

Key Technical Differences Between SLE 15 and SUSE Linux 16

WHAT?

This article addresses common technical questions about installing and using SUSE Linux 16.

WHY?

SUSE Linux 16 introduces significant changes compared to its predecessor, SLE 15. This article helps you navigate those differences.

EFFORT

It takes approximately 20 minutes to read the article.

GOAL

You will have a clear understanding of what has been added or removed in SUSE Linux 16.

Publication Date: 05 Mar 2026

Contents

- 1 Changes in the installation process 3
- 2 Migration from previous SLE releases 4
- 3 Changes in the base system and the boot process 4
- 4 Changes in security 8

- 5 Changes in kernel and storage 9
- 6 Changes in virtualization 10
- 7 Changes in the desktop environment 10
- 8 Changes in the system management 11
- 9 Legal Notice 12
- A GNU Free Documentation License 12

1 Changes in the installation process

This section answers common questions about the new installer and deployment process.

1.1 What happened to YaST?

YaST is the installation and configuration tool used on SUSE Linux Enterprise 15 that also can be used from the running system. SUSE Linux 16 comes with installer images based on a new technology called Agama. The sole purpose of Agama is to install a new system and not to serve as a management tool like YaST was.

Agama images are delivered in several flavors. To name several of them:

- minimal: for installation from the network
- full: with a full copy of the package repositories for all product flavors
- remote installation: deployment using the PXE client

Agama supports unattended installation and maintains a high degree of compatibility with AutoYaST's file format and data schema. However, Agama is not a fully compatible drop-in replacement for AutoYaST. Although you can use many existing profiles, some adjustments to the profiles are expected. Additionally, a new, more powerful profile schema based on JSON/Jsonnet is also available.

You can install SUSE Linux 16 using repositories provided by a local RMT server inside the customer's network. There is no RMT version based on SUSE Linux 16 yet. However, RMT 15 is fully supported as an installation source for 16.

1.2 Where is the rescue system?

The Agama installation images no longer come with a separate rescue system. In a future release of 16, we plan to provide a separate image for this purpose.

To enter a rescue shell (without starting Agama), you can use the live media. Alternatively, you can use the Agama image to access the installed for diagnosis and repair in any of the following ways:

- Boot the installation image, switch to another virtual console and log in as `root`.
- Boot the installation image and open a terminal window.
- Boot the installation image, and before starting the Linux kernel, add `3` to the kernel CLI. This will boot into runlevel 3, skipping the graphical system and thus the installer.

Any of these methods will give you a root shell that should allow you to access your root partition. Many of the tools needed to repair or recover a potentially broken installation should be available inside the Agama live media.

2 Migration from previous SLE releases

For migration from SLE 15 to SUSE Linux 16, we use a new approach to migration based on a technology called *SUSE Migration Services*.

This technology uses a special medium that attempts the migration in several steps after booting. The first, pre-migration step analyzes the existing installation to identify problematic settings that cannot be converted automatically, such as AppArmor profiles. Such issues are flagged, and you are given the option to either accept an incomplete migration or cancel the process. In the second step, the system boots into a special medium that performs the actual migration. After that, the system boots into the migrated system and performs optional final tasks.

Migration of a running system is no longer provided.

SUSE Linux 16.1 is the target release for delivering full migration support. 16.0 provides limited migration capabilities, supporting only migrations from SLE 15 SP7. Furthermore, the tools in 16.0 do not cover all aspects of migration.

3 Changes in the base system and the boot process

Let us dive into the foundational changes affecting system services, core libraries, and essential utilities.

3.1 Are there any changes to the boot loader in SLE 16?

The boot loader in SUSE Linux 16 is GRUB 2 2.12. BLS and `systemd-boot` are not used now, but may be added in the future.

On AMD64/Intel 64, full disk encryption is supported using PCR to unlock the disk if the TPM chip supports TPM v2.1 and later.

3.2 Where have the configuration files from `/etc` been moved?

SUSE continues to move configuration files delivered by SUSE from `/etc` to `/usr`. This solution enables you to maintain your settings in `/etc` without worrying about maintenance updates overwriting them. Even though many packages follow the paradigm, certain tools are still shipped with regular configuration files located in `/etc`. The process is still ongoing, and we expect that the other tools will be adapted in a future SUSE Linux release.

You have three options for how to modify the configuration of a service or tool. For example, the tool `frobicator` usually has configuration files in `/etc/frob.conf`. Starting with SUSE Linux 16.0, the default configuration file of the tool is `/usr/etc/frob.conf`. Do not modify this file as it may be overwritten by future maintenance updates. To apply your custom changes, you have the following options:

- Place your own copy of the configuration file into `/etc/frob.conf`, which has a precedence and the configuration file supplied by SUSE is then ignored.
- You can place drop-in files into `/etc/frob.d`. The tool first loads the configuration from `/usr/etc/frob.conf` and then updates it using the drop-in files in `/etc/frob.d`.



Important: Possible unexpected errors

This solution can lead to unexpected results if you have tools that try to update configuration files in `/etc` blindly. In particular, creating an empty `/etc/ssh/sshd_config` file may result in getting locked out of your system.

For more information and a list of affected packages, refer to [configuration split details \(https://en.opensuse.org/openSUSE:Packaging_UsrEtc\)](https://en.opensuse.org/openSUSE:Packaging_UsrEtc).

3.3 Are there any changes in the way the base system works in general?

Yes, `/tmp` is no longer persistent on reboot but uses `tmpfs`.

3.4 Do you support transactional updates in SUSE Linux Enterprise Server?

Currently, transactional updates are not supported on SUSE Linux Enterprise Server. The transactional update is supported by another product—SUSE Linux Micro.

3.5 Removed technologies in the base system

The following technologies have been removed:

- NIS aka Yellow Pages
- `nscd`: The name service caching daemon
- `wicked`: Replaced by NetworkManager for managing network connections
- AppArmor: SELinux is used exclusively as the security framework
- SystemV init support

3.6 What architecture level sets are supported?

The following table summarizes supported architecture level sets.

TABLE 1: SUPPORTED ARCHITECTURE LEVEL SETS

| Architecture | Supported version | Notes |
|----------------|-------------------|--|
| AMD64/Intel 64 | AMD64/Intel 64-v2 | Optimized v3 versions of certain shared libraries are now available. These libraries, which follow the naming scheme <code>libfoo-x86-64-v3</code> , are installed automatically |

| Architecture | Supported version | Notes |
|------------------|--------------------|---|
| | | on systems that support the new instruction set. |
| Intel 32-bit | Not supported | A 32-bit runtime is no longer supported, and SUSE does not provide any 32-bit libraries anymore. |
| IBM POWER | POWER 9 and higher | SUSE Linux 16.0 is supported on POWER 10 and POWER 11. Even though SUSE Linux 16.0 continues to work on POWER 9 (except for KVM), this is not supported by IBM. |
| IBM POWER 32-bit | Not supported | Support for a 32-bit runtime has been discontinued since SLES 15 SP3. |
| IBM IBM Z | IBM Z14 | |
| AArch64 | Armv8.0-A | No change from SLE 15. |

3.7 Do you still support legacy BIOS on AMD64/Intel 64?

The default for fresh installations of SUSE Linux 16.0 is UEFI. Support for legacy BIOS is deprecated and will be removed in a future version of the product. However, support for legacy BIOS is provided for backward compatibility in the following scenarios:

- migration of VMs that use Legacy BIOS
- certain instances in public clouds
- systems upgraded from SLE 15

Some features may not be available when using Legacy BIOS, such as full disk encryption with TPM.

4 Changes in security

This section covers the most critical security updates and changes.

4.1 What is the status of SELinux?

In standard installations, SELinux is enabled by default and set to enforcing mode. When configuring a SLES or SLES for SAP applications system to run SAP, SELinux is changed to permissive mode transparently.

For details on SELinux, refer to the [Understanding SELinux Basics \(https://documentation.suse.com/sles/16.0/html/SLES-SELinux/\)](https://documentation.suse.com/sles/16.0/html/SLES-SELinux/) [↗](#) article.

4.2 Are you changing the rules for root access?

Starting with SUSE Linux 16, root access is modified to be more secure by default. For users with physical access to the system (that is, text console, serial, graphical desktop), login as root is still allowed by default. There is no change in behavior compared to SLE 15. However, for remote access via SSH, root login is **disabled** when trying to use password authentication. To allow it, install the openssh-server-config-rootlogin package. Also, root login is still possible when you configure SSH keys in /root/.ssh/authorized_keys*.

4.3 What about sudo?

In SLE (15 and older), sudo is configured to prompt for the password of the target user (the account you want to switch to). In SUSE Linux 16, we have strengthened the security of the default setup:

- The first user created by the installer is now added to the wheel group.
- When using sudo -i, kexec or polkit for authentication, the following rules apply:
 - If the user is part of the wheel group, they are prompted for their own password, rather than the root password.
 - If the user is **not** part of the wheel group, they are prompted for the root password.

This new policy is implemented with the `sudo-policy-wheel-auth-self` package, which is installed by default on new SUSE Linux 16.0 systems.

5 Changes in kernel and storage

Explore the updates at the core of the system, from the Linux kernel to the storage stack.

5.1 Kernel version and kernel subsystem changes

Support of the following core kernel subsystems has been dropped:

- quota v1
- cgroups v1 interface

SUSE Linux 16.0 is delivered with kernel version 6.12.

5.2 Support status of file systems

The following table provides an overview of the file system status in SUSE Linux 16:

TABLE 2: SUPPORTED ARCHITECTURE LEVEL SETS

| File system | Status |
|-------------|---|
| reiserfs | Dropped |
| hfsplus | Dropped |
| UFS | Dropped |
| quota v1 | Dropped |
| ocfs2 | Dropped. Use gfs2 instead (available only on SLE HA). |
| btrfs | Supported and set as the default file system |

| File system | Status |
|-------------|--|
| xf | Supported |
| ext | Supported |
| gfs2 | Supported—both read and write operations. Available on SLE HA only. |

5.3 How do I configure Kdump?

On SLE 15 you could configure Kdump using YaST. However, with YaST not available on SUSE Linux 16, the **kdumptool** tool is now used to configure Kdump. You can control settings using the following variables in `/etc/sysconfig/kdump`:

- `KDUMP_CRASHKERNEL`
- `KDUMP_UPDATE_BOOTLOADER`

Using **kdumptool**, you can perform the following tasks:

- Check whether the running kernel has the expected crashkernel settings
- Update the bootloader configuration to enforce the expected settings on next reboot
- Disable kdump by removing crashkernel settings from your boot loader configuration

6 Changes in virtualization

SUSE Linux 16 continues to support KVM. Support for Xen has been dropped.

7 Changes in the desktop environment

The desktop product has been discontinued. SUSE Linux 16 is available with a minimal desktop environment based on GNOME 48, including essential applications such as the Firefox Web browser, file browser, viewers for PDFs and images, and so on.

Changes in desktop technologies:

- X11 is no longer shipped. Desktop sessions now use Wayland.
- The VNC server is no longer shipped. Remote desktop and sharing are now provided using RDP.
- The GTK2, Qt5 and wxWidgets widget libraries have been dropped.

8 Changes in the system management

Here, we answer your questions about the changes to system administration tools and automation frameworks.

8.1 Which management frameworks are available?

The YaST management tool is not shipped anymore, so for general 1:1 management tasks you can use the delivered Cockpit. However, Cockpit does not provide a full replacement, and some modules YaST used are missing in it. For details regarding Cockpit, refer to the [Cockpit guide \(https://documentation.suse.com/sles/16.0/html/SLES-cockpit/\)](https://documentation.suse.com/sles/16.0/html/SLES-cockpit/).

For management automation, SUSE Linux 16 supports Ansible. SUSE Multi-Linux Manager is another option for managing SUSE Linux 16 installations that use Salt internally. However, SUSE Linux 16 itself does not contain Salt packages.

Support of WBEM has been dropped (in SLE 15 it was provided by the SBLIM packages).

8.2 What has changed in the update stack and package management?

In SUSE Linux 16, there are no modules anymore to distinguish between, for example, the base system, server applications or development packages. There are also no longer separate channels for pool and update. These changes, together with improvements to zypper, should result in better performance when applying updates. SUSE Linux minor releases (aka 16.1, 16.2 and so on) will continue to have separate repositories.

SUSE Linux 16 instances can register against (and receive updates from) an RMT server. Currently, the RMT service has to run on a SLE 15 instance as we do not support the RMT service on SUSE Linux 16 yet. RMT on SUSE Linux 16 is expected to be delivered with SUSE Linux 16.1.

9 Legal Notice

Copyright© 2006–2026 SUSE LLC and contributors. All rights reserved.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or (at your option) version 1.3; with the Invariant Section being this copyright notice and license. A copy of the license version 1.2 is included in the section entitled “GNU Free Documentation License”.

For SUSE trademarks, see <https://www.suse.com/company/legal/>. All other third-party trademarks are the property of their respective owners. Trademark symbols (®, ™ etc.) denote trademarks of SUSE and its affiliates. Asterisks (*) denote third-party trademarks.

All information found in this book has been compiled with utmost attention to detail. However, this does not guarantee complete accuracy. Neither SUSE LLC, its affiliates, the authors, nor the translators shall be held liable for possible errors or the consequences thereof.

A GNU Free Documentation License

Copyright (C) 2000, 2001, 2002 Free Software Foundation, Inc. 51 Franklin St, 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.

0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or non-commercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input

to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

2. VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or non-commercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

3. COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.
- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.
- L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.
- M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version.
- N. Do not retitle any existing section to be Entitled "Endorsements" or to conflict in title with any Invariant Section.
- O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties--for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled "History" in the various original documents, forming one section Entitled "History"; likewise combine any sections Entitled "Acknowledgements", and any sections Entitled "Dedications". You must delete all sections Entitled "Endorsements".

6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

8. TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided for under this License. Any other attempt to copy, modify, sublicense or distribute the Document 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.

10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation 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. See <https://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation.

ADDENDUM: How to use this License for your documents

```
Copyright (c) YEAR YOUR NAME.  
Permission is granted to copy, distribute and/or modify this document  
under the terms of the GNU Free Documentation License, Version 1.2  
or any later version published by the Free Software Foundation;  
with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts.  
A copy of the license is included in the section entitled "GNU  
Free Documentation License".
```

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with...Texts." line with this:

```
with the Invariant Sections being LIST THEIR TITLES, with the  
Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.
```

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.