

Sophos SafeGuard Disk Encryption for Mac startup guide

Product version: 6

Document date: February 2012



Contents

- 1 Before you begin.....3
- 2 Protecting Mac OS X computers.....5
- 3 Technical support.....9
- 4 Copyright.....10

1 Before you begin

System requirements

■ Hardware (Intel-based 64 bit CPU only)

- MacBook
- MacBook Pro
- MacBook Air
- iMac
- Mac mini
- Mac Pro

■ EFI

- EFI32 (firmware)
- EFI64 (firmware)

With the following terminal command, the EFI firmware can be verified:

```
"ioreg -l -p IODeviceTree | grep firmware-abi"
```

The return value should be **"firmware-abi" = <"EFI64" >** or **"firmware-abi" = <"EFI32" >**.

■ Operating system

- 10.7 (Lion) recent patch level (at least patch level of release date - February 2012)
- 10.6 (Snow Leopard) recent patch level
- 10.5 (Leopard) recent patch level

■ Update of Sophos SafeGuard Disk Encryption for Mac

Sophos SafeGuard Disk Encryption for Mac 5.50.1 and 5.55 can be updated to 6.0.

■ Update of Mac OS X versions

To update the operating system from Mac OS X 10.5 (Leopard) to 10.6 (Snow Leopard) or to 10.7 (Lion), you need to uninstall Sophos SafeGuard Disk Encryption for Mac first. This step includes a final decryption of encrypted partitions.

After the successful update you need to install Sophos SafeGuard Disk Encryption 6.0 and encrypt the partitions again.

Please change your exclude rules for your time machine configuration: Add "Library/LaunchDaemons/com.sophos.sgsd.plist" to the list.

What you will need

You will need the following information for installation and configuration:

- Administrator credentials of the Mac where you want to install the software.

2 Protecting Mac OS X computers

2.1 Installing Sophos SafeGuard Disk Encryption for Mac

Before you install Sophos SafeGuard Disk Encryption for Mac make sure that you have created a new Time Machine backup of your hard drive. For further information, see [Time Machine backups](#) (page 8).

1. Using the web address and download credentials, go to the Sophos web site and download the Sophos SafeGuard Disk Encryption installer for Mac OS X.
2. Locate the installer disk image in the folder to where it was downloaded. Open the disk image. Find Sophos SafeGuard.pkg and double-click it to start the installer.
3. Click **Continue**. Follow the steps.
4. Enter the Mac OS X administrator credentials when the installer prompts you to do so. This is necessary to allow the installer to make changes.
5. When the installer has finished, restart your Mac.
6. After the restart Sophos SafeGuard Disk Encryption is installed.
7. Power-on Authentication (POA) has not been activated yet, but only displays "Secured by SOPHOS". After about one second the operating system is started. The software will continue to display "Secured by SOPHOS" as long as no SafeGuard user has been created. When the first user is created, Power-on Authentication is activated.

Sophos SafeGuard Disk Encryption for Mac places an icon on the right-hand side of the menu bar. Clicking the icon gives you access to the Sophos SafeGuard Disk Encryption user and disk management functions.

Uninstalling Sophos SafeGuard Disk Encryption for Mac

To uninstall Sophos SafeGuard Disk Encryption for Mac, use the uninstaller package **Sophos SafeGuard Uninstaller.pkg** in /Library/Sophos SafeGuard. You need to decrypt the hard drive first.

2.2 Configuring Sophos SafeGuard Disk Encryption

After the installation of the software you have to add Sophos SafeGuard Disk Encryption users and specify which volumes of your Mac are to be encrypted.

Creating the first Sophos SafeGuard Disk Encryption Admin user

There must always be one Admin user. The first user created must be an Admin user. This is enforced by the user management and is the prerequisite for all administration tasks. When users are deleted it is not possible to delete the last Admin user, if more than one has been created.

1. Choose the Sophos SafeGuard Disk Encryption icon and click **User Management**.
2. Press Cmd+N.
3. Enter a name for the Admin user.

4. Enter the password in the **Password** and **Confirm Password** fields. Sophos SafeGuard Disk Encryption accepts only passwords with eight or more characters. Select the **Show Password** option to display the entered password.
5. Click **OK**.

Now you can create other users.

Encrypting a partition

Sophos SafeGuard Disk Encryption lets you encrypt the hard disk or partitions of your Mac. Every disk management task (encrypt/decrypt/pause/resume) requires an authentication as a SafeGuard Admin.

1. Choose the Sophos SafeGuard Disk Encryption icon and click **Disk Management**.
2. Enter your SafeGuard Admin credentials and click **OK**.
3. Choose **Partitions** in the management pane. All partitions available are displayed.
4. Click **Encrypt** right beside the partition you want to encrypt.
5. Encryption of the selected partitions starts immediately. To enhance encryption speed, check the **Fast Mode** option in the lower left corner of the **Disk management** pane.

Encryption/decryption can be paused by clicking the **Pause** button on the right end of the progress bar. To resume encryption, click the **Resume** button, which is displayed when the encryption has been paused. For both actions, you must authenticate as a SafeGuard Admin.

Paused encryption/decryption tasks are resumed automatically after you restart your Mac.

For a detailed description see the *Sophos SafeGuard Disk Encryption for Mac help*.

Connecting a Mac protected by Sophos SafeGuard Disk Encryption to a SafeGuard Enterprise environment

SafeGuard Enterprise is a modular security suite that enforces security on Windows endpoints using administrator-defined policies. SafeGuard Enterprise offers full disk encryption, file-based encryption, Active Directory integrated central management, reporting, multi-factor authentication and many more security features for Windows endpoints. Endpoints are managed by SafeGuard Enterprise security officers in the SafeGuard Management Center. For further information on SafeGuard Enterprise, see <http://www.sophos.com/products/enterprise/encryption/safeguard-enterprise/> and the SafeGuard Enterprise documentation.

With version 6.0 a Mac protected by Sophos SafeGuard Disk Encryption can be connected to a SafeGuard Management Center. To do so, a SafeGuard Enterprise client configuration package created in the SafeGuard Management Center must be installed on the Mac. For further details on how a client configuration package (.zip file) is created in the SafeGuard Management Center, refer to the *SafeGuard Enterprise 6.0 administrator help*.

Note: You need to select "SSL" as transport encryption. "Sophos" transport encryption is not supported by Macs.

Carry out the following steps on the Mac protected by Sophos SafeGuard Disk Encryption:

1. Select **File > Import configuration data...** to import the configuration data.

2. Authenticate with SafeGuard Admin credentials. If you have not created a SafeGuard Admin user yet, you need to create one first.
3. Locate the SafeGuard client configuration package (.zip file) and click **Import**.
Sophos SafeGuard Disk Encryption displays a success message.
4. Choose the Sophos SafeGuard Disk Encryption icon and click **Server Connection ...**
5. Details of the server connection are displayed and a **Synchronize** button is available. Click this button to start data synchronization between the Mac and the SafeGuard Enterprise server.

The **Inventory** view in the SafeGuard Management Center displays the machine details of the machine.

These steps can also be performed without user interaction by using the command line and SGADMIN –import-config. Man SGADMIN or sgadmin --help provide the necessary syntax.

Single Sign On (SSO) and password synchronization

Sophos SafeGuard Disk Encryption for Mac can be operated in a mode, where users only have to enter their credentials at Power-on Authentication and are automatically logged on to Mac OS X as individual users. For Single Sign On users need to have the same user names and passwords at Power-on Authentication and in Mac OS X.

When creating SafeGuard Users, a Sophos SafeGuard Disk Encryption Admin needs to make sure that their user names match the user names of the corresponding Mac OS X users for the Single Sign On.

Note: Sophos SafeGuard Disk Encryption 6.0 offers Single Sign On for local Mac OS X users and for Active Directory mobility accounts.

To set up Single Sign On:

1. A user needs to be created in Sophos SafeGuard Disk Encryption that matches the Mac OS X user. User names and passwords must be identical. The Mac OS X user can either be a local user or an Active Directory mobility account.
2. Single Sign On must be enabled in Sophos SafeGuard Disk Encryption. To do so, use the command line with the command `sgadmin --enable-sso`. The command `sgadmin --disable-sso` disables Single Sign On.

When a user logs on at the POA with this user ID, they will be logged on to Mac OS X automatically.

Note: The Mac OS X 10.7 setting **Display login window** as must be set to **List of user**.

Sophos SafeGuard Disk Encryption also offers a feature to change the passwords at Power-on Authentication and in Mac OS X and keep them synchronized.

- The password change dialog in Sophos SafeGuard Disk Encryption triggers the password change.
- If the currently logged on SafeGuard User and the Mac OS X user have identical user names, the **Change password** dialog displays the **Sync Passwords** check box. Choose **Sync Passwords**.

- If the user keeps the check box selected and clicks **Ok**, Sophos SafeGuard Disk Encryption attempts to change the password in Sophos SafeGuard Disk Encryption and Mac OS X (user password and keychain password) and to synchronize them.
- If this is successful, Sophos SafeGuard Disk Encryption simply updates the **Modified** timestamp.
- If any of the three passwords cannot be changed, then all passwords remain unchanged. This is for example the case, if a new password violates the password rules of Sophos SafeGuard Disk Encryption or Mac OS X or the Active Directory. In this case all passwords keep their old values.
- If the user deselects **Sync Passwords**, only the password in Sophos SafeGuard Disk Encryption is changed.

2.3 Time Machine backups

The following components of Sophos SafeGuard Disk Encryption should be excluded from Time Machine backups:

- /.com.sophos
- /System/Library/Extensions/sgbiodrv.kext
- /usr/sbin/sgd
- /usr/bin/sgadmin
- /Library/Sophos SafeGuard
- /Library/LaunchDaemons/com.sophos.sgd.plist
- /Library/LaunchDaemons/com.sophos.sgsd.plist
- /Library/LaunchAgents/com.sophos.sguimenu.plist
- /Library/LaunchAgents/com.sophos.sgsynclang.plist
- /Applications/sgui.app
- /usr/share/man/man1/sgadmin.1
- /usr/share/man/man1/sgsd.1
- /usr/bin/sgsd
- /Library/LaunchDaemons/com.sophos.sgsd.plist
- /Library/Security/SecurityAgentPlugins/Sophos_SSO.bundle
- /var/spool/sg
- /var/sg

3 Technical support

You can find technical support for Sophos products in any of these ways:

- Visit the SophosTalk forum at <http://community.sophos.com/> and search for other users who are experiencing the same problem.
- Visit the Sophos support knowledgebase at <http://www.sophos.com/support/>
- Download the product documentation at <http://www.sophos.com/support/docs/>
- Send an email to support@sophos.com, including your Sophos software version number(s), operating system(s) and patch level(s), and the text of any error messages.

4 Copyright

Copyright © 2010 - 2012 Sophos Group. All rights reserved. SafeGuard is a registered trademark of Sophos Group.

All other product and company names mentioned are trademarks or registered trademarks of their respective owners.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise unless you are either a valid licensee where the documentation can be reproduced in accordance with the licence terms or you otherwise have the prior permission in writing of the copyright owner.

Disclaimer and Copyright for 3rd Party Software

Portions of this software are copyright © 2010 The FreeType Project (www.freetype.org). All rights reserved.

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

AES-NI

This software uses code from the `Intel_aes_lib`. The following is applicable to `Intel_aes_lib`:

```
/* intel_aes_lib source files come from Intel.
```

```
* Modified by Patrick Fay
```

```
*
```

Copyright (c) 2010, Intel Corporation

All rights reserved.

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

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * 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.
- * Neither the name of Intel Corporation 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

Issue Date: Aug 6, 2010

*/

DISCLAIMER

[The AES-NI library] software is provided 'as is' with no explicit or implied warranties in respect of its properties, including, but not limited to, correctness and/or fitness for purpose.

Gladman AES

Copyright (c) 1998-2007, Brian Gladman, Worcester, UK. All rights reserved.

LICENSE TERMS

The free distribution and use of this software is allowed (with or without changes) provided that:

1. source code distributions include the above copyright notice, this list of conditions and the following disclaimer;
2. binary distributions include the above copyright notice, this list of conditions and the following disclaimer in their documentation;
3. the name of the copyright holder is not used to endorse products built using this software without specific written permission.

DISCLAIMER

This software is provided 'as is' with no explicit or implied warranties in respect of its properties, including, but not limited to, correctness and/or fitness for purpose.

EDK

Copyright (c) 2008

Intel Corporation.

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 Intel Corporation and its contributors.
4. Neither the name of Intel Corporation or its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY INTEL CORPORATION 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 INTEL CORPORATION 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.

Copyright (c) 1988, 1993

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.

Freetype

Copyright 2000 Computing Research Labs, New Mexico State University

Copyright 2001, 2002, 2003, 2004 Francesco Zappa Nardelli

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 COMPUTING RESEARCH LAB OR NEW MEXICO STATE UNIVERSITY 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.

FreeType font driver for bdf files

Copyright (C) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Francesco Zappa Nardelli

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.

FreeType font driver for pcf fonts

Copyright (C) 2000, 2001, 2002 by Francesco Zappa Nardelli

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.

Copyright (c) 2000

Intel Corporation.

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 Intel Corporation and its contributors.4. Neither the name of Intel Corporation or its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY INTEL CORPORATION 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 INTEL CORPORATION 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.

Copyright (c) 1992, 1993

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

Portions copyright (c) 1999, 2000

Intel Corporation.

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, Intel Corporation, and its contributors.
4. Neither the name of University, Intel Corporation, or their respective 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, INTEL CORPORATION 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, INTEL CORPORATION 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.

Copyright (c) 1990, 1993

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

This code is derived from software contributed to Berkeley by Chris Torek.

Portions copyright (c) 1999, 2000

Intel Corporation.

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, Intel Corporation, and its contributors.
4. Neither the name of University, Intel Corporation, or their respective 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, INTEL CORPORATION 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, INTEL CORPORATION 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.

Zlib, Part of FreeType

zlib.h -- interface of the 'zlib' general purpose compression library version 1.1.4, March 11th, 2002

Copyright (C) 1995-2002 Jean-loup Gailly and Mark Adler

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.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly

jloup@gzip.org

Mark Adler

madler@alumni.caltech.edu

The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <ftp://ds.internic.net/rfc/rfc1950.txt> (zlib format), [rfc1951.txt](ftp://ds.internic.net/rfc/rfc1951.txt) (deflate format) and [rfc1952.txt](ftp://ds.internic.net/rfc/rfc1952.txt) (gzip format).

PCF, Part of FreeType

Copyright (C) 2000 by Francesco Zappa Nardelli

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 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.

GptLib

Copyright (c) 2002 Marcel Moolenaar

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.

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.

gSOAP Rationale: This license agreement for commercial use of the gSOAP software standard edition

in open source form shall replace the gSOAP public license and GPL license for Customer's use of the Software, thereby permanently replacing the terms and conditions imposed by the gSOAP public license and GPL license, as set forth in this Agreement. This license covers the entire gSOAP source distribution, including, but not limited to, the runtime library, compiler, WSDL importer, example applications, and documentation.

THIS LICENSE AGREEMENT ("Agreement") is made and entered into as of the last date executed by the parties below (the "Effective Date") by and between GENIVIA, INC., a Florida corporation having a principal place of business at 3178 Shamrock East, Tallahassee, Florida 32309, USA, ("Genivia"), and **Sophos Limited and its subsidiaries and affiliates**, a company in accordance with the laws of England and Wales having a principal place of business at The Pentagon, Abingdon, OX14 3YP, United Kingdom ("Customer").

The parties agree as follows:

1. DEFINITIONS.

" **Original Code** " means Source Code of computer software code which is described in the Source Code notice required by **Exhibit A** as Original Code.

" **Modifications** " means any addition to or deletion from the substance or structure of either the Original Code or any previous Modifications. When Covered Code is released as a series of files, a Modification is: (i) any addition to or deletion from the contents of a file containing Original Code or previous Modifications; (ii) any new file that contains any part of the Original Code, or previous Modifications.

" **Covered Code** " means the Original Code, or Modifications or the combination of the Original Code, and Modifications, in each case including portions thereof.

" **Software** " means the Covered Code and accompanying documentation and support files referenced in section 1 of **Exhibit A**, including Updates (if any).

" **Updates** " means any patches, bug fixes, upgrades, and new versions of the Software made generally available by Genivia during the term of this Agreement.

" **Source Code** " means computer programming code in human readable form that is not suitable for machine execution without the intervening steps of interpretation or compilation,

meaning the preferred form of the Covered Code for making modifications to it, including all modules it contains, plus any associated interface definition files, scripts used to control compilation and installation of an Executable Object Code, or source code differential comparisons against the Original Code. The Source Code can be in a compressed or archival form, provided the appropriate decompression or de-archiving software is widely available for no charge.

GENIVIA INC. STANDARD EDITION LICENSE AGREEMENT FOR COMMERCIAL USE 2 of 8

" **Executable Object Code** " means the computer programming code in any other form than Source Code that is not readily perceivable by humans and suitable for machine execution without the intervening steps of interpretation or compilation.

" **Authorized Site** " means the specific address of Customer's facility consisting of a single building or multiple buildings on a contiguous campus as specified in **Exhibit A**.

" **Project** " means a concerted undertaking by an identified Customer development team to design or produce a Target Application.

" **Run-Time Module** " means the Software in Source Code form or as Executable Object Code to be incorporated into a Target Application as inseparably embedded code or statically linked to a Target Application.

" **Target Application** " means an end-user item, such as a software product that is possibly replicated in identical form and offered for sale or licensed to third parties, or a device or system developed by Customer pursuant to a Project that contains a Run-Time Module, or any portion thereof, as specified in **Exhibit A** and any Updates made during the term of this Agreement.

2. SOURCE CODE LICENSE.

Subject to Customer's compliance with the terms and conditions of this Agreement and payment of any applicable fees, Genivia hereby grants to Customer a non-transferable, nonexclusive, worldwide, perpetual, royalty-free, paid-up license: (i) to reproduce and use the Software solely at the Authorized Sites in connection with the Project; (ii) to make backup copies at the Authorized Sites for the purpose of this Agreement; (iii) to store the Software in a source code repository; (iv) to create Modifications and other derivative works of the Software, solely to the extent necessary to support the development of the Target Application; (v) to

compile the Software, including any Modifications and derivative works thereof, into Run-Time Modules; (vi) to reproduce an unlimited number of Run-Time Modules for physical incorporation into the Target Application; and (vii) to market, sell, offer to sell, and distribute the Target Application.

3. RESTRICTIONS.

Customer shall reproduce and include any and all copyright notices and proprietary rights legends, as such notices and legends appear in the original Software, on any copy of the Software, or portion thereof, with the exception of the gSOAP public license and GPL license notices.

The Software shall be handled, used and stored, solely at the Authorized Site identified in **Exhibit A**. The Software may be used from a single machine, a set of machines, or a network file server, but there shall be no access to the Software from any external network not located at the Authorized Sites.

GENIVIA INC. STANDARD EDITION LICENSE AGREEMENT FOR COMMERCIAL USE 3 of 8

A function of the Software is to create Run-Time Modules for incorporation into Target Applications. Except as set forth in Section 2 above, no license is granted hereunder to reproduce or distribute the gSOAP soapcpp2 compiler and wsdl2h importer as part of such Target Application.

4. OWNERSHIP.

Genivia represents and warrants to Customer that Genivia has all rights in the Software necessary to grant the rights and license granted to Customer in this Agreement.

Without limiting the foregoing, Genivia represents and warrants that Genivia has acquired an assignment of all intellectual property rights in and to all portions of the Software delivered to Customer under this Agreement.

Customer shall not have any obligation to provide, assign, or disclose to Genivia or any other party any Modifications. Notwithstanding the foregoing, Genivia and its licensors shall retain exclusive ownership of all worldwide Intellectual Property Rights in and to the Software.

Customer acknowledges that this Agreement does not grant to Customer any Intellectual Property Rights in or to the Software other than the limited rights with respect to the Software

as set forth in Section 2.

5. DELIVERY AND PAYMENT.

Immediately following the Effective Date, Genivia grants Customer the right to download the Software from the Approved Software Download Site specified in **Exhibit A**, and install the Software at the Authorized Site and use the Software as set forth in Section 2 subject to the restrictions listed in Section 3. Notwithstanding any terms or other agreements posted on the Approved Software Download Site, this Agreement shall be the sole and exclusive agreement governing Customer's use of the Software.

Customer shall pay to Genivia the Software license fee set forth in **Exhibit A**. License fees will be invoiced with shipment of this License Agreement. Payment of all amounts invoiced shall be due forty-five (45) days after receipt of the invoice.

All payments and amounts shall be paid without deduction, set-off or counter claim, free and clear of any restrictions or conditions, and without deduction for any taxes, levies, imposts, duties, fees, deductions, withholdings or other governmental charges. If any deduction is required to be made by law, Customer shall pay in the manner and at the same time such additional amounts as will result in receipt by Genivia of such amount as would have been received by Genivia had no such amount been required to be deducted. If Customer is claiming sales or use tax exemption, a certified Tax Exempt Certificate must be attached to this Agreement or applicable purchase order submitted by Customer.

6. TERM AND TERMINATION.

GENIVIA INC. STANDARD EDITION LICENSE AGREEMENT FOR COMMERCIAL USE 4 of 8

This Agreement shall commence upon the Effective Date and is granted in perpetuity, but may be terminated without notice in the following circumstances: if Customer breaches any term of this agreement, unless such breach is curable and is cured by Customer within thirty (30) days after notice of such breach is provided by Genivia; if Customer, being a firm or partnership, is dissolved; or, by Customer, if Customer destroys the Software for any reason. Upon termination, Customer shall destroy any remaining copies of the Software or otherwise return or dispose of such material. Termination pursuant to this clause shall not affect any rights or remedies, which Genivia may have otherwise under this license or at law.

The following Sections shall survive any termination of this Agreement: Sections 1, 4, 6, 8, and

10. Termination of this Agreement, if any, shall not affect any licenses or other grants of any rights, titles, or interests of Customer in or to any Run-Time Modules or the Target Application.

7. LIMITED WARRANTY.

Genivia warrants that the Software, installation scripts, and future Updates will be provided to Customer. Customer assumes full responsibility for: (i) the selection, download, and installation of the Software from the Approved Software Download Site specified in **Exhibit A**; (ii) the proper use of the Software; (iii) verifying the results obtained from the use of the Software; and (iv) taking appropriate measures to prevent loss of data. Genivia does not warrant that the operation of the Software will meet Customer's requirements or that Customer will be able to achieve any particular results from use or modification of the Software or that the Software will operate free from error.

EXCEPT AS EXPRESSLY SET FORTH IN SECTIONS 7 AND 8 OF THIS AGREEMENT, GENIVIA AND ITS LICENSORS DISCLAIM ALL WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, OF FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS, AND ANY WARRANTY THAT MAY ARISE BY REASON OF TRADE USAGE, CUSTOM, OR COURSE OF DEALING. WITHOUT LIMITING THE FOREGOING, CUSTOMER ACKNOWLEDGES THAT THE SOFTWARE IS PROVIDED "AS IS" AND THAT GENIVIA DOES NOT WARRANT THE SOFTWARE WILL RUN UNINTERRUPTED OR ERROR FREE. THE ENTIRE RISK AS TO RESULTS AND PERFORMANCE OF THE SOFTWARE IS ASSUMED BY CUSTOMER. UNDER NO CIRCUMSTANCES WILL GENIVIA BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, WHETHER BASED ON CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, ARISING OUT OF OR IN ANY WAY RELATED TO THE SOFTWARE, EVEN IF GENIVIA HAS BEEN ADVISED ON THE POSSIBILITY OF SUCH DAMAGE OR IF SUCH DAMAGE COULD HAVE BEEN REASONABLY FORESEEN, AND NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY EXCLUSIVE REMEDY PROVIDED. SUCH LIMITATION ON DAMAGES INCLUDES, BUT IS NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOST PROFITS, LOSS OF DATA OR SOFTWARE, WORK STOPPAGE, COMPUTER FAILURE OR

MALFUNCTION OR IMPAIRMENT OF OTHER GOODS. IN NO EVENT WILL GENIVIA BE LIABLE FOR THE COSTS OF PROCUREMENT OF SUBSTITUTE SOFTWARE OR GENIVIA INC. STANDARD EDITION LICENSE AGREEMENT FOR COMMERCIAL USE 5 of 8 SERVICES. CUSTOMER ACKNOWLEDGE THAT THIS SOFTWARE IS NOT DESIGNED FOR USE IN ON-LINE EQUIPMENT IN HAZARDOUS ENVIRONMENTS SUCH AS OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR CONTROL, OR LIFECRITICAL APPLICATIONS. GENIVIA EXPRESSLY DISCLAIM ANY LIABILITY RESULTING FROM USE OF THE SOFTWARE IN ANY SUCH ON-LINE EQUIPMENT IN HAZARDOUS ENVIRONMENTS AND ACCEPTS NO LIABILITY IN RESPECT OF ANY ACTIONS OR CLAIMS BASED ON THE USE OF THE SOFTWARE IN ANY SUCH ON-LINE EQUIPMENT IN HAZARDOUS ENVIRONMENTS BY CUSTOMER. FOR PURPOSES OF THIS PARAGRAPH, THE TERM "LIFE-CRITICAL APPLICATION" MEANS AN APPLICATION IN WHICH THE FUNCTIONING OR MALFUNCTIONING OF THE SOFTWARE MAY RESULT DIRECTLY OR INDIRECTLY IN PHYSICAL INJURY OR LOSS OF HUMAN LIFE. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED CODE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

8. INFRINGEMENT INDEMNITY.

Genivia will defend at its expense any suit brought against Customer and will pay all damages finally awarded in such suit insofar as such suit is based on a claim that the Software as provided to Customer infringes a previously issued patent, trademark, trade secret or copyright, provided that Genivia is notified promptly of such claim and is given full and complete authority (including settlement authority consistent with the other terms and conditions of this Agreement), information and assistance by Customer for such defense. In the event that the Software is held in any such suit to infringe such a right and its use is enjoined, or if in the opinion of Genivia the Software is likely to become the subject of such a claim, Genivia at its own election and expense will either (i) procure for Customer the right to continue using the Software or (ii) modify or replace the Software so that it becomes noninfringing while giving substantially equivalent performance. In the event that (i) or (ii) above

are not, in Genivia's sole determination, obtainable using reasonable commercial efforts, then Genivia may terminate this Agreement and refund amount Customer paid Genivia under this Agreement for the Software which is the subject of such claim. The indemnification obligation shall not apply to infringement actions or claims to the extent that such actions or claims are caused solely by: (i) modifications made to the Software by a party other than Genivia; and (ii) the combination of the Software with items not supplied by Genivia or which Genivia has specifically not approved for combination with the Software.

9. GENERAL.

Neither party shall be liable hereunder by reason of any failure or delay in the performance of its obligations hereunder (except for the payment of money) on account of strikes, shortages, riots, insurrection, fires, flood, storm, explosions, acts of God, war, governmental action, labor conditions, earthquakes, material shortages or any other cause which is beyond the reasonable control of such party.

GENIVIA INC. STANDARD EDITION LICENSE AGREEMENT FOR COMMERCIAL USE 6 of 8

The Software is a "commercial item" as that term is defined at 48 C.F.R. 2.101, consisting of "commercial computer software" and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212. Consistent with 48 C.F.R. 12.212 and 48 C.F.R.

227.7202-1 through 227.7202-4, Customer will provide the Software to U.S. Government End Users only pursuant to the terms and conditions therein.

Customer may not delegate, assign or transfer this Agreement, the license(s) granted or any of Customer's rights or duties hereunder without Genivia's express prior written consent, except by way of merger or acquisition of the business of Customer, and any attempt to do so shall be void. Genivia may assign this Agreement, and its rights and obligations hereunder, in its sole discretion.

All Software and technical information delivered under this Agreement are subject to U.S. export control laws and may be subject to export or import regulations in other countries. Customer agrees to strictly comply with all such laws and regulations. The ECCN for the Software is 5D002.

This Agreement is governed by New York law, excluding any principle or provision that would call for the application of the law of any jurisdiction other than New York. Any action regarding

this Agreement shall be brought in a court of competent jurisdiction, federal or state, in the County of New York, New York, and Genivia consents to venue and jurisdiction in and service of process from such court.

10. DISCLOSURE OF CUSTOMER IDENTITY.

Genivia, Inc., will not disclose the identity of the Customer on its Web site, advertising, press releases, or other publicly released publicity without the Customers' prior written consent.