

Modules and Extensions Quick Start

This Quick Start gives you an overview of the modules and extensions available for the SUSE Linux Enterprise family. Learn about their purpose and features, and how to manage them.

Publication Date: February 15, 2023

Contents

- 1 Introduction to modules and extensions 2
- 2 Modules and extensions for the SUSE Linux Enterprise product family 3
- 3 Installing and managing modules and extensions 12
- 4 Module membership of packages 21
- 5 Legal notice 23
- 6 GNU free documentation license 24

1 Introduction to modules and extensions

Starting with SUSE Linux Enterprise Desktop 15, the installation medium consists of only the Unified Installer: a minimal system for deploying, updating and registering SUSE Linux Enterprise Desktop. During deployment you can add functionality by selecting modules and extensions to be installed on top of the Unified Installer.

Technically, modules and extensions are very similar. Both can be managed with YaST or the command line tool **SUSEConnect**. Both modules and extensions add a set of online repositories (`main`, `update`, `source`, `debug`) containing all necessary packages. Additionally, both may add partitioning proposals and system roles that can be chosen during deployment.

However, there are significant differences between modules and extensions:

Modules

Modules allow you to shape the product according to your needs. Each module has a clearly defined scope ranging from tools for Web Development and Scripting, through a Public Cloud, all the way to the SUSE Package Hub, offering community-managed packages.

Modules enable you to provide only the set of packages required for the machine's purpose, making the system lean, fast, and more secure. This modular approach also makes it easy to provide tailor-made images for container and cloud environments.

Modules can be added or removed at any time during the lifecycle of the system. This allows you to easily adjust the system to changing requirements.

Modules are part of your SUSE Linux Enterprise Desktop subscription and therefore free of charge. They differ from the base of SUSE Linux Enterprise Desktop only by their lifecycle. Except for the SUSE Package Hub module, SUSE provides L3 support for almost all packages provided by modules. For more information about the SUSE Linux Enterprise Desktop support statement refer to the [Release Notes \(https://www.suse.com/releasenotes/x86_64/SUSE-SLES/15-SP4/#intro-support\)](https://www.suse.com/releasenotes/x86_64/SUSE-SLES/15-SP4/#intro-support).

Extensions

Extensions provide advanced capabilities for tasks such as live patching and high availability clustering to SUSE Linux Enterprise Desktop. They are offered as subscriptions and require a registration key that is liable for costs. Usually, extensions have their own release notes that are available from <https://www.suse.com/releasenotes>.

1.1 Support

L3 support is generally provided for packages except for [SUSE Package Hub](#) and third-party modules. To check the support level for a package, run `zypper info PACKAGE`.

[Long-Term Service Pack Support \(LTSS\)](#) is available for most modules and extensions. For more information, refer to [Long-Term Service Pack Support \(https://www.suse.com/products/long-term-service-pack-support/\)](https://www.suse.com/products/long-term-service-pack-support/).

Some modules and extensions also include [Extended Service Pack Overlay Support \(ESPOS\)](#). For more information, refer to [Extended Service Pack Overlay Support \(https://www.suse.com/support/policy-products/#hpc\)](https://www.suse.com/support/policy-products/#hpc).

For more information on support and lifecycles, refer to the [SUSE Technical Support Policy \(https://www.suse.com/support/policy/\)](https://www.suse.com/support/policy/) and the [Product Lifecycle Support Policies \(https://www.suse.com/support/policy-products/\)](https://www.suse.com/support/policy-products/). For a complete list of lifecycle dates by product, refer to the [Product Support Lifecycle \(https://www.suse.com/lifecycle/\)](https://www.suse.com/lifecycle/) page.

2 Modules and extensions for the SUSE Linux Enterprise product family

The following modules and extensions are available within the SUSE Linux Enterprise product family:

- *Basesystem*
- *Containers*
- *Desktop Applications*
- *Development Tools*
- *High Availability*
- *High Performance Computing*
- *Legacy*
- *Live Patching*
- *NVIDIA Compute*
- *Public Cloud*

- *Python 3*
- *Real Time*
- *SAP Applications*
- *Server Applications*
- *SUSE Package Hub*
- *Transactional Server*
- *Web and Scripting*
- *Workstation Extension*

Please note that the availability depends on the product. Not all modules and extensions are available for all products. Some modules are included in one product but also available as extension for another.

2.1 Basesystem

This module adds a basic system on top of the Installer. It is required by all other modules and extensions. The scope of an installation that only contains the base system is comparable to the minimal system installation pattern of previous SUSE Linux Enterprise Desktop versions. This module is selected for installation by default and should not be deselected.

- **Dependencies:** none
- **Availability:** Default on all products
- **Lifecycle:** 10 years
- **Extended Support:** 3 years LTSS
- **Support level:** L3

2.2 Certifications

This module contains the FIPS 140-2 certification packages.

- **Depends on:** Basesystem
- **Available for:** SLES, SLES-SAP, SUSE Linux Enterprise Real Time, SLE-HPC
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Support level:** L3

2.3 Containers

This module contains packages relating to containers, including the container engine and core container-related tools such as on-premise registry.

- **Dependencies:** Basesystem
- **Availability:** SLES, SLES-SAP, SLE-HPC
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Support level:** L3

2.4 Desktop Applications

This module adds a graphical user interface (Wayland) and essential desktop applications to the system. This module is selected for installation by default; deselecting it is not recommended.

- **Dependencies:** Basesystem
- **Availability:** SLES, SLED (default), SLE-WE (default), SLES-SAP, SLE-RT (default), SLE-HPC
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.5 Development Tools

This module contains compilers (including `gcc`) and libraries required for compiling and debugging applications. Replaces the former Software Development Kit (SDK).

Dependencies: Basesystem, Desktop Applications

- **Availability:** SLES, SLES-SAP, SLED, SLE-RT (default), SLE-HPC
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.6 High Availability

This extension provides high-availability clustering technologies that can be deployed in physical and/or virtual environments.

High Availability is included in the subscription for SLES-SAP as a module. It is also available as an extension for SLES and SLE-HPC. For more information about SUSE Linux Enterprise High Availability Extension, refer to <https://www.suse.com/products/highavailability>.

- **Dependencies:** Basesystem, Server Applications
- **Availability:** SLES, SLES-SAP (included), SLE-HPC, SUSE Linux Enterprise Real Time
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.7 High Performance Computing

This extension contains tools and libraries related to High Performance Computing (HPC).

- **Dependencies:** Basesystem
- **Availability:** SLE-HPC (included)
- **Lifecycle:** 10 years

- **Extended support:** 1 year ESPOS, 3 years LTSS
- **Level:** L3

2.8 Legacy

This module helps you with migrating applications from earlier versions of SUSE Linux Enterprise Desktop and other systems to SLES 15 SP4, by providing packages which are discontinued on SUSE Linux Enterprise. Packages in this module are selected based on the requirement for migration and the level of complexity of configuration.

This module is recommended when migrating from a previous product version.

Please note that this module has a different lifecycle than some of its packages. Not all packages are supported for the complete lifecycle of the module, but depend on migration requirements and upstream lifecycles.

- **Dependencies:** Basesystem, Server Applications
- **Availability:** SLES, SLES-SAP
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.9 Live Patching

This extension provides packages to update critical components in SUSE Linux Enterprise without shutting down your system, which reduces planned downtime and increases service availability.

- **Dependencies:** Basesystem
- **Availability:** SLES, SLES-SAP, SLE-HPC
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.10 NVIDIA Compute

This module contains the NVIDIA CUDA (Compute Unified Device Architecture) drivers. The software in this module is provided by NVIDIA under the [CUDA End User License Agreement \(http://docs.nvidia.com/cuda/eula/\)](http://docs.nvidia.com/cuda/eula/) and is not supported by SUSE.



Tip: Importing third party GPG keys

As this module is provided by a third party, the repository's GPG key is unknown to the system. To activate the module and import the key with SUSEConnect, use the `--gpg-auto-import-keys` option:

```
suseconnect -p sle-module-NVIDIA-compute/15/x86_64 --gpg-auto-import-keys
```

Alternatively, you can activate the module with **yast registration** or during installation.



Important: Combining Workstation Extension and NVIDIA Compute module is unsupported

The Workstation Extension provides drivers for NVIDIA graphics cards. These drivers share some packages with CUDA, however versions may differ. It is therefore neither recommended nor supported to enable both the NVIDIA Compute Module and the Workstation Extension at the same time.

- **Dependencies:** Basesystem
- **Availability:** SLES and SLE-HPC on AMD64/Intel 64 and AArch64
- **Support:** Software in this module is provided by NVIDIA and is not supported by SUSE

2.11 Public Cloud

This module Contains all tools required to create images for deploying SUSE Linux Enterprise Desktop in cloud environments. For example: Amazon Web Services (AWS), Microsoft Azure, Google Compute Platform, or OpenStack.

- **Dependencies:** Basesystem, Server Applications
- **Availability:** SLES, SLES-SAP, SLE-HPC

- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.12 Python 3

This module contains the most recent version of selected Python 3 packages. It has a different lifecycle than SUSE Linux Enterprise itself. Packages in this module are frequently updated to new upstream versions.

- **Dependencies:** Basesystem
- **Availability:** SLES, SLES-SAP, SLE-HPC, SLED
- **Lifecycle:** 10 years
- **Extended support:** None
- **Level:** L3

2.13 Real Time

This extension aims to reduce the latency and increase the predictability and reliability of time-sensitive mission-critical applications.

Packages in this module are generally supported until a newer version of the package is released or the package is dropped from the module.

- **Dependencies:** Basesystem, Desktop Applications, Development Tools, Server Applications
- **Availability:** SLE-RT (included)
- **Lifecycle:** 10 years
- **Extended support:** None
- **Level:** L3

2.14 SAP Applications

This module contains packages specific to SLES-SAP. It has a different lifecycle than SUSE Linux Enterprise itself. Subscriptions for SUSE Linux Enterprise Server for SAP Applications include 1.5 years of General Support plus 3 years of Extended Service Pack Overlap Support (ESPOS) for each service pack. This eliminates the need for customers to purchase Long Term Service Pack Support (LTSS) until the final service pack of a release.


- **Dependencies:** Basesystem
- **Availability:** SLES-SAP (included)
- **Lifecycle:** 10 years
- **Extended support:** 3 years ESPOS, 3 years LTSS for last SP
- **Level:** L3

2.15 Server Applications

This module adds server functionality by providing network services such as DHCP server, name server, or Web server.

- **Dependencies:** Basesystem
- **Availability:** SLES (default), SLES-SAP, SLE-RT (default), SLE-HPC
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.16 SUSE Package Hub

This module provides access to packages for SUSE Linux Enterprise Desktop maintained by the openSUSE community. These packages are delivered without L3 support but do not interfere with the supportability of SUSE Linux Enterprise Desktop. For more information, refer to <https://packagehub.suse.com/> .

- **Dependencies:** Basesystem
- **Availability:** SLES, SLES-SAP, SLED, SLE-HPC
- **Lifecycle:** None
- **Extended support:** None
- **Level:** None

2.17 Transactional Server

This module provides SUSE Linux Enterprise systems with a method of updating the operating system and its packages in an entirely ‘atomic’ way. Updates are either applied to the system all together in a single transaction, or not at all. This happens without influencing the running system. If an update fails, or if a successful update is deemed to be incompatible or incorrect, you can discard it immediately and return to its previous functioning state.

- **Dependencies:** Basesystem
- **Availability:** SLES
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.18 Web and Scripting

This module contains packages intended for a running Web server.

- **Dependencies:** Basesystem, Server Applications
- **Availability:** SLES, SLES-SAP, SLE-HPC
- **Lifecycle:** 10 years
- **Extended support:** 3 years LTSS
- **Level:** L3

2.19 Workstation Extension

This extension offers additional desktop applications and libraries. It is installed by default on SUSE Linux Enterprise Desktop. Adding the Workstation Extension to a SUSE Linux Enterprise Server installation allows you to seamlessly combine both products to create a fully featured server workstation. For more information, refer to <https://www.suse.com/products/workstation-extension>.



Warning: Unsupported kernel modules

The Workstation Extension installs the `kernel-default-extra` package, which includes additional kernel modules for desktop usage and enables loading of unsupported modules. If actually loaded, these modules may compromise your SLE support status.

Please evaluate if your hardware really requires additional kernel modules, and if so, test this expanded driver set in addition to the default set from the `kernel-default` package for possible configuration conflicts.

To prevent installation of the `kernel-default-extra` package, run `zypper addlock kernel-default-extra`.

- **Dependencies:** Basesystem, Desktop
- **Availability:** SLES, SLED (default), SLES-SAP
- **Lifecycle:** 10 years
- **Extended support:** None
- **Level:** mixed L2/L3 (depending on package)

3 Installing and managing modules and extensions

Modules and extensions can be installed when initially setting up the system and on an existing SUSE Linux Enterprise Desktop installation.

3.1 Installing modules and extensions during system installation

Modules and extensions can easily be installed when setting up the system. The respective steps are part of the installation routine. Following the default installation path, this requires network access to contact the SUSE Customer Center or a local registration server ([SUSE Manager \(https://www.suse.com/products/suse-manager/\)](https://www.suse.com/products/suse-manager/) or Repository Mirroring Tool), which provide the respective repositories. Offline installation is supported, too. In that case an additional installation media is required. For detailed information refer to *Book "Deployment Guide", Chapter 4 "Installation steps", Section 4.7 "Extension and module selection"*.

3.2 Installing modules and extensions with YaST

To install modules & extensions from the running system, you need to make sure your system is registered with the SUSE Customer Center or a local registration server. If you have not done so during the installation, refer to *Book "Deployment Guide", Chapter 5 "Registering SUSE Linux Enterprise and managing modules/extensions", Section 5.2 "Registering from the installed system"* for instructions.



Tip: SUSE Linux Enterprise Desktop

As of SUSE Linux Enterprise 12, SUSE Linux Enterprise Desktop is not only available as a separate product, but also as a Workstation Extension for SUSE Linux Enterprise Server. If you register at the SUSE Customer Center, the Workstation Extension can be selected for installation. Note that installing it requires a valid registration key.

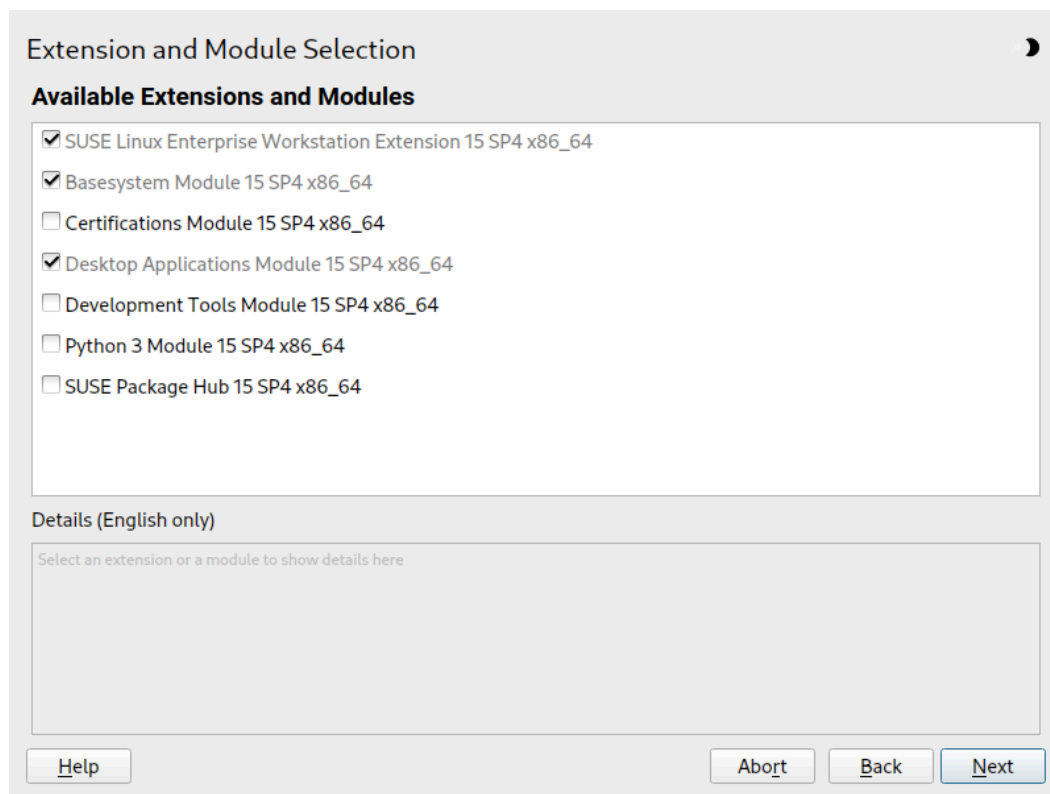


Note: Viewing already installed add-ons

To view already installed add-ons, start YaST and select *Software > Add-Ons*

PROCEDURE 1: INSTALLING ADD-ONS AND EXTENSIONS FROM ONLINE CHANNELS WITH YAST

1. Start YaST and select *Software > System Extensions*. YaST connects to the registration server and displays a list of *Available Extensions and Modules*.



Note: Available extensions and modules

The amount of available extensions and modules depends on the registration server. A local registration server may only offer update repositories and no additional extensions.

2. Click an entry to see its description.
3. To add modules or extensions, select all components you want to install. Note that all extensions require additional registration codes which are liable for cost.
4. Click *Next* to proceed.
5. Depending on the repositories to be added for the extension or module, you may be prompted to import the repository's GPG key or asked to agree to a license.
6. The YaST package manager opens to install release-packages for each module and, depending on your choice of modules and extensions, additional packages. It is strongly recommended *not to deselect* any of the preselected packages; you may, however, add additional packages.

Choose *Accept* and *Finish* to conclude the process.

7. If needed, adjust the repository *Properties* as described in Book “Administration Guide”, Chapter 8 “Installing or removing software”, Section 8.4.2 “Managing repository properties”.



Tip: Module dependencies

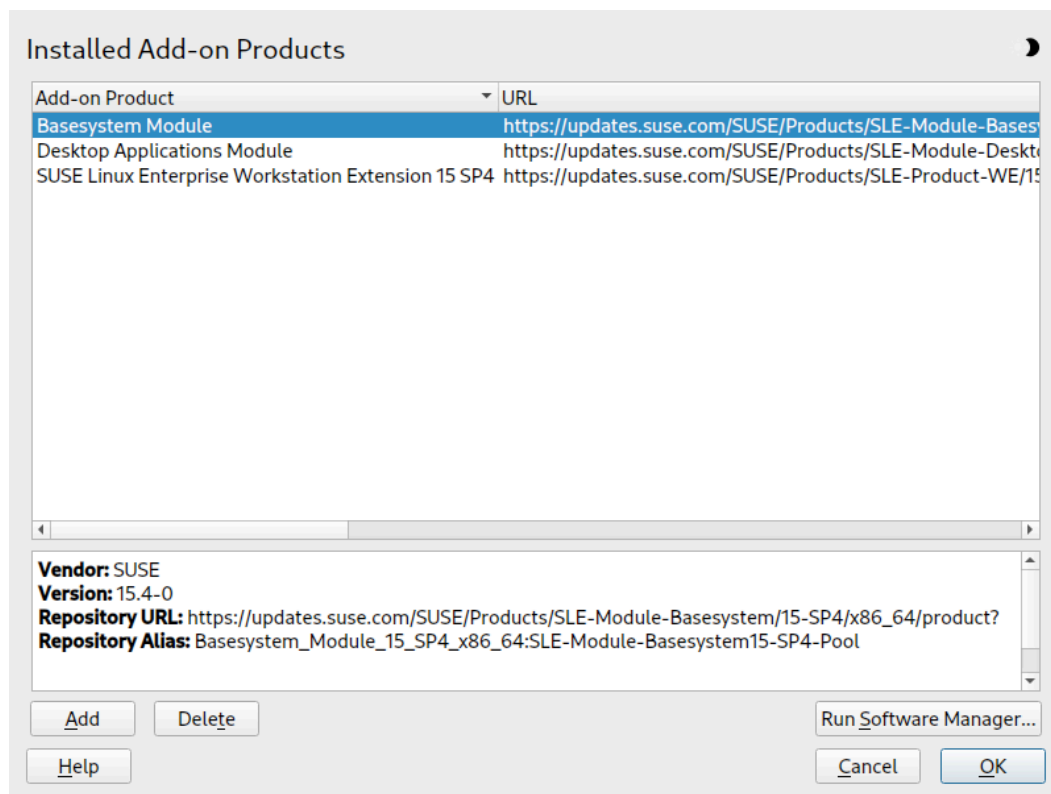
Similar to software packages, which may depend on other packages to function, a module may have dependencies on other modules. If this is the case, the modules on which it depends are automatically selected for installation.

3.3 Installing extensions and third party add-on products from media

When installing an extension or add-on product from media, you can select various types of product media, like DVD/CD, removable mass storage devices (such as flash disks), or a local directory or ISO image. The media can also be provided by a network server, for example, via HTTP, FTP, NFS, or Samba.

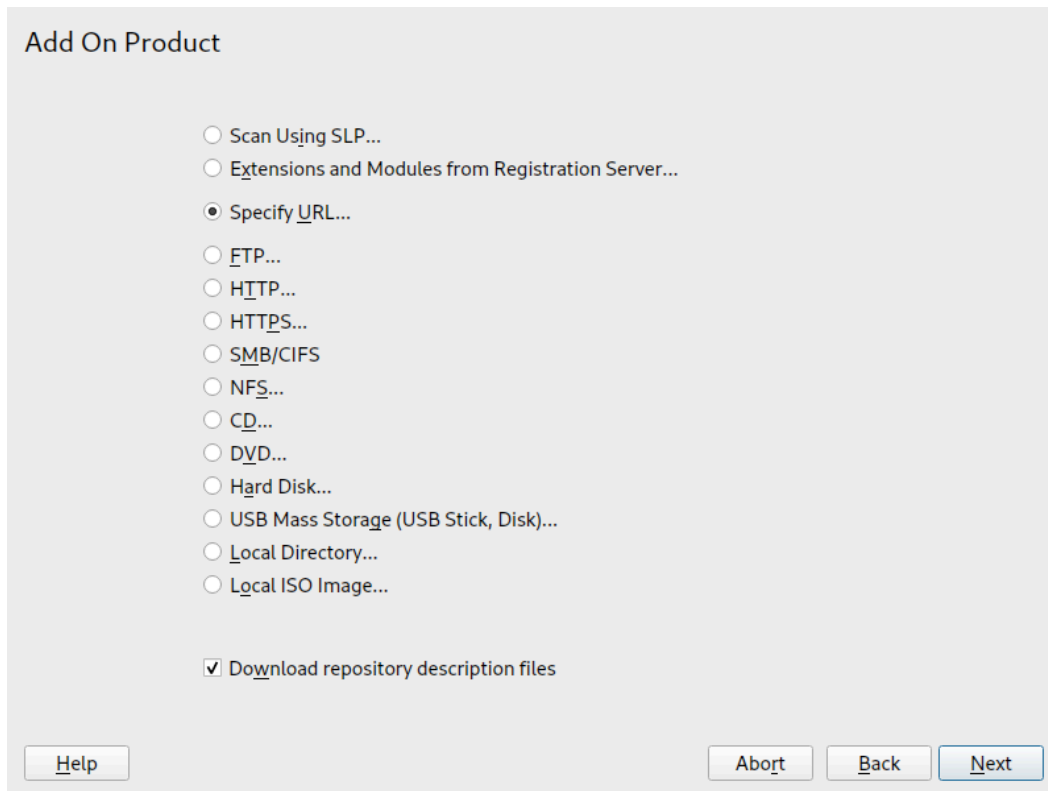
1. Start YaST and select *Software > Add-On Products*. Alternatively, start the YaST *Add-On Products* module from the command line with `sudo yast2 add-on`.

The dialog will show an overview of already installed add-on products, modules and extensions.



2. Click *Add* to install a new add-on product.

3. In the *Add-On Product* dialog, select the option that matches the type of medium from which you want to install:



- To scan your network for installation servers announcing their services via SLP, select *Scan Using SLP* and click *Next*.
- To add a repository from a removable medium, choose the relevant option and insert the medium or connect the USB device to the machine, respectively. Click *Next* to start the installation.
- For most media types, you will be prompted to specify the path (or URL) to the media after selecting the respective option and clicking *Next*. Specifying a *Repository Name* is optional. If none is specified, YaST will use the product name or the URL as the repository name.

The option *Download Repository Description Files* is activated by default. If you deactivate the option, YaST will automatically download the files later, if needed.

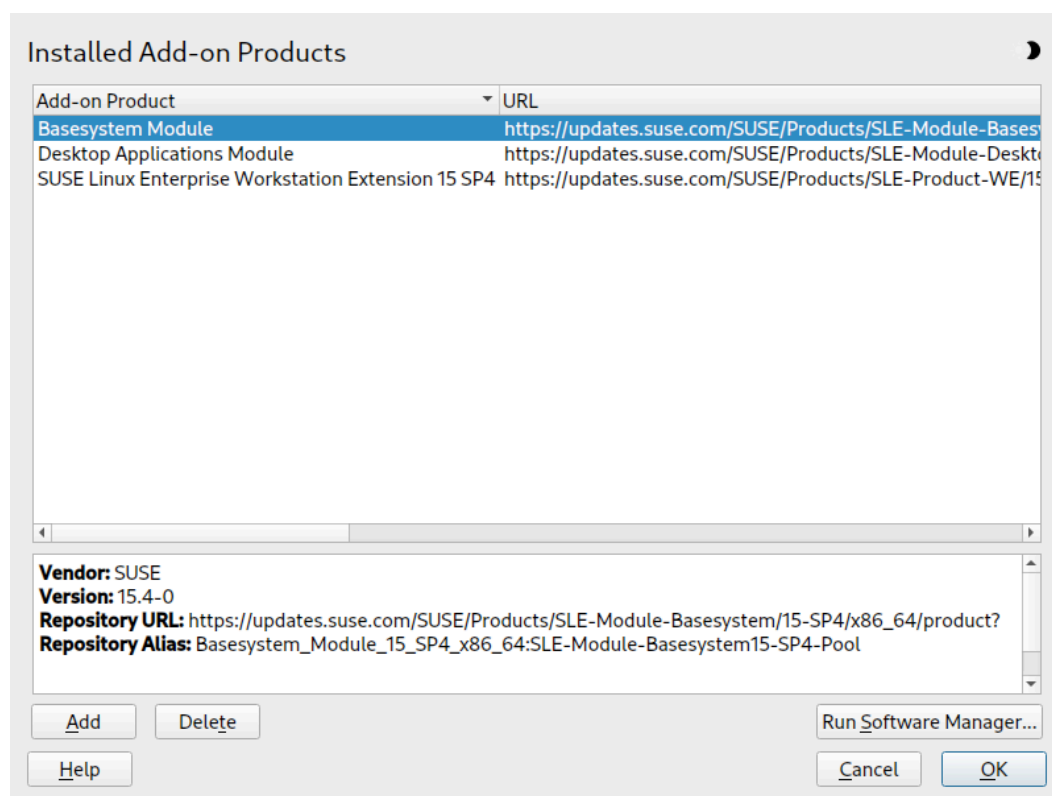
4. Depending on the repository you have added, you may be prompted to import the repository's GPG key or asked to agree to a license.

After confirming these messages, YaST will download and parse the metadata. It will add the repository to the list of *Configured Repositories*.

5. If needed, adjust the repository *Properties* as described in Book “Administration Guide”, Chapter 8 “Installing or removing software”, Section 8.4.2 “Managing repository properties”.
6. Confirm your changes with *OK* to close the configuration dialog.
7. After having successfully added the repository for the add-on media, the software manager starts and you can install packages. For details, refer to Book “Administration Guide”, Chapter 8 “Installing or removing software”.

3.4 Deleting modules and extensions with YaST

1. Start *YaST > Software > Add-On Products*.



2. Choose the module or extension that should be removed and click *Delete*. Confirm the warning saying that all packages from the selected component will be removed.

3. The YaST Software Manager opens and lists all installed packages from the deleted module or extension. Click *Accept* to remove all of them. It is strongly recommended to do so, because you will no longer get updates for packages from deleted modules or extensions. In case you keep packages, make sure to at least remove the `*-release` package for each module or extension that gets deleted.

Proceed with *Accept* and then *OK*.



Warning: Deleting modules

Note that you should never delete the *Basesystem Module*. It is also not recommended to delete the *SUSE Linux Enterprise Workstation Extension* and *Desktop Applications Module*.



Warning: No updates for packages from deleted modules and extensions

If you choose to keep packages from deleted modules or extensions, you will no longer receive updates for these packages. Because this includes security fixes, keeping such packages may introduce a security risk to your system.

3.5 Adding or deleting modules and extensions with SUSEConnect

1. Run `SUSEConnect --list-extensions` to get an overview of available extensions:

```
> sudo SUSEConnect --list-extensions
AVAILABLE EXTENSIONS AND MODULES

Basesystem Module 15 SP4 x86_64 (Installed)
Deactivate with: SUSEConnect -d -p sle-module-basesystem/15.4/x86_64

Desktop Applications Module 15 SP4 x86_64 (Installed)
Deactivate with: SUSEConnect -d -p sle-module-desktop-applications/15.4/x86_64

Development Tools Module 15 SP4 x86_64
Activate with: SUSEConnect -p sle-module-development-tools/15.4/x86_64

SUSE Linux Enterprise Workstation Extension 15 SP4 x86_64 (Installed)
Deactivate with: SUSEConnect -d -p sle-we/15.4/x86_64

SUSE Cloud Application Platform Tools Module 15 SP4 x86_64
Activate with: SUSEConnect -p sle-module-cap-tools/15.4/x86_64
```

```
SUSE Package Hub 15 SP4 x86_64
Activate with: SUSEConnect -p PackageHub/15.4/x86_64
```

MORE INFORMATION

You can find more information about available modules here:
<https://www.suse.com/products/server/features/modules.html>

2. Run the commands in the listing for activating/deactivating a module or extension to add or delete a component. Note that adding an extensions requires additional registration codes which are liable for cost.



Warning: Deleting modules

Note that you should never delete the *Basesystem Module*. It is also not recommended to delete the , *SUSE Linux Enterprise Workstation Extension* and *Desktop Applications Module*.



Important: No automatic installation or removal of packages

SUSEConnect only adds or removes modules and extensions. It registers or derigisters the components and enables or disables their repositories, but it does not install or remove any packages. If you want this to be done automatically, use YaST to manage modules and extensions.

When adding a module or extension, **SUSEConnect** does not install default packages or patterns. To do this manually, use Zypper or YaST › *Software Management*.

When deleting a module or extension, **SUSEConnect** does not perform a cleanup. Packages from the module or extension remain installed on the system, but are longer updated from a repository. To list these “orphaned” packages, run **zypper packages --orphaned**. To remove one or more packages, run **zypper remove PACKAGE [AN-OTHER_PACKAGE]**. Alternatively use YaST › *Software Management* and then *View › Package Classification › Orphaned Packages* to list and delete orphaned packages.



Warning: No updates for packages from deleted modules and extensions

If you choose to keep packages from deleted modules or extensions, you will no longer receive updates for these packages. Because this includes security fixes, keeping such packages may introduce a security risk to your system.

4 Module membership of packages

By default, tools for searching software packages (YaST Software Management or **zypper search**) are restricted to searching within active repositories. For an extended search including not yet activated remote repositories, you can run

```
zypper search-packages PACKAGE
```



Tip: Searching for packages in the SUSE Customer Center

You can also search for packages and their respective modules in the SUSE Customer Center Web interface at <https://scc.suse.com/packages>. A SUSE login is *not* required for this service.

To refine the search results, **zypper search-packages** offers the following options:

-x, --match-exact

Searches for exact matches.

-g, --group-by-module

Groups the search results by modules rather than by package name.

-d, --details

Additionally lists version numbers and repositories containing the package.

--xmlout

Generates XML output.

Below are a few examples of how to use **zypper search-packages**.

EXAMPLE 1: SIMPLE SEARCH

The following command searches for the packages `nodejs` and `hawk`. The first one is available in the `Web and Scripting` module, while the second one is part of the SUSE Linux Enterprise High Availability Extension. Both packages are not yet installed:

```
> zypper search-packages openjdk nodejs
Following packages were found in following modules:
```

Package	Module or Repository	SUSEConnect Activation Command
java-11-openjdk	Basesystem Module (sle-module-basesystem/15.4/x86_64)	SUSEConnect --product sle-module-basesystem/15.4/x86_64
java-17-openjdk	Basesystem Module (sle-module-basesystem/15.4/x86_64)	SUSEConnect --product sle-module-basesystem/15.4/x86_64
nodejs14	Web and Scripting Module (sle-module-web-scripting/15.4/x86_64)	SUSEConnect --product sle-module-web-scripting/15.4/x86_64
nodejs16	Web and Scripting Module (sle-module-web-scripting/15.4/x86_64)	SUSEConnect --product sle-module-web-scripting/15.4/x86_64
[...]		

EXAMPLE 2: SEARCHING FOR EXACT MATCHES

If you know the exact package names, you can narrow the results down to exact matches by using the option `-x`:

```
> zypper search-packages -x java-11-openjdk nodejs14
Following packages were found in following modules:
```

Package	Module or Repository	SUSEConnect Activation Command
java-11-openjdk	Basesystem Module (sle-module-basesystem/15.4/x86_64)	SUSEConnect --product sle-module-basesystem/15.4/x86_64
nodejs14	Web and Scripting Module (sle-module-web-scripting/15.4/x86_64)	SUSEConnect --product sle-module-web-scripting/15.4/x86_64
[...]		

EXAMPLE 3: SEARCHING FOR PACKAGES THAT ARE ALREADY INSTALLED OR AVAILABLE

If you search for packages that are already installed or are available in one of the modules that are available on your system, the search results differ. In the following example, the package `vim` is already installed. The package `emacs` is not installed, but is available for installation without having to add a module.

```
> zypper search-packages -x vim
Following packages were found in following modules:
```

```

Package  Module or Repository
        SUSEConnect Activation Command
---
-----
-----
vim Basesystem Module (sle-module-basesystem/15.4/x86_64)
        SUSEConnect --product sle-module-basesystem/15.4/x86_64
vim Installed
vim Available in repo Basesystem_Module_15_SP4_x86_64:SLE-Module-Basesystem15-SP4-
Pool
vim Available in repo Basesystem_Module_15_SP4_x86_64:SLE-Module-Basesystem15-SP4-
Updates

> zypper search-packages -x emacs
Following packages were found in following modules:

Package  Module or Repository
        SUSEConnect Activation Command
-----
-----
-----
emacs Basesystem Module (sle-module-basesystem/15.4/x86_64)
        SUSEConnect --product sle-module-basesystem/15.4/x86_64
emacs Available in repo Basesystem_Module_15_SP4_x86_64:SLE-Module-Basesystem15-SP4-
Pool

```

Instead of searching for packages, you can also view the list of packages that belong to a module or extension. Start the YaST *Software Management* module and click *View > Services*. Select an entry to display the list of packages that belong to this module or extension.

5 Legal notice

Copyright© 2006– 2023 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.

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 sub-unit 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 <http://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.