



U Y U N I

# Quick Start - Public Cloud

Uyuni 4.1

December 07, 2020



# Table of Contents

Quick Start: Public Cloud Overview	1
Setting Up	2
Installation	4
Content Lifecycle Management	6
Register Clients	7
Activation Keys . . . . .	8
System Set Manager . . . . .	8
GNU Free Documentation License	10

# Quick Start: Public Cloud Overview

**Publication Date:** 2020-12-07

This guide shows you the fastest way to get Uyuni up and running in a public cloud using on-demand or BYOS services. Additionally, it assumes that you are installing the Uyuni Server on a single cloud instance. It has been tested on Amazon Web Services, Microsoft Azure, and Google Cloud Engine.

For more information on using Uyuni, see the official Uyuni documentation at <https://documentation.suse.com/suma>.

# Setting Up

We have tested these instructions on Amazon EC2, Google Compute Engine, and Microsoft Azure, but they should work on other providers as well, with some variation.

You need to start by logging in to your chosen public cloud provider, and launching a Uyuni instance.

Depending on the public cloud you are using, you can usually locate the Uyuni Server images by searching for **suse manager**. In EC2, you need to search within the Community AMIs. In GCE and Azure, search the marketplace.

As you prepare your new instance, pay attention to these settings:

For hardware, select an instance with at least:

- 32 GB RAM
- 8 cores

For more information about hardware requirements, see [[Installation > Hardware-requirements >](#)].

For network security and access settings, you need to enable HTTPS access. This allows you to access the Uyuni WebUI.

In EC2 and Azure, create a new security group, and add inbound and outbound rules for HTTPS. In GCE, check the **Allow HTTPS traffic** box under the **Firewall** section.



When running Uyuni on public clouds, make sure you apply security measures to limit access to the right people. A world-accessible Uyuni would give access to your infrastructure to anyone, and could breach your SUSE support agreement.

For storage settings, ensure the root volume of the Uyuni Server is 100 GB or larger. Add an additional storage disk of 500 GB or more, and choose SSD storage if you can. The cloud images for Uyuni Server use a script to assign this separate volume when your instance is launched. The name of the device node varies depending on your provider, and the instance type you selected.

When you launch your instance, you can log in to the Uyuni Server and use this command to find all available storage devices:

```
hwinfo --disk | grep -E "Device File:"
```

If you are not sure which device to choose, use the **lsblk** command to see the name and size of each device. Choose the name that matches with the size of the virtual disk you are looking for.

You can set up the external disk with the **suma-storage** command. This creates an XFS partition mounted at **/manager\_storage** and uses it as the location for the database and repositories:

```
/usr/bin/suma-storage <devicename>
```

For more information about setting up a public cloud instance, see [[Installation > Pubcloud-requirements >](#)].

# Installation

Public clouds provide Uyuni under a Bring Your Own Subscription (BYOS) model. That means that they pre-install Uyuni, so you do not need to perform any installation steps. However, Uyuni Server needs to be registered with SUSE Customer Center to receive updates before you can sign in.

Follow the cloud providers instructions to SSH into the instance.

Run this command to start set up:

```
yast2 susemanager_setup
```

Follow the prompts, and wait for the setup to finish.

For detailed instructions on setting up Uyuni with YaST, see [ [Installation > Server-setup >](#) ].

Register your instance with SUSE Customer Center, using this command as root, specifying the registration number and the email address associated with it:

```
SUSEConnect -r <Registration_Number> -e <registered_email_address>
```

You can get your registration number by logging in to SUSE Customer Center from your browser.

For more information about registering Uyuni with SUSE Customer Center, see [ [Installation > General-requirements >](#) ].

When you have registered, all SUSE Linux Enterprise modules are activated. You also need to activate the Public Cloud module. Do this from the command prompt on your instance:

```
SUSEConnect -p sle-module-public-cloud/15.2/x86_64
```

For more information on activating public clouds, see [ [Installation > Pubcloud-setup >](#) ].

Open the Uyuni WebUI with a web browser, using an address like this:

```
https://<public_IP>
```

Sign in to the Uyuni WebUI with the administrator account. The username and password varies depending on your provider.

*Table 1. Default Administrator Account Details*

Provider	Default Username	Default Password
Amazon EC2	admin	<instance-ID>

Provider	Default Username	Default Password
Google Compute Engine	admin	<instance-ID>
Microsoft Azure	admin	<instance-name>-suma

When you sign in to the administrator account for the first time, you are given an automatically generated organization name. Change this by navigating to **Admin > Organizations**, and editing the organization name.



When you have signed in to the administrator account for the first time, change the default password to protect your account.

For more information about setting up your Uyuni Server, see [[Installation > Server-setup >](#)].

Use the Uyuni WebUI to add the required software products, and schedule a repository synchronization. The best way to do this is to navigate to **Admin > Setup Wizard** and follow the prompts.

For more information about the setup wizard, see [[Installation > Setup-wizard >](#)].

If you are intending to register Ubuntu or Red Hat Enterprise Linux clients, you need to set up custom repositories and channels. For more information, see the relevant section in [[Client-configuration > Registration-overview >](#)].

To synchronize your channels, navigate to **Software > Manage > Channels**. Click each channel you created, navigate to the **Repositories > Sync** tab, and click [[Sync Now](#)]. You can also schedule synchronization from this screen.



Before bootstrapping a client, make sure all the selected channels for that product are synchronized.

Synchronization can sometimes take several hours, in particular for openSUSE, SLES ES and RHEL channels.

# Content Lifecycle Management

Content lifecycle management allows you to customize repositories and test packages before updating production clients. This is especially useful if you need to apply updates during a limited maintenance window.

This is achieved through a series of environments that your software channels can move through on their lifecycle. Most environment lifecycles include at least test and production environments, but you can have as many environments as you require.

When you have created your project, defined environments, and attached sources and filters, you can build the project for the first time. For more information about content lifecycle management, see [[Administration > Content-lifecycle >](#)].

When your project is built successfully, you need to add the new channel to an activation key. For more information about custom channels, see [[Administration > Custom-channels >](#)].

## *Procedure: Creating a Content Lifecycle Project*

Go to **Content Lifecycle > Projects**, create a project and assign it a label and a name. Then use [**Attach/Detach Sources**] to attach a base channel and child channels, and finally save.

You can use [**Attach/Detach Filters**] to fine tune what packages to include in the resulting channel. A number of filters are available: name, date, synopsis, reboot required or not, etc.

At this point you can define your environments by clicking [**Add Environment**] in the **Environment Lifecycle** dialog. Test and Production are usually the bare minimum most customers have but you may need more. Continue creating environments until you have all the environments for your lifecycle completed.

The final step is building the project, which can take a little while.

For more information about content lifecycle management, including worked examples , see [[Administration > Content-lifecycle >](#)].

# Register Clients

When you have your Uyuni Server set up, you are ready to start registering clients.

You can use Uyuni to manage clients using either the Salt stack or the traditional stack (inherited from Spacewalk). Most new features and enhancements are only available for Salt-managed clients, which makes this stack the preferred one. For more details, see [ [Client-configuration > Supported-features >](#) ].

In the Uyuni WebUI, navigate to **Systems > Bootstrapping**, then fill in the **Host**, **SSH Port**, **User** and **Password** fields. Make sure you use stable FQDNs for the **Host** field, or Uyuni cannot find your host when your Public Cloud gives you a different short-lived FQDNs.



If you are attempting to bootstrap traditional clients, check that you can resolve the host name of the server while you are logged in to the client. You might need to add the FQDN of the server to `/etc/hosts` local resolution file on the client. Check using the `hostname -f` command with the local IP address of the server.

Public cloud images usually do not allow SSH login with username and password, but only SSH with a certificate. If you want to use bootstrap from the WebUI, you need to enable SSH login with username and SSH key. You can do this by navigating to **Systems > Bootstrapping** and changing the authentication method.

If your cloud provider is Microsoft Azure, you can log in with username and password. To do this, you need to allow the AzureUser to run commands as root without a password. To do this, open the `/etc/sudoers.d/waagent` file, and add or edit this line:

+

```
AzureUser ALL=(ALL) NOPASSWD: ALL
```



Allowing the AzureUser to run commands as root without a password carries a security risk. Use this method for testing only. Do not do this for production systems.

When the bootstrap process has completed successfully, your client is listed at **Systems > System List**.

- If you want more control over the process, have to register many clients, or are registering traditional clients, create a bootstrap script. For more information, see [ [Client-configuration > Registration-bootstrap >](#) ].
- For Salt clients and even more control over the process, executing single commands on the command line can be useful. For more information, see [ [Client-configuration > Registration-cli >](#) ].

## Activation Keys

Activation keys are used with traditional and Salt clients to ensure that your clients have the correct software entitlements, are connecting to the appropriate channels, and are subscribed to the relevant groups. Each activation key is bound to an organization, which you can set when you create the key.

### Procedure: Creating an Activation Key

1. In the Uyuni WebUI, as an administrator, navigate to **Systems > Activation Keys**.
2. Click the **[Create Key]** button.
3. On the **Activation Key Details** page, in the **Description** field, enter a name for the activation key.
4. In the **Key** field, enter the distribution and service pack associated with the key. For example, **SLES12-SP4** for SUSE Linux Enterprise Server 12 SP4.



Do not use commas in the **Key** field for any SUSE products. However, you **must** use commas for Red Hat Products. For more information, see [**Reference > Systems >**].

5. In the **Base Channels** drop-down box, select the appropriate base software channel, and allow the relevant child channels to populate. For more information, see [reference:admin/setup-wizard.pdf](#) and [**Administration > Custom-channels >**].
6. Select the child channels you need (for example, the mandatory SUSE Manager tools and updates channels).
7. We recommend you leave the **Contact Method** set to **Default**.
8. We recommend you leave the **Universal Default** setting unchecked.
9. Click **[Create Activation Key]** to create the activation key.
10. Check the **Configuration File Deployment** check box to enable configuration management for this key, and click **[Update Activation Key]** to save this change.



The **Configuration File Deployment** check box does not appear until after you have created the activation key. Ensure you go back and check the box if you need to enable configuration management.

For more on activation keys, see [**Client-configuration > Activation-keys >**].

## System Set Manager

System set manager (SSM) is used to administrate groups of systems, rather than performing actions on one system at a time. It works for both Salt and traditional clients.

For a complete list of the tasks that you can perform with the SSM, see [**Client-configuration > System-**

---

**set-manager > ].**

You need to select which systems or system group you want to work with before you can use SSM to perform operations.

You can access SSM in three different ways:

- Navigate to **Systems > System List**, select systems you want to work with, and navigate to **Systems > System Set Manager**.
- Navigate to **Systems > System Groups**, and click **[Use in SSM]** for the system group you want to work with.
- Navigate to **Systems > System Groups**, select the group you want to work with, and click **[Work with Group]**.

For more on SSM, see [[Client-configuration > System-set-manager > \]..](#)

# GNU Free Documentation License

Copyright © 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 noncommercially. 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 in order 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 worldwide, 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 noncommercially, 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{ldquo}GNU  
Free Documentation License{rdquo}.

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.