

One Identity Safeguard for Privileged Sessions 6.0.14 LTS

Release Notes

09 March 2023, 02:47

These release notes provide information about the One Identity Safeguard for Privileged Sessions release. For the most recent documents and product information, see [One Identity Safeguard for Privileged Sessions - Technical Documentation](#).

About this release

One Identity Safeguard for Privileged Sessions Version 6.0.14 LTS is a long-term supported maintenance release with resolved issues.

For more information on the resolved issues, see:

- [Resolved issues](#)

NOTE: For a full list of key features in One Identity Safeguard for Privileged Sessions, see [Administration Guide](#).

About the Safeguard product line

The One Identity Safeguard Appliance is built specifically for use only with the Safeguard privileged management software, which is pre-installed and ready for immediate use. The appliance is hardened to ensure the system is secured at the hardware, operating system and software levels. The hardened appliance approach protects the privileged management software from attacks while simplifying deployment and ongoing management -- and shortening the timeframe to value.

Safeguard privileged management software suite

Safeguard privileged management software is used to control, monitor, and govern privileged user accounts and activities to identify possible malicious activities, detect entitlement risks, and provide tamper proof evidence. The Safeguard products also aid incident investigation, forensics work, and compliance efforts.

The Safeguard products' unique strengths are:

- One-stop solution for all privileged access management needs
- Easy to deploy and integrate
- Unparalleled depth of recording
- Comprehensive risk analysis of entitlements and activities
- Thorough Governance for privileged account

The suite includes the following modules:

- **One Identity Safeguard for Privileged Passwords** automates, controls and secures the process of granting privileged credentials with role-based access management and automated workflows. Deployed on a hardened appliance, Safeguard for Privileged Passwords eliminates concerns about secured access to the solution itself, which helps to speed integration with your systems and IT strategies. Plus, its user-centered design means a small learning curve and the ability to manage passwords from anywhere and using nearly any device. The result is a solution that secures your enterprise and enables your privileged users with a new level of freedom and functionality.

- **One Identity Safeguard for Privileged Sessions** is part of One Identity's Privileged Access Management portfolio. Addressing large enterprise needs, Safeguard for Privileged Sessions is a privileged session management solution, which provides industry-leading access control, as well as session monitoring and recording to prevent privileged account misuse, facilitate compliance, and accelerate forensics investigations.

Safeguard for Privileged Sessions is a quickly deployable enterprise appliance, completely independent from clients and servers - integrating seamlessly into existing networks. It captures the activity data necessary for user profiling and enables full user session drill-down for forensics investigations.

- **One Identity Safeguard for Privileged Analytics** integrates data from Safeguard for Privileged Sessions to use as the basis of privileged user behavior analysis. Safeguard for Privileged Analytics uses machine learning algorithms to scrutinize behavioral characteristics and generates user behavior profiles for each individual privileged user. Safeguard for Privileged Analytics compares actual user activity to user profiles in real time and profiles are continually adjusted using machine learning. Safeguard for Privileged Analytics detects anomalies and ranks them based on risk so you can prioritize and take appropriate action - and ultimately prevent data breaches.

Resolved issues

The following is a list of issues addressed in this release.

Table 1: General resolved issues in One Identity Safeguard for Privileged Sessions version 6.0.14 LTS

Resolved Issue	Issue ID
<p>The "platformd" network settings fail on bionic kernel.</p> <p>This problem was caused by "pyroute2" library. It is replaced with an own implementation.</p> <p>This issue has been fixed by rewriting the corresponding network component.</p>	340429
<p>The SPS configuration synchronization could hang for an indefinitely long time.</p> <p>The SPS configuration synchronization could hang for an indefinitely long time due to a network issue between the central management and managed node. The configuration synchronization locks the configuration so any configuration change is locked by the blocked configuration synchronization.</p> <p>This issue has been fixed. A timeout of 20 seconds is added to configuration synchronization fetch to avoid the issue.</p>	340557
<p>Generate join data for SPS cluster only once to avoid conflict with repeated join request.</p> <p>SPS generated join data for every join request to SPS cluster. This meant that a repeated join request deleted the earlier join data on the node that was going to be managed, so if the user joined the SPS with the first join data, then the SPS cluster configuration ran into a conflict between the central management node and the managed node.</p> <p>This issue has been fixed. SPS now generates the join data only once, so the repeated join request will contain the same data, therefore the cluster configuration will not conflict.</p>	340558
<p>Issuer chain from server SSL certificate is dropped if the user committed any changes on the new REST based web UI.</p> <p>The REST API did not persist the issuer chain of the server SSL certificate. If a user committed any changes on the new REST based web UI or directly at the REST API, then the issuer chain was dropped from the server SSL certificate.</p> <p>The issue has been fixed and REST API persists the issuer chain of the server SSL certificate.</p>	340559
<p>Backoff strategy (with iteratively increasing time intervals of 1, 2, 4, ..., 16 minutes) is added to configuration synchronization in case of a permanent configuration synchronization error.</p>	340560

Resolved Issue**Issue ID**

Permanent configuration synchronization error can cause high system load, therefore a backoff strategy is added to configuration synchronization, which waits 1, 2, 4, ... 16 minutes iteratively before the next configuration synchronization, if the configuration synchronization error is still present.

External indexer certificates are too short-lived.

340591

In an attempt to fix PAM-11122, the default lifetime of several certificates was limited to 800 days, because browsers did not trust certificates with a longer validity period. Due to an error, the lifetime of the external indexer SSL certificate was limited too, despite its sole use was to encrypt the traffic between the external indexers and SPS, where web browsers are not involved.

However, after the external indexer SSL certificate expires, the external indexers will not be able to connect to SPS, and external indexing stops working. The workaround is to reconfigure the external indexers by disabling and re-enabling external indexing and resetting the external indexer configurations.

You are only affected by this issue if you enabled external indexing while running SPS version 6.0.4/6.4.0 or later, when the fix for PAM-11122 was released, since previous versions included external indexer certificates with a sufficiently long lifetime.

After the current fix, freshly generated external indexer certificates will again have a lifetime of 20 years.

Table 2: Resolved Common Vulnerabilities and Exposures (CVE) in release 6.0.14 LTS

Resolved Issue	Issue ID
bind9:	CVE-2022-2795
	CVE-2022-38177
	CVE-2022-38178
cloud-init:	CVE-2022-2084
curl:	CVE-2022-32221
	CVE-2022-35252
	CVE-2022-43552
dbus:	CVE-2022-42010
	CVE-2022-42011
	CVE-2022-42012

Resolved Issue	Issue ID
expat:	CVE-2022-40674
	CVE-2022-43680
gmp	CVE-2021-43618
gnutls28:	CVE-2021-4209
	CVE-2022-2509
heimdal:	CVE-2018-16860
	CVE-2019-12098
	CVE-2021-3671
	CVE-2021-44758
	CVE-2022-3116
	CVE-2022-3437
	CVE-2022-41916
	CVE-2022-42898
	CVE-2022-44640
	CVE-2022-45142
	isc-dhcp:
CVE-2022-2929	
jbigkit:	CVE-2017-9937
krb5:	CVE-2018-20217
	CVE-2022-42898
libice:	CVE-2017-2626
libjpeg-turbo:	CVE-2018-11813
	CVE-2020-17541
	CVE-2020-35538
libksba:	CVE-2022-3515
	CVE-2022-47629

Resolved Issue	Issue ID
libxml2:	CVE-2016-3709
	CVE-2022-2309
	CVE-2022-40303
	CVE-2022-40304
libxpm:	CVE-2022-44617
	CVE-2022-46285
	CVE-2022-4883
libxslt:	CVE-2019-5815
	CVE-2021-30560

Resolved Issue	Issue ID	
linux:	CVE-2021-33655	
	CVE-2021-33656	
	CVE-2022-1652	
	CVE-2022-1679	
	CVE-2022-1734	
	CVE-2022-2586	
	CVE-2022-2588	
	CVE-2022-2663	
	CVE-2022-2978	
	CVE-2022-3028	
	CVE-2022-3061	
	CVE-2022-3239	
	CVE-2022-34918	
	CVE-2022-3524	
	CVE-2022-3564	
	CVE-2022-3565	
	CVE-2022-3566	
	CVE-2022-3567	
	CVE-2022-3594	
	CVE-2022-3621	
	CVE-2022-3643	
	CVE-2022-36946	
	CVE-2022-40768	
	CVE-2022-42703	
	CVE-2022-42896	
	CVE-2022-43945	
	CVE-2022-45934	
	multipath-tools:	CVE-2022-41974

Resolved Issue	Issue ID
mysql-5.7:	CVE-2022-21515
	CVE-2022-21589
	CVE-2022-21592
	CVE-2022-21608
	CVE-2022-21617
	CVE-2023-21840
net-snmp:	CVE-2022-24805
	CVE-2022-24806
	CVE-2022-24807
	CVE-2022-24808
	CVE-2022-24809
	CVE-2022-24810
	CVE-2022-4479
	CVE-2022-44792
	CVE-2022-44793
nginx:	CVE-2022-41741
	CVE-2022-41742
open-vm-tools:	CVE-2022-31676

Resolved Issue**Issue ID**

openjdk-8:

CVE-2020-14779

CVE-2020-14781

CVE-2020-14782

CVE-2020-14792

CVE-2020-14796

CVE-2020-14797

CVE-2020-14798

CVE-2020-14803

CVE-2021-35550

CVE-2021-35556

CVE-2021-35559

CVE-2021-35561

CVE-2021-35564

CVE-2021-35565

CVE-2021-35567

CVE-2021-35578

CVE-2021-35586

CVE-2021-35588

CVE-2021-35603

CVE-2022-21248

CVE-2022-21282

CVE-2022-21283

CVE-2022-21293

CVE-2022-21294

CVE-2022-21296

CVE-2022-21299

CVE-2022-21305

CVE-2022-21340

CVE-2022-21341

Resolved Issue	Issue ID
openjdk-8:	CVE-2022-21349
	CVE-2022-21360
	CVE-2022-21365
	CVE-2022-21426
	CVE-2022-21434
	CVE-2022-21443
	CVE-2022-21476
	CVE-2022-21496
	CVE-2022-21540
	CVE-2022-21541
	CVE-2022-21619
	CVE-2022-21624
	CVE-2022-21626
	CVE-2022-21628
	CVE-2022-34169
openssl:	CVE-2022-4304
	CVE-2022-4450
	CVE-2023-0215
	CVE-2023-0286
openssl1.0:	CVE-2023-0215
	CVE-2023-0286
pam:	CVE-2022-28321
perl:	CVE-2020-16156
php7.2:	CVE-2022-31628
	CVE-2022-31629
	CVE-2022-31631
	CVE-2022-37454
pixman:	CVE-2022-44638
postgresql-10:	CVE-2022-2625

Resolved Issue	Issue ID
python-future:	CVE-2022-40899
python-setuptools:	CVE-2022-40897
python2.7:	CVE-2022-45061
python3.6:	CVE-2022-45061
rsync:	CVE-2022-37434
shadow:	CVE-2013-4235
sqlite3:	CVE-2020-35525
	CVE-2022-35737
strongswan:	CVE-2022-40617
sudo:	CVE-2023-22809
sysstat:	CVE-2022-39377
systemd:	CVE-2022-2526

Resolved Issue	Issue ID
tiff:	CVE-2020-19131
	CVE-2020-19144
	CVE-2022-0907
	CVE-2022-0908
	CVE-2022-0909
	CVE-2022-0924
	CVE-2022-1355
	CVE-2022-2056
	CVE-2022-2057
	CVE-2022-2058
	CVE-2022-22844
	CVE-2022-2867
	CVE-2022-2868
	CVE-2022-2869
	CVE-2022-34526
	CVE-2022-3570
	CVE-2022-3598
	CVE-2022-3599
	CVE-2022-3970
	vim:
CVE-2022-0943	
CVE-2022-1154	
CVE-2022-1616	
CVE-2022-1619	
CVE-2022-1620	
CVE-2022-1621	
wayland:	CVE-2021-3782
zlib:	CVE-2022-37434

System requirements

Before installing SPS 6.0.14 LTS, ensure that your system meets the following minimum hardware and software requirements.

The One Identity Safeguard for Privileged Sessions Appliance is built specifically for use only with the One Identity Safeguard for Privileged Sessions software that is already installed and ready for immediate use. It comes hardened to ensure the system is secure at the hardware, operating system, and software levels.

For the requirements about installing One Identity Safeguard for Privileged Sessions as a virtual appliance, see one of the following documents:

Supported web browsers and operating systems

⚠ CAUTION:

Since the official [support of Internet Explorer 9 and 10 ended in January, 2016](#), they are not supported in One Identity Safeguard for Privileged Sessions (SPS) version 4 F3 and later.

⚠ CAUTION:

Even though the One Identity Safeguard for Privileged Sessions (SPS) web interface supports Internet Explorer and Microsoft Edge in general, to replay audit trails you need to use Internet Explorer 11, and install the [Google WebM Video for Microsoft Internet Explorer plugin](#). If you cannot install Internet Explorer 11 or another supported browser on your computer, use the the Safeguard Desktop Player application. For details, see ["Replaying audit trails in your browser" in the Administration Guide and Safeguard Desktop Player User Guide](#).

❗ **NOTE:** SPS displays a warning message if your browser is not supported or JavaScript is disabled.

❗ **NOTE:** The minimum recommended screen resolution for viewing 's ('s) web interface is 1366 x 768 pixels on a 14-inch widescreen (standard 16:9 ratio) laptop screen. Screen sizes and screen resolutions that are equal to or are above these values will guarantee an optimal display of the web interface.

Supported browsers

The current version of Mozilla Firefox and Google Chrome, Microsoft Edge, and Microsoft Internet Explorer 11 or newer. The browser must support TLS-encrypted HTTPS connections, JavaScript, and cookies. Make sure that both JavaScript and cookies are enabled.

Supported operating systems

Windows 2008 Server, Windows 7, Windows 2012 Server, Windows 2012 R2 Server, Windows 8, Windows 8.1, Windows 10, Windows 2016, and Linux.

The SPS web interface can be accessed only using TLS-encryption and strong cipher algorithms.

Opening the web interface in multiple browser windows or tabs is not supported.

Safeguard Desktop Player system requirements

The Safeguard Desktop Player application supports the following platforms:

- **Microsoft Windows:**

64-bit version of Windows 7 or newer. Install the appropriate driver for your graphic card.

- **Linux:**

RHEL 6, CentOS 6, or newer. The Safeguard Desktop Player application will probably run on other distributions as well that have at least libc6 version 2.12 installed.

- **Mac:**

macOS High Sierra 10.13, or newer.

Installing the Safeguard Desktop Player application requires about 120MB disk space, and a temporarily used disk space to store the audit trails that are replayed. The size of the temporary files depends on the size of the replayed audit trails.

You can install the Safeguard Desktop Player application with user privileges.

Hardware specifications

The One Identity Safeguard for Privileged Sessions (SPS) appliances are built on high performance, energy efficient, and reliable hardware that are easily mounted into standard rack mounts.

The following sections provide detailed information of SPS appliances.

Product licensing

To enable a trial license

1. Visit the [Download Trials page](#), and navigate to **One Identity Safeguard for Privileged Sessions > Download Free trial**.
2. Complete the registration form, and click **Download Trial**.
3. You will receive the details on how to access your license key and the download the ISO files in email.

To enable a purchased commercial license

1. Navigate to **My Account > My License Assets** on the [support portal](#).
2. To access your license key, click **Retrieve Key** next to your product.
3. Once you have the license keys, navigate to **My Account > My Products** and click **Download** next to your product. The **Download Software** page is displayed.
4. Download the ISO image (install cdrom) of your product.

If you need help with accessing your license, navigate to the [Licensing Assistance](#) page, and follow the instructions on screen.

Upgrade and installation instructions

The One Identity Safeguard for Privileged Sessions appliance is built specifically for use only with the One Identity Safeguard for Privileged Sessions software that is already installed and ready for immediate use.

To upgrade to One Identity Safeguard for Privileged Sessions 6.0.14 LTS

⚠ CAUTION:

Due to a change in the underlying database, the upgrade process removes all risk scores generated earlier by One Identity Safeguard for Privileged Analytics. Sessions initiated after the upgrade will be scored again.

For step-by-step instructions on upgrading to SPS 6.0.14 LTS, see [Upgrade Guide](#).

NOTE: Due to legal reasons, installation packages of the external indexer application will be available only from the SPS web interface. After SPS versions 6.4 and 6.0.3 are released, the installation packages will be removed from our website.

About LTS releases

This is a long-term-supported (LTS) release, which means that it will be supported at least for 3 years after the release date.

For a full description of long-term-supported and feature releases, open the [SPS product page on the Support Portal](#) and navigate to **Product Life Cycle & Policies > Product Support Policies > Software Product Support Lifecycle Policy**.

If you have a physical appliance based on MBX hardware

One Identity recommends you to upgrade to SPS 6.0.14 LTS, if you are not running SPS on Pyramid hardware and any of the following is true:

NOTE: If you do not know the type of your hardware, see [If you have a physical appliance based on Pyramid hardware](#).

- You wish to take advantage of any of the new features.
- You are running a previous feature release.
- You are running a previous long-term-supported release.

If you have a physical appliance based on Pyramid hardware

Do NOT upgrade to SPS 6.0.14 LTS if you are running SPS on Pyramid hardware:

CAUTION:

Physical SPS appliances based on Pyramid hardware are not supported in 5 F1 and later releases. Do not upgrade to 5 F1 or later on a Pyramid-based hardware. The last supported release for this hardware is 5 LTS, which is a long-term supported release.

If you have purchased SPS before August, 2014 and have not received a replacement hardware since then, you have Pyramid hardware, so do not upgrade to SPS 5 F1 or later. If you have purchased SPS after August 2014, you can upgrade to 5 F1.

If you do not know the type of your hardware or when it was purchased, complete the following steps:

1. Login to SPS.
2. Navigate to **Basic Settings > Troubleshooting > Create support bundle**, click **Create support bundle**, and save the file.
3. Open a ticket at <https://support.oneidentity.com/create-service-request/>.
4. Upload the file you downloaded from SPS in Step 1.
5. We will check the type of your hardware and notify you.

Verify successful installation

Navigate to **Basic Settings > System > Version details** and verify that SPS is running version 6.0.14 LTS of the firmware. If not, it means that the upgrade process did not

complete properly and SPS performed a rollback to revert to the earlier firmware version. In this case, complete the following steps:

1. Navigate to **Basic Settings > Troubleshooting > Create support bundle** and click **Create support bundle**.
2. Save the resulting ZIP file.
3. [contact our Support Team](#) and send them the file. They will analyze its contents to determine why the upgrade was not completed and assist you in solving the problem.

More resources

To obtain more information, read the technical documentation or consult the community:

- [One Identity Safeguard for Privileged Sessions - Technical Documentation](#)
- [One Identity Community](#)

Globalization

This section contains information about installing and operating this product in non-English configurations, such as those needed by customers outside of North America. This section does not replace the materials about supported platforms and configurations found elsewhere in the product documentation.

This release is Unicode-enabled and supports any character set. In this release, all product components should be configured to use the same or compatible character encodings and should be installed to use the same locale and regional options. This release is targeted to support operations in the following regions: North America, Western Europe and Latin America, Central and Eastern Europe, Far-East Asia, Japan. It supports bidirectional writing (Arabic and Hebrew). The release supports Complex Script (Central Asia – India, Thailand).

This release has the following known capabilities or limitations: OCR is limited to Nuance supported languages. No support for RTL languages.

About us

One Identity solutions eliminate the complexities and time-consuming processes often required to govern identities, manage privileged accounts and control access. Our solutions enhance business agility while addressing your IAM challenges with on-premises, cloud and hybrid environments.

Contacting us

For sales and other inquiries, such as licensing, support, and renewals, visit <https://www.oneidentity.com/company/contact-us.aspx>.

Technical support resources

Technical support is available to One Identity customers with a valid maintenance contract and customers who have trial versions. You can access the Support Portal at <https://support.oneidentity.com/>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to videos at www.YouTube.com/OneIdentity
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product

Third-party contributions

This appendix includes the open source licenses and attributions applicable to One Identity Safeguard for Privileged Sessions.

GNU General Public License

Version 2, June 1991

1989, 1991 Free Software Foundation, Inc.

Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Version 2, June 1991

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software - to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps:

1. copyright the software, and
2. offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

Section 0

This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

Section 1

You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

Section 2

You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of [Section 1](#) above, provided that you also meet all of these conditions:

- a. You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b. You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c. If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user

how to view a copy of this License. (Exception: If the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

Section 3

You may copy and distribute the Program (or a work based on it, under [Section 2](#) in object code or executable form under the terms of [Section 1](#) and [Section 2](#) above provided that you also do one of the following:

- a. Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b. Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c. Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

Section 4

You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

Section 5

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

Section 6

Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

Section 7

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

Section 8

If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

Section 9

The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

Section 10

If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY Section 11

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.

Section 12

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.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.> Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program 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. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type "show w". This is free software, and you are welcome to redistribute it under certain conditions; type "show c" for details.

The hypothetical commands "show w" and "show c" should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than "show w" and "show c" ; they could even be mouse-clicks or menu items-- whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program "Gnomovision" (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989 Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU Lesser General Public License

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method:

1. we copyright the library, and
2. we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the Lesser General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

Section 0

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed

under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

Section 1

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

Section 2

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of [Section 1](#) above, provided that you also meet all of these conditions:

- a. The modified work must itself be a software library.
- b. You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c. You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d. If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still

operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, [Subsection 2d](#) requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

Section 3

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

Section 4

You may copy and distribute the Library (or a portion or derivative of it, under [Section 2](#)) in object code or executable form under the terms of [Section 1](#) and [Section 2](#) above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of [Section 1](#) and [Section 2](#) above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

Section 5

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. [Section 6](#) states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under [Section 6](#).)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of [Section 6](#). Any executables containing that work also fall under [Section 6](#), whether or not they are linked directly with the Library itself.

Section 6

As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a. Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under [Section 1](#) and [Section 2](#) above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b. Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on

the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

- c. Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in [Subsection 6a](#), above, for a charge no more than the cost of performing this distribution.
- d. If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e. Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

Section 7

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a. Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b. Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

Section 8

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

Section 9

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

Section 10

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

Section 11

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

Section 12

If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

Section 13

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

Section 14

If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY Section 15

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "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 LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

NO WARRANTY Section 16

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 LIBRARY 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 LIBRARY (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 LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change.

You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.> Copyright (C) <year>
<name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library 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. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

License attributions

OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<https://www.openssl.org/>). This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)

Botan cryptographic library license

Botan <http://botan.randombit.net/> is distributed under these terms:

Copyright

1999-2013,2014 Jack Lloyd

2001 Peter J Jones

2004-2007 Justin Karneges

2004 Vaclav Ovsik
2005 Matthew Gregan
2005-2006 Matt Johnston
2006 Luca Piccarreta
2007 Yves Jerschow
2007-2008 FlexSecure GmbH
2007-2008 Technische Universitat Darmstadt
2007-2008 Falko Strenzke
2007-2008 Martin Doering
2007 Manuel Hartl
2007 Christoph Ludwig
2007 Patrick Sona
2010 Olivier de Gaalon
2012 Vojtech Kral
2012-2014 Markus Wanner
2013 Joel Low

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.

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 HOLDER 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 2023 One Identity LLC.

ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of One Identity LLC .

The information in this document is provided in connection with One Identity products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of One Identity LLC products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, ONE IDENTITY ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ONE IDENTITY BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ONE IDENTITY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. One Identity makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. One Identity does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

One Identity LLC.
Attn: LEGAL Dept
4 Polaris Way
Aliso Viejo, CA 92656

Refer to our Web site (<http://www.OneIdentity.com>) for regional and international office information.

Patents


One Identity is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <http://www.OneIdentity.com/legal/patents.aspx>.

Trademarks

One Identity and the One Identity logo are trademarks and registered trademarks of One Identity LLC. in the U.S.A. and other countries. For a complete list of One Identity trademarks, please visit our website at www.OneIdentity.com/legal. All other trademarks are the property of their respective owners.

Legend

-  **WARNING:** A WARNING icon highlights a potential risk of bodily injury or property damage, for which industry-standard safety precautions are advised. This icon is often associated with electrical hazards related to hardware.

-  **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.