SUSE

Gathering System Information for Support

WHAT?

The article gives instructions on how to gather information that can be passed to the SUSE support.

WHY?

You want to know how to properly gather information about your system if there is a problem with the system.

EFFORT

It takes up to 15 minutes of reading time.

GOAL

You will learn how to create an archive of information about your system that can provide details about problems in your system to the SUSE support.

Publication Date: 08 Oct 2026

Contents

1 The **supportconfig** tool 3

2 Collecting system information with **supportconfig** 3

3 Overview of the archive content 5

4 Submitting information to Global Technical Support 9

5 Legal Notice 10

A GNU Free Documentation License 11

1 The **supportconfig** tool

If problems occur, you can use the **supportconfig** command-line tool to create a detailed system report. The tool collects information about the system, such as the current kernel version, hardware, installed packages, partition setup, and much more.

The command-line tool is provided by the package `supportutils`, which is installed by default. However, **supportconfig** can integrate plug-ins that are used with each running of **supportconfig**. Which plug-ins are available on your system, depends on installed packages. The plug-ins are stored in the `/usr/lib/supportconfig/plugins/` directory.

The **supportconfig** tool creates a TAR archive with detailed system information that you can hand over to Global Technical Support.

2 Collecting system information with **supportconfig**

To create a TAR archive with detailed system information that you can hand over to Global Technical Support, follow the procedure:

1. Run **supportconfig** as `root`. Usually, it is enough to run this tool without any options. For common options, refer to *Section 2.1, "Common **supportconfig** options"*.

```
# supportconfig


           Support Utilities - Supportconfig
                         Script Version: 3.1.11-46.2
                         Library Version: 3.1.11-29.6
                         Script Date: 2022 10 18
[...]
Gathering system information
  Data Directory:    /var/log/scc_d251_180201_1525 ❶

  Basic Server Health Check...                 Done ❷
  RPM Database...                              Done ❷
  Basic Environment...                         Done ❷
  System Modules...                            Done ❷
[...]
  File System List...                          Skipped ❸
[...]
  Command History...                           Excluded ❹
[...]
```

```
  Supportconfig Plugins:                          1 ❺
    Plugin: pstree...                             Done
[...]
Creating Tar Ball

==[ DONE ]=====================================================================
  Log file tar ball: /var/log/scc_d251_180201_1525.txz ❻
  Log file size:     732K
  Log file md5sum:   bf23e0e15e9382c49f92cbce46000d8b
================================================================================/
```

The command output is described below this procedure.

2. Wait for the tool to complete the operation.

3. The default archive location is `/var/log`, with the file name format being `scc_HOST_DATE_TIME.txz`. For the archive content description, refer to *Section 3, "Overview of the archive content"*.

❶ The temporary data directory to store the results. This directory is archived as a tar file, see ❻.

❷ The feature was enabled (either by default or selected manually) and executed successfully. The result is stored in a file (see *Table 1, "Comparison of features and file names in the TAR archive"*).

❸ The feature was skipped because certain files of one or more RPM packages were changed.

❹ The feature was excluded because it was deselected via the `-x` option.

❺ The script found one plug-in and executes the plug-in **`pstree`**. The plug-in was found in the directory `/usr/lib/supportconfig/plugins/`. See the man page for details.

❻ The tar file name of the archive, compressed with **`xz`** by default.

2.1 Common **`supportconfig`** options

Usually, it is sufficient to run **`supportconfig`** without any options. However, you may need to use the following options:

`-E` *`MAIL`*

To provide the contact e-mail.

`-N` *`NAME`*

To provide your name.

`-O COMPANY`

To provide your company name.

`-P PHONE`

To provide your phone number.

`-i KEYWORDS`

To specify keywords that limit the features to check. *`KEYWORDS`* is a comma-separated list of case-sensitive keywords.

This option is particularly useful if you have already localized a problem that relates to a specific area or feature set only. For example, you have detected problems with LVM and want to test a recent change that you introduced to the LVM configuration. In this case, it makes sense to gather the minimum **`supportconfig`** information around LVM only:

```
# supportconfig -i LVM
```

`-F`

To list all keywords that you can use to limit the features to check.

`-m`

To reduce the amount of the information being gathered.

`-l`

To collect already rotated log files. This is especially useful in high-logging environments or after a kernel crash when syslog rotates the log files after a reboot.

3 Overview of the archive content

The TAR archive contains all the results from the features. Depending on what you have selected (all or only a small set), the archive can contain more or fewer files. The set of features can be limited using the `-i` option (see *Section 2.1, "Common* **`supportconfig`** *options"*).

To list the contents of the archive, use this **`tar`** command:

```
# tar xf /var/log/scc_&exampleclient;_180131_1545.txz
```

The following file names are always available inside the TAR archive:

MINIMUM FILES IN ARCHIVE

`basic-environment.txt`
: Contains the date when this script was executed and system information like version of the distribution, hypervisor information, and more.

`basic-health-check.txt`
: Contains basic health checks, such as uptime, virtual memory statistics, free memory and hard disk, checks for zombie processes, and more.

`hardware.txt`
: Contains basic hardware checks like information about the CPU architecture, a list of all connected devices, interrupts, I/O ports, kernel boot messages, and more.

`messages.txt`
: Contains log messages from the system journal.

`rpm.txt`
: Contains a list of all installed RPM packages, their names and versions and where they come from.

`summary.xml`
: Contains information in XML format, such as distribution, version and product-specific fragments.

`supportconfig.txt`
: Contains information about the **`supportconfig`** script itself.

`y2log.txt`
: Contains YaST-specific information like specific packages, configuration files and log files.

The following table lists all available features and their file names.

TABLE 1: COMPARISON OF FEATURES AND FILE NAMES IN THE TAR ARCHIVE

Feature	File name
APPARMOR	`security-apparmor.txt`
AUDIT	`security-audit.txt`
AUTOFS	`fs-autofs.txt`
BOOT	`boot.txt`
BTRFS	`fs-btrfs.txt`

Feature	File name
DAEMONS	systemd.txt
CIMOM	cimom.txt
CRASH	crash.txt
CRON	cron.txt
DHCP	dhcp.txt
DISK	fs-diskio.txt
DNS	dns.txt
DOCKER	docker.txt
DRBD	drbd.txt
ENV	env.txt
ETC	etc.txt
HISTORY	shell_history.txt
ISCSI	fs-iscsi.txt
LDAP	ldap.txt
LIVEPATCH	kernel-livepatch.txt
LVM	lvm.txt
MEM	memory.txt
MOD	modules.txt
MPIO	mpio.txt
NET	network-*.txt
NFS	nfs.txt
NTP	ntp.txt
NVME	nvme.txt

Feature	File name
OCFS2	ocfs2.txt
PAM	pam.txt
PODMAN	podman.txt
PRINT	print.txt
PROC	proc.txt
SAR	sar.txt
SLERT	slert.txt
SLP	slp.txt
SMT	smt.txt
SMART	fs-smartmon.txt
SMB	samba.txt
SRAID	fs-softraid.txt
SSH	ssh.txt
SSSD	sssd.txt
SYSCONFIG	sysconfig.txt
SYSFS	sysfs.txt
TRANSACTIONAL	transactional-update.txt
TUNED	tuned.txt
UDEV	udev.txt
UFILES	fs-files-additional.txt
UP	updates.txt
WEB	web.txt

4 Submitting information to Global Technical Support

After you have created the archive using the **supportconfig** tool, you can submit the archive to SUSE.

4.1 Creating a service request number

Before handing over the **supportconfig** data to Global Technical Support, you need to generate a service request number first. You will need it to upload the archive to support.

To create a service request, go to https://scc.suse.com/support/requests and follow the instructions on the screen. Write down the service request number.

Note: Privacy statement

SUSE treats system reports as confidential data. For details about our privacy commitment, see https://www.suse.com/company/policies/privacy/.

4.2 Uploading targets

After having created a service request number, you can upload your **supportconfig** archives to Global Technical Support. In the examples below, *12345678901* serves as a placeholder for your service request number. Replace the placeholder with the service request number you created in *Section 4.1, "Creating a service request number"*.

The following procedures assume that you have already created a **supportconfig** archive but have not uploaded it yet.

PROCEDURE 1: SUBMITTING INFORMATION TO SUPPORT ON SERVERS WITH INTERNET CONNECTIVITY

1. Run the **supportconfig** tool as follows:

   a. To use the default upload target `https://support-ftp.us.suse.com/incoming/upload.php?file={tarball}`, run:

   ```
   > sudo supportconfig -ur 12345678901
   ```

   b. For the FTPS upload target `ftps://support-ftp.us.suse.com`, use the following command:

   ```
   > sudo supportconfig -ar 12345678901
   ```

To use a different upload target, for example, for the EMEA area, use the `-U` followed by the particular URL, either `https://support-ftp.emea.suse.com/incoming/upload.php?file={tarball}"` or `ftps://support-ftp.emea.suse.com/incoming/`:

```
> sudo supportconfig -r 12345678901 -U https://support-ftp.emea.suse.com/
incoming
```

2. After the TAR archive arrives in the incoming directory of our FTP server, it becomes automatically attached to your service request.

If the servers do not provide Internet connectivity, follow the steps below:

PROCEDURE 2: SUBMITTING INFORMATION TO SUPPORT ON SERVERS WITHOUT INTERNET CONNECTIVITY

1. Run the following:

```
> sudo supportconfig -r 12345678901
```

2. Manually upload the `/var/log/scc_SR12345678901*txz` archive to one of our servers. The selection of a server depends on your location in the world:

   - North America: HTTPS `https://support-ftp.us.suse.com/incoming/upload.php?file={tarball}`, FTPS `ftps://support-ftp.us.suse.com/incoming/`
   - EMEA, Europe, the Middle East, and Africa: FTP `https://support-ftp.emea.suse.com/incoming/upload.php?file={tarball}`, FTPS `ftps://support-ftp.emea.suse.com/incoming/`

3. After the TAR archive arrives in the incoming directory of our FTP server, it becomes automatically attached to your service request.

5 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. Secondarily, 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.