassemble or decompile the OPTIONAL SOFTWARE PRODUCT.

4. Limited Warranty. WATCHGUARD makes the following limited warranties for a period of ninety (90) days from the date you obtained the OPTIONAL SOFTWARE PRODUCT from WATCHGUARD or an authorized dealer:

(A) Media. The disks and documentation will be free from defects in materials and workmanship under normal use. If the disks or documentation fail to conform to this warranty, you may, as your sole and exclusive remedy, obtain a replacement free of charge if you return the defective disk or documentation to us with a dated proof of purchase.

(B) OPTIONAL SOFTWARE PRODUCT. The OPTIONAL SOFTWARE PRODUCT will materially conform to the documentation that accompanies it or its license key certificate. If the OPTIONAL SOFTWARE PRODUCT fails to operate in accordance with this warranty, you may, as your sole and exclusive remedy, return all of the OPTIONAL SOFTWARE PRODUCT and the documentation to the authorized dealer from whom you obtained it, along with a dated proof of purchase, specifying the problems, and they will provide you with a new version of the OPTIONAL SOFTWARE PRODUCT or a full refund, at their election.

Disclaimer and Release. THE WARRANTIES, OBLIGATIONS AND LIABILITIES OF WATCHGUARD, AND YOUR REMEDIES, SET FORTH IN PARAGRAPHS 4, 4(A) AND 4(B) ABOVE ARE EXCLUSIVE AND IN SUBSTITUTION FOR, AND YOU HEREBY WAIVE, DISCLAIM AND RELEASE ANY AND ALL OTHER

WARRANTIES, OBLIGATIONS AND LIABILITIES OF WATCHGUARD AND ITS LICENSORS AND ALL OTHER RIGHTS, CLAIMS AND REMEDIES YOU MAY HAVE AGAINST WATCHGUARD AND ITS LICENSORS, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, WITH RESPECT TO ANY NONCONFORMANCE OR DEFECT IN THE OPTIONAL SOFTWARE PRODUCT (INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ANY IMPLIED WARRANTY ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING, OR USAGE OF TRADE, ANY WARRANTY OF NONINFRINGEMENT, ANY WARRANTY THAT THE OPTIONAL SOFTWARE PRODUCT WILL MEET YOUR REQUIREMENTS, ANY WARRANTY OF UNINTERRUPTED OR ERROR-FREE OPERATION, ANY OBLIGATION, LIABILITY, RIGHT, CLAIM OR REMEDY IN TORT, WHETHER OR NOT ARISING FROM THE NEGLIGENCE (WHETHER ACTIVE, PASSIVE OR IMPUTED) OR FAULT OF WATCHGUARD AND ITS LICENSORS AND ANY OBLIGATION, LIABILITY, RIGHT, CLAIM OR REMEDY FOR LOSS OR DAMAGE TO, OR CAUSED BY OR CONTRIBUTED TO BY, THE OPTIONAL SOFTWARE PRODUCT).

Limitation of Liability. WATCHGUARD'S LIABILITY (WHETHER IN CONTRACT, TORT, OR OTHERWISE; AND NOTWITHSTANDING ANY FAULT, NEGLIGENCE, STRICT LIABILITY OR PRODUCT LIABILITY) WITH REGARD TO THE OPTIONAL SOFTWARE PRODUCT WILL IN NO EVENT EXCEED THE PURCHASE PRICE PAID BY YOU FOR SUCH PRODUCT. THIS SHALL BE TRUE EVEN IN THE EVENT OF THE FAILURE OF AN AGREED REMEDY. IN NO EVENT WILL WATCHGUARD BE LIABLE TO YOU OR ANY THIRD PARTY, WHETHER ARISING IN CONTRACT (INCLUDING WARRANTY), TORT (INCLUDING ACTIVE, PASSIVE OR IMPUTED NEGLIGENCE AND STRICT LIABILITY AND FAULT), FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, OR LOSS OF BUSINESS INFORMATION) ARISING OUT OF OR IN CONNECTION WITH THIS WARRANTY OR THE USE OF OR INABILITY TO USE THE OPTIONAL SOFTWARE PRODUCT, EVEN IF WATCHGUARD HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THIS SHALL BE TRUE EVEN IN THE EVENT OF THE FAILURE OF AN AGREED REMEDY.

5. United States Government Restricted Rights. The OPTIONAL SOFTWARE PRODUCT is provided with Restricted Rights. Use, duplication or disclosure by the U.S. Government or any agency or instrumentality thereof is subject to restrictions as set forth in subdivision (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013, or in subdivision (c)(1) and (2) of the Commercial Computer Software -- Restricted Rights Clause at 48 C.F.R. 52.227-19, as applicable. Manufacturer is WatchGuard Technologies, Inc., 505 5th Ave. South, Suite 500, Seattle, WA 98104.

6. Export Controls. You agree not to directly or indirectly transfer the OPTIONAL SOFTWARE PRODUCT or documentation to any country to which such transfer would be prohibited by the U.S. Export Administration Act and the regulations issued thereunder.

7. Termination. This license and your right to use the SOFTWARE PRODUCT will automatically terminate if you fail to comply with any provisions of this AGREEMENT, destroy all copies of the OPTIONAL SOFTWARE PRODUCT in your possession, or voluntarily return the OPTIONAL SOFTWARE PRODUCT to WATCHGUARD. Upon termination you will destroy all copies of the OPTIONAL SOFTWARE PRODUCT and documentation remaining in your control or possession.

8. Miscellaneous Provisions. This AGREEMENT will be governed by and construed in accordance with the substantive laws of Washington excluding the 1980 United National Convention on Contracts for the International Sale of Goods, as amended. This is the entire AGREEMENT between us relating to the OPTIONAL SOFTWARE PRODUCT, and supersedes any prior purchase order, communications, advertising or representations concerning the OPTIONAL SOFTWARE PRODUCT AND BY USING THE OPTIONAL SOFTWARE PRODUCT YOU AGREE TO THESE TERMS. IF THE SOFTWARE PRODUCT IS BEING USED BY AN ENTITY, THE INDIVIDUAL INDICATING AGREEMENT TO THESE TERMS REPRESENTS AND WARRANTS THAT (A) SUCH INDIVIDUAL IS DULY AUTHORIZED TO ACCEPT THIS AGREEMENT ON BEHALF OF THE ENTITY AND TO BIND THE ENTITY TO THE TERMS OF THIS AGREEMENT; (B) THE ENTITY HAS THE FULL POWER, CORPORATE OR OTHERWISE, TO ENTER INTO THIS AGREEMENT AND PERFORM ITS OBLIGATIONS UNDER THIS AGREEMENT AND; (C) THIS AGREEMENT AND THE PERFORMANCE OF THE ENTITY'S OBLIGATIONS UNDER THIS AGREEMENT DO NOT VIOLATE ANY THIRD-PARTY AGREEMENT TO WHICH THE ENTITY IS A PARTY. No change or modification of this AGREEMENT will be valid unless it is in writing and is signed by WATCHGUARD.

WatchGuard® High Availability Guide

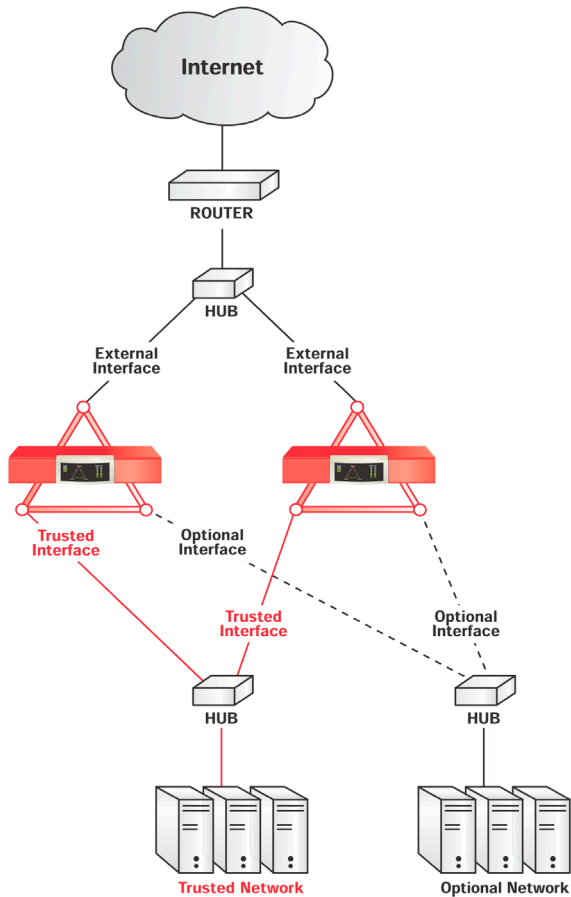
The WatchGuard High Availability option enables the installation of two Fireboxes on one network in a failover configuration. At any given moment, one Firebox is in active mode while the other is in standby mode. The standby Firebox activates when the first Firebox goes offline. After a Firebox becomes active, it stays active until it is taken offline and the other Firebox resumes as the primary unit. Both Fireboxes in a High Availability installation must have identical configuration files.

The High Availability Failover Process

In a High Availability configuration, the two Fireboxes take turns using a single IP address. One Firebox is the primary unit and assumes the IP address while the other is the standby. The primary/standby relationship is dynamic: The first Firebox to reboot becomes the primary Firebox. If they boot up simultaneously, the two Fireboxes negotiate primary and standby status. When the primary Firebox first boots, it brings up the standby Firebox, which then runs without an IP address. This failover process can take as long as 90 seconds to complete both the heartbeat time and the soft reboot.

After rebooting, the standby Firebox makes a connection to the primary Event Processor and starts a control channel over which it constantly monitors the active Firebox. If the standby no longer detects the active Firebox, it switches to active mode, running with the last configuration file it received.

To put a new configuration file onto the failover cluster, the Management Station must have network access to both the active and standby Fireboxes. The following figure shows a network with a High Availability configuration.



Preparing a Network for High Availability

Prepare for installation according to the heading that best describes your situation:

Adding a second Firebox to a functioning Firebox installation

- If your second Firebox has the WatchGuard LiveSecurity (Firebox) System 4.1 or later installed in its flash memory, use the network connection to configure the Fireboxes via TCP/IP instead of the direct-connect serial cable.
- If your second Firebox has not been initiated with the Firebox Security System 4.1 software, connect it to the Management Station with a serial cable and run the QuickSetup Wizard to initialize it. Then install it on the Trusted interface.

Refer to the “Firebox Read-Only System Area” section of the *Reference Guide* for instructions on installing and configuring a Firebox using a serial cable.

Creating a new High Availability installation with two uninstalled Fireboxes

- If both Fireboxes are packaged with WatchGuard LiveSecurity System (Firebox) software 4.1 or later, use a network connection to configure the Fireboxes via TCP/IP.
- If either Firebox is packaged with LiveSecurity (Firebox) System 4.0 or a previous version of the WatchGuard software, connect that Firebox to the Management Station with a serial cable and run the QuickSetup Wizard to initialize it. Disconnect the Firebox you just initialized from the serial cable, and attach the second Firebox. Run QuickSetup Wizard a second time. Install both initialized Fireboxes on the Trusted Interface.

Refer to the “Firebox Read-Only System Area” section of the Firebox Security System *Reference Guide* for instructions on installing and configuring a Firebox using a serial cable.

Installing High Availability

Your purchase of WatchGuard High Availability includes a license key certificate. You enter your license key when you install the WatchGuard Firebox System software:

- 1 Insert the WatchGuard Firebox System CD.
If the installation wizard does not start automatically, double-click `install.exe` in the root directory of the CD.
- 2 On the Select Components screen of the installation wizard, click the checkbox marked **High Availability**.
- 3 Enter the High Availability license key found on your license key certificate.
- 4 Continue with the installation of the WatchGuard Firebox System, as described on the QuickStart poster included with your Firebox.

Configuring High Availability

Before configuring your firewall for High Availability, you should complete the following:

- The optional High Availability module must be downloaded and installed on the Management Station.
- The two Fireboxes must be identical models.
- Both Fireboxes must be initialized with the LiveSecurity System 4.1 or later software.
- Both Fireboxes should be installed on the Trusted interface, ready to be configured.
- Identify the active Firebox (configured and currently protecting the network) and the standby Firebox (being added to implement High Availability).

From the Windows desktop:

- 1 Select **Start** ⇒ **Programs** ⇒ **WatchGuard** ⇒ **QuickSetup Wizard**.
The QuickSetup Wizard appears.
- 2 Use the **Configuration Option** drop list to select **Establish a High-Availability Firebox Cluster**. Click **Next**.
The High Availability Configuration screen appears.

- 3 Enter the Trusted IP address of the currently active Firebox in the **Active Firebox IP Address** field.
- 4 Enter an unused IP address in the **Stand-By IP Address** field. Click **Next**.

The Enter Active Firebox Passwords screen appears.
- 5 Enter and confirm the active Firebox read-only password in the **Status Password** and (first) **Confirm** fields.
- 6 Enter and confirm the active Firebox read-write password in the **Configuration Password** and (second) **Confirm** fields.
- 7 Click **Next**.

The Copy Active Firebox Setup for Fail-safe Operation screen appears.
- 8 Connect both Fireboxes the Ethernet via TCP/IP. Use the **Access Method** drop list to select **Use TCP/IP to Configure (Recommended)**.
- 9 Enter or view the temporary IP address for the new standby Firebox. Click **Next**.

The Enter Pass Phrase dialog box appears.
- 10 Enter or accept the **Current Configuration Pass Phrase** (this is the read-write password for the standby Firebox). If this is a new Firebox, accept the default password, *wg*. Click **OK**.
- 11 Turn on the standby Firebox when prompted by the Wizard.

The Firebox Selector dialog box appears.
- 12 Select the standby Firebox from the **Firebox Selector** list.

If you are unsure which serial number corresponds to which Firebox on your network click the Blink Lights button. It causes the highlighted Firebox's front panel lights to blink and flash.
- 13 When you have selected the standby Firebox, click **OK**.

High Availability copies the configuration file from your primary Firebox and uploads it to the standby Firebox. Then both Fireboxes reboot. The first box to finish rebooting becomes the primary Firebox until it is shut off or fails. The active Firebox front panel lights up to indicate the flow of traffic through the Firebox. The standby Firebox indicates standby mode by alternately blinking the SysA and SysB lights on its front panel.
- 14 [Optional] You can test the High Availability mechanism by turning off the active Firebox.

Within a minute the standby Firebox boots into active mode. When you turn the other Firebox back on, the standby Firebox resumes standby mode.

Troubleshooting High Availability

If the second Firebox does not respond to the new configuration, you may need to upload the LiveSecurity (Firebox) System 4.1 version to the Firebox flash disk memory. To do so:

- 1 Connect the second Firebox directly to the Management Station with the serial cable as described in the “Firebox Read-Only System Area” section of the *Firebox Security System Reference Guide*.
- 2 Perform the full Firebox initialization procedure where you start with an unpowered Firebox and turn it on to flash its memory when prompted to do so by the QuickSetup Wizard. See the “Firebox Read-Only System Area” section of the *Firebox Security System Reference Guide*.
- 3 Place the second Firebox on the network next to the first Firebox, on the Trusted Interface.
- 4 Run the QuickSetup Wizard to configure High Availability as described in “Preparing a Network for High Availability” on page 3.