



U Y U N I

# Installation Guide

Uyuni 4.0

August 02, 2019



# Table of Contents

GNU Free Documentation License	1
Introduction	8
Installing Uyuni .....	8
Requirements	9
General Requirements .....	9
Hardware Requirements .....	10
Network Requirements .....	11
Supported Client Systems .....	12
Installation	14
Installing the virtual machine environment .....	14
Installing Uyuni Server .....	16
Installing on IBM Z .....	19
Setting Up	22
SUSE Manager Setup .....	22
SUSE Manager Proxy Registration .....	27
SUSE Manager Proxy Setup .....	31

# 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.

# Introduction

Uyuni provides absolute control over your Linux environment. System administrators often have tens, hundreds, or even thousands of client machines they need to look after, all of which require ongoing maintenance, updates, and lifecycle management. Uyuni allows you to manage all your Linux clients in one place, with one easy-to-understand dashboard.

Uyuni can be integrated with your network infrastructure in multiple ways, and most tasks can be automated, with reports issued so you always know the status of your client machines. Because Uyuni allows you to manage large numbers of systems and automatically keep them up to date, it helps to improve overall security, and provides extensive asset management and provisioning capability.

Uyuni can be used in conjunction with Red Hat Satellite Server and offers seamless management of both SUSE Linux Enterprise and Red Hat Enterprise Linux client systems.

## Installing Uyuni

All versions of Uyuni can be installed from Uyuni installation media. Before you begin the installation, you will require an operating system installed on your hardware.

This book guides you through installing the JeOS operating system in a virtual machine, before performing the Uyuni Server and Proxy installations.

# Requirements

## General Requirements

Before you begin your installation, check that your environment meets these requirements:

- Current SUSE Customer Center organization credentials
- Access to installation media
- Your environment meets the hardware and networking requirements
- You understand the supported client operating systems

This section contains more information on each of these requirements.



Uyuni 4.0 is based on SLES 15 SP1 as the host operating system. Uyuni comes with a dedicated support period. Long Term Service Pack Support (LTSS) for 15 cannot be added to Uyuni. It is also not possible to use SLES for SAP as a base for Uyuni for a longer lifecycle.

## Obtaining your SUSE Customer Center Credentials

You will need to create an account with SUSE Customer Center before you install SUSE Linux Enterprise Server and Uyuni. To obtain your SUSE Customer Center credentials:

*Procedure: Obtaining Your SCC Organization Credentials*

1. Navigate to <https://scc.suse.com/login> in your Web browser.
2. Log in to your SCC account, or follow the prompts to create a new account.
3. If you have not yet done so, click **Connect to an organization** and type or search for your organization.
4. Click **Manage my organizations** and select your organization from the list by clicking on the organization name.
5. Click the **Organization** tab, and then select the **Organization Credentials** tab.
6. Record your login information for use during Uyuni setup.

Depending on your organization's setup, you might also need to activate your subscription, using the **Activate subscriptions** menu.

## Obtaining Installation Media

From SLES 15 SP1, SUSE Manager Server and Proxy is available as a base product, and can be installed with the SLES Unified Installer.

Download SLES 15 SP1 or higher from [SUSE Linux Enterprise Server - Media Download](#)

## Supported Browsers for the SUSE Manager Web UI

In order to use the Web UI to manage your SUSE Manager environment, you will need to ensure you are running an up to date web browser.

SUSE Manager is supported on:

- Latest Firefox browser shipped with SLES
- Latest Chrome browser on all operating systems
- Latest Edge browser shipped with Windows

## Hardware Requirements

This table outlines hardware and software requirements on x86\_64 and IBM Power PC architecture. For installation on IBM Z, see [ **Installation > Install-ibmz > Install on IBM Z** ].

*Table 1. Hardware Requirements for x86\_64 Architecture*

Hardware	Recommended
CPU	Minimum 4 dedicated 64-bit CPU cores
RAM:	<i>Test Server</i> Minimum 8 GB
	<i>Base Installation</i> Minimum 16 GB
	<i>Production Server</i> Minimum 32 GB
Disk Space:	<i>/ (root)</i> The default JeOS root partition size of 24 GB is sufficient for this guide  <i>/var/lib/pgsql</i> Minimum 50 GB  <i>/var/spacewalk</i> Minimum 50 GB per SUSE product and 360 GB per Red Hat product

*Table 2. Hardware Requirements for IBM POWER8 or POWER9 Architecture*

Hardware	Recommended
CPU	Minimum 4 dedicated cores
RAM:	<i>Test Server</i> Minimum 8 GB
	<i>Base Installation</i> Minimum 16 GB
	<i>Production Server</i> Minimum 32 GB
Disk Space:	<i>/</i> Minimum 100 GB  <i>/var/lib/pgsql</i> Minimum 50 GB  <i>/var/spacewalk</i> Minimum 50 GB per SUSE product and 360 GB per Red Hat product

# Network Requirements

This section details the networking and port requirements for Uyuni.

## Fully Qualified Domain Name (FQDN)

The Uyuni server must resolve its FQDN correctly or cookies will not work properly on the WebUI.

For more information about configuring the hostname and DNS, see [SUSE Linux Enterprise Server Documentation - Configuring Host Name and DNS](#)

## Hostname and IP Address

To ensure that the Uyuni domain name can be resolved by its clients, both server and client machines must be connected to a working DNS server.

For more information about setting up a DNS server, see [SUSE Linux Enterprise Server Documentation - The Domain Name System](#)

## Using a Proxy When Installing from SUSE Linux Enterprise Media

If you are on an internal network and do not have access to SUSE Customer Center, you can set up and use a proxy during installation.

For more information about configuring a proxy for access to SUSE Customer Center during a SUSE Linux Enterprise installation, see [SUSE Linux Enterprise Server Documentation - Using a Proxy During Installation](#)



### Naming Your Server

The hostname of Uyuni must not contain uppercase letters as this may cause *jabberd* to fail. Choose the hostname of your Uyuni server carefully. Although changing the server name is possible, it is a complex process and unsupported.

In a production environment, Uyuni server and its clients should always use a firewall. This table gives an overview of required ports, to be used when you are setting up your firewall rules.

*Table 3. Required Server Ports*

Port	Protocol	Description
22	TCP	SSH
67	UDP	DHCP
69	UDP	TFTP, used to support PXE services
80	TCP	HTTP, used in some bootstrap cases
123	UDP	NTP time service

Port	Protocol	Description
443	TCP	HTTPS, used for Web UI, client, Proxy server, and API traffic
4505	TCP	Salt, used by the Salt-master to accept communication requests from clients
4506	TCP	Salt, used by the Salt-master to accept communication requests from clients
5222	TCP	XMPP client, used for communications with the <b>osad</b> daemon on traditional client systems
5269	TCP	XMPP server, used for pushing actions to SUSE Manager Proxy

For more information on disconnected setup and port configuration, see:

- [\[ Disconnected Setup \]](#)
- [\[ Installation > Ports > Ports \]](#)

## Supported Client Systems

Supported operating systems for traditional and Salt clients are listed in this table.

In this table, ✓ indicates that clients running the operating system are supported by SUSE, and ✗ indicates that it is not supported. Fields marked as ? are under consideration, and may or may not be supported at a later date.



### Supported Versions and SP Levels

Client operating system versions and SP levels must be under general support (normal or LTSS) to be supported with Uyuni. For details on supported product versions, see <https://www.suse.com/lifecycle>.

*Table 4. Supported Client Systems*

Operating System	Architecture	Traditional Clients	Salt Clients
SUSE Linux Enterprise 15	x86_64, POWER, IBM Z, ARM	✓	✓
SUSE Linux Enterprise 12	x86_64, POWER, IBM Z, ARM	✓	✓

Operating System	Architecture	Traditional Clients	Salt Clients
SUSE Linux Enterprise 11	x86, x86_64, Itanium, IBM POWER, IBM Z	✓	✓
SUSE Linux Enterprise Server-ES 7	x86_64	✓	✓
SUSE Linux Enterprise Server-ES 6	x86_64	✓	✓
SUSE Linux Enterprise Server for SAP	x86_64, POWER	✓	✓
Red Hat Enterprise Linux 8	x86_64	?	?
Red Hat Enterprise Linux 7	x86_64	✓	✓
Red Hat Enterprise Linux 6	x86, x86_64	✓	✓
CentOS 7	x86, x86_64	?	?
CentOS 6	x86, x86_64	?	?
{ opensuse } Leap 15.1	x86_64	✗	✓
Ubuntu 16.04	x86_64	✗	✓
Ubuntu 18.04	x86_64	✗	✓

# Installation

## Installing the virtual machine environment

### Virtual Machine Manager (*virt-manager*) Settings

This chapter provides the required (KVM) settings for installation of SUSE Linux Enterprise Just Enough Operating System (JeOS) 15 as the base for Uyuni. A kernel virtual machine (KVM) combined with Virtual Machine Manager (*virt-manager*) will be used as a sandbox for your first installation.



#### SUSE Virtualization Guide

For more information on virtualization, see: [SUSE Linux Enterprise Virtualization Guide](#)

Enter the following settings when creating a new virtual machine using ***virt-manager***. In the following table replace *version* with the actual product version string.

KVM Settings	
Installation Method	Import Existing Disk Image
OS:	Linux
Version:	SLES_version_-JeOS-for-kvm-and-xen.x86_64-GM.qcow2
Memory:	4096 MB
CPU's:	2
Storage Format:	.qcow2 24 GB (Default) JeOS Root Partition
Virtual Disks:	
VirtIO Disk 2	101 GB for <i>/var/spacewalk</i>
VirtIO Disk 3	50 GB for <i>/var/lib/pgsql</i>
VirtIO Disk 4	4 GB for swap
Name:	test-setup
Network	Bridge <i>br0</i>



#### SUSE Virtualization Guide

For more information on virtualization, see: [SUSE Linux Enterprise Virtualization Guide](#)

### JeOS KVM Settings

Create three additional virtual disks required for the Uyuni storage partitions.

---

*Procedure: Creating the Required Partitions with KVM*

1. Create a new virtual machine using the downloaded JeOS KVM image and select **Import existing disk image**.
2. Configure RAM and number of CPUs (At least 4 GB RAM and 2 CPUs).
3. Name your KVM machine and select the **Customize configuration before install** check box.
4. Select the [ **Add Hardware** ] button and create three new virtual disks with the following specifications. These disks will be partitioned and mounted in [Procedure: Preparing JeOS for Uyuni Installation](#).

VirtIO Storage Disks	Name	Sizing
VirtIO Disk 2	spacewalk	101 GB
VirtIO Disk 3	pgsql	50 GB
VirtIO Disk 4	swap	4 GB

5. Click **Begin Installation** and your new VM will boot from the JeOS image.

Proceed through the basic JeOS installation prompts until you reach the command line.



*Root Password*

During the basic installation prompts you are asked to enter the root password. Select a strong password and then in the next message box [ **Confirm root Password** ].

## Preparing JeOS for Uyuni

*Procedure: Preparing JeOS for Uyuni Installation*

1. Log in as **root**.
1. Uninstall the **sles-release** package:

```
rpm -e --nodeps sles-release
```

2. Register Uyuni with SCC (for example, replace <productnumber> with **4.0** and <architecture> with **x86\_64**):

```
SUSEConnect -e<EMAIL_ADDRESS> -r<SUSE_MANAGER_CODE> \
-p SUSE-Manager-Server/<productnumber>/<architecture>
```

3. Add Uyuni repositories:

```
SUSEConnect -p sle-module-basesystem/15.1/x86_64  
SUSEConnect -p sle-module-python2/15.1/x86_64  
SUSEConnect -p sle-module-server-applications/15.1/x86_64  
SUSEConnect -p sle-module-web-scripting/15.1/x86_64  
SUSEConnect -p sle-module-suse-manager-server/<productnumber>/x86_64
```



JeOS is configured to install only required packages. To get all features working you should allow to install also recommended packages. In **/etc/zypp/zypp.conf** change:

```
solver.onlyRequires = true
```

To:

```
solver.onlyRequires = false
```

4. Install `yast2-storage-ng` with all required dependencies (approx. 40 packages, 30 MB when installed). This basic administration package is required for preparing storage partitions:

```
zypper in -t package yast2-storage-ng
```

5. Partition and mount the virtual disks at the following locations using YaST Partitioner (**yast2-disk**).

VirtIO Storage Disks	Name	Storage Size	File System Type
VirtIO Disk 2	<b>/var/spacewalk</b>	101 GB	XFS
VirtIO Disk 3	<b>/var/lib/pgsql</b>	50 GB	XFS
VirtIO Disk 4	<b>swap</b>	4 GB	swap

6. Exit the partitioner and install the Uyuni pattern (approximately 730 packages, consuming 1.4 GB when installed):

```
zypper in pattern-suma_server
```

7. Reboot.

For proceeding with Uyuni setup, see [ **Installation > Server-setup > SUSE Manager Setup** ].

## Installing Uyuni Server

This chapter provides the required KVM settings for installation of SUSE Linux Enterprise Server media

as the base for Uyuni. A kernel virtual machine KVM combined with Virtual Machine Manager (**virt-manager**) will be used as a sandbox for this installation.

## SLES KVM Requirements

Enter the following settings when creating a new virtual machine using **virt-manager** (replace **version** with the actual version string):

KVM Settings for SLES	Installation Method:
Local install media (ISO image or CDROM)	OS:
Linux	Version:
<b>SLE-[replaceable]version-Server-x86_64-GM-DVD1.iso</b>	Memory:
4096 MB	CPUs:
2	Storage Format:
ISO 3 GB	Disk Space:
234 GB split between 4 GB swap and 130 GB mounted at <b>/var/spacewalk/</b>	
(Virtual Disk 1) and 50 GB mounted at <b>/var/lib/pgsql</b>	
(Virtual Disk 2). The rest for the root partition (100 GB+).	Name:
example-server	Network

## SLES KVM Settings

This section provides guidance on installation of Uyuni utilizing the full installation media with KVM and **virt-manager**. This section assumes you have previously setup an account with SCC and downloaded the SLES full installation media.

### *Procedure: Preparing for SLES Installation*

1. In **virt-manager** select **File > New Virtual Machine**.
2. Select [ **Local install media (ISO image or CDROM)** ].
3. Ensure [ **Use ISO Image** ] is selected then click [ **Browse** ] and locate the full SLES image you downloaded from your SCC account.
4. Configure your machine with at least 4096 MB RAM and a minimum of 2 CPUs.
5. Create a storage device with a minimum of 234 GB storage space for the installation. During the partitioning setup of the SLES installation this disk should be partitioned into the following disks:

## Disk Space Requirements

4 GB Swap space

130 GB XFS partition (or dedicated virtual disk) for `/var/spacewalk/`

50 GB XFS partition (or dedicated virtual disk) for `/var/lib/pgsql/`

6. The remaining storage space will be used by the operating system for the root partition. Select [ **Finish** ] to begin the installation.

Installation of SUSE Linux Enterprise Server will begin. For more information on completing an installation of SUSE Linux Enterprise Server, see: [SUSE Linux Enterprise Installation Quickstart](#).

## Selecting the Uyuni Extension

1. During SUSE Linux Enterprise Server installation, you will be presented with the **Extension and Module Selection** screen.



This screen will not be shown if you have skipped the registration step at the beginning of the installation process. Ensure you have registered with SUSE and logged in.

2. Select the Uyuni Extension and then click the [ **Next** ] button.
3. Complete the SUSE Linux Enterprise Server installation.

A screenshot of the 'Extension and Module Selection' screen from the SUSE Linux Enterprise Server installer. The screen shows a list of available extensions and modules, with 'SUSE Manager Server 3.1 x86\_64 (BETA)' selected. A detailed description of the selected module is provided in a box below. Navigation buttons for 'Help', 'Release Notes...', 'Abort', 'Back', and 'Next' are visible at the bottom.

## Installing on IBM Z

This section is intended for z/VM systems programmers responsible for operating the IBM Z mainframes. It assumes that you are a z/VM systems programmer trained on IBM Z operating protocols, and steps you through installing Uyuni onto an existing mainframe system. This section does not cover the variety of hardware configuration profiles available on IBM Z, but provides a foundational overview of the procedure and requirements necessary for a successful Uyuni Server deployment on IBM Z.

### System Requirements

Before you begin, check that your environment meets the base system requirements.

The base system for Uyuni 4.0 is SLES 15 SP1.

#### *Compatible IBM Z Systems:*

- IBM zEnterprise System z196
- IBM zEnterprise System z114
- IBM zEnterprise EC12
- IBM zEnterprise EC12
- IBM zEnterprise BC12
- IBM z13
- LinuxOne Rockhopper
- LinuxOne Emperor

*Table 5. Hardware Requirements*

Hardware	Recommended
CPU	Minimum 4 dedicated 64-bit CPU cores
RAM:	Test Server: Minimum 3 GB RAM and 2 GB Swap space Base Installation: Minimum 16 GB Production Server: Minimum 32 GB
Disk Space:	Root Partition: Minimum 100 GB <code>/var/lib/pgsql</code> : Minimum 50 GB <code>/var/spacewalk</code> : Minimum 50 GB per SUSE product and 360 GB per Red Hat product



Memory should be split across available RAM, VDISK, and swap to suit your environment. On a production system the ratio of physical memory to VDISK will need to be evaluated based on the number of clients you will be installing.

You will require an additional disk for database storage. This should be an **zFCP** or **DASD** device as these are preferred for use with **HYPERP AV**. The database storage disk should have:

- At least 50 GB for `/var/lib/pgsql`
- At least 50 GB for each SUSE product in `/var/spacewalk`
- At least 360 GB for each Red Hat product in `/var/spacewalk`

You will need to ensure you have sufficient disk storage for Uyuni before running `yast2 susemanager setup`. By default, the Uyuni file system, including the embedded database and patch directories, reside within the root directory. While adjustments are possible when installation is complete, it is important that you specify and monitor these adjustments closely. For information on storage management and reclaiming disk space, see the troubleshooting section in the Uyuni Administration Guide.



If your Uyuni runs out of disk space, this can have a severe impact on its database and file structure. A full recovery is only possible with a previous backup or a new Uyuni installation. SUSE technical services will not be able to provide support for systems suffering from low disk space conditions.

#### *Network Requirements:*

- OSA Express Ethernet (including Fast and Gigabit Ethernet)
- HiperSockets or Guest LAN
- 10 GBE, VSWITCH
- RDMA over Converged Ethernet (RoCE)

These interfaces are still included but no longer supported:

- CTC or virtual CTC
- IP network interface for IUCV

The z/VM guest you want to run Uyuni from will require a static IP address and hostname before you begin, as these cannot easily be changed after initial installation. The hostname should contain less than eight characters.

#### *Media Requirements:*

SUSE Linux Enterprise 15 SP1 Installation Media for IBM Z is available from <https://www.suse.com/products/server/download/>

## Installing Uyuni on IBM Z

This section covers the installation of Uyuni 4.0 as an extension to SUSE Linux Enterprise Server 15 SP1.

For more information on deploying SLES 15 SP1 on your hardware, see [https://www.suse.com/documentation/sles-15/book\\_sle\\_deployment/data/cha\\_zseries.html](https://www.suse.com/documentation/sles-15/book_sle_deployment/data/cha_zseries.html).

1. Install SUSE Linux Enterprise Server 15 SP1 from the installation media, and select Uyuni as an extension.
2. If you have not already done so, set up any additional storage required for `/var/spacewalk` and `/var/lib/pgsql` and swap space using the YaST partitioner tool. This must be set up before you continue with installation.
3. Perform a YaST online update and reboot the system.
4. Run Uyuni setup to finalize the Uyuni installation:

```
yast2 susemanagersetup
```

# Setting Up

## SUSE Manager Setup

This section covers Uyuni setup. You will perform the following procedures:

- Start Uyuni setup via YaST
- Create the main administration account with the Uyuni Web UI
- Name your base organization and add login credentials
- Synchronize the SUSE Linux Enterprise product channel from SUSE Customer Center

### *Third Party Software*

Uyuni is part of the SUSE Linux Enterprise 4.0 product family and thus compatible with the software shipped with SUSE Linux Enterprise Server.



Uyuni is a complex system, and therefore installing third party is not allowed. Installing monitoring software provided by a third party vendor is allowed only if you do not exchange basic libraries such as SSL, cryptographic software, and similar tools. In case of emergency, SUSE reserves the right to ask to remove any third party software (and associated configuration changes) and then to reproduce the problem on a clean system.

This section will guide you through Uyuni setup procedures.

### *Procedure: Uyuni Setup*

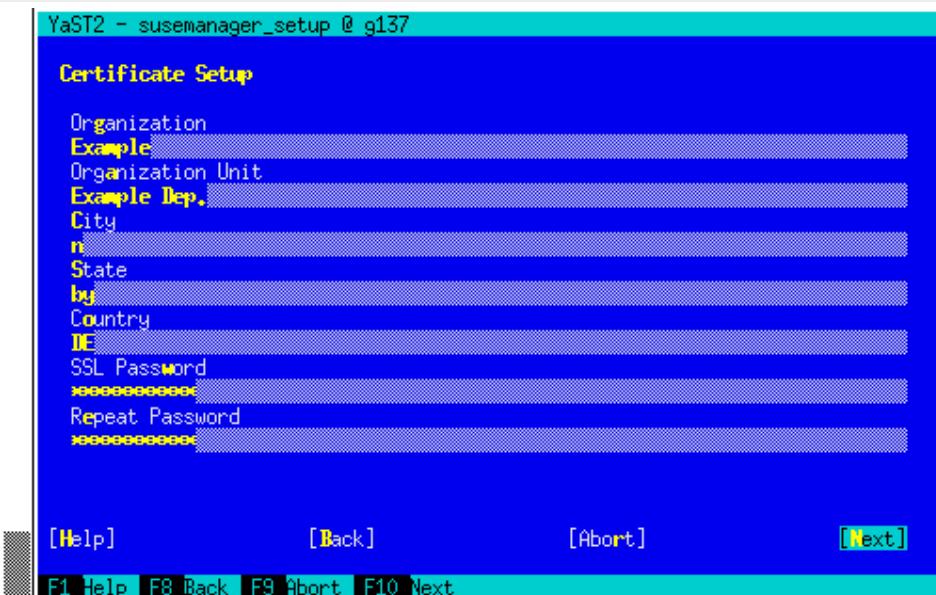
1. Log in to the Uyuni server and type `yast2 susemanager_setup` to begin the setup.
2. From the introduction screen select **SUSE Manager Setup** > **Setup SUSE Manager from scratch** and click [ **Next** ] to continue.
3. Enter an email address to receive status notifications and click [ **Next** ] to continue. Uyuni can sometimes send a large volume of notification emails. You can disable email notifications in the Web UI after setup, if you need to.
4. Enter your certificate information and a password. Passwords must be at least seven characters in length, and must not contain spaces, single or double quotation marks ( ' or " ), exclamation marks ( ! ), or dollar signs ( \$ ). Always store your passwords in a secure location.



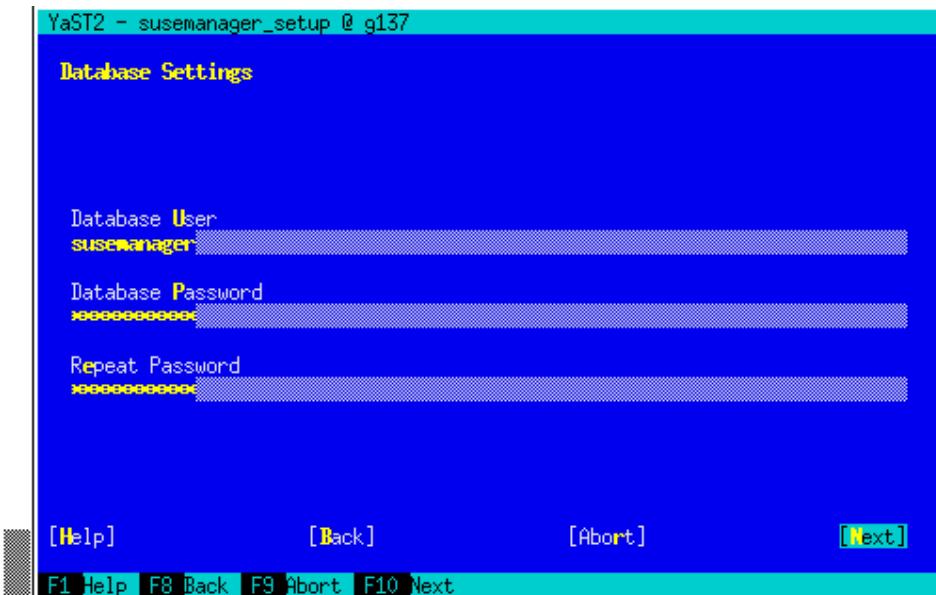
### *Certificate Password*

Without this password it will not be possible to set up a Uyuni Proxy Server.

4. Click [ **Next** ] to continue.



- From the **SUSE Manager Setup > Database Settings** screen, enter a database user and password and click **[ Next ]** to continue. Passwords must be at least seven characters in length, and must not contain spaces, single or double quotation marks (' or "'), exclamation marks (!), or dollar signs (\$). Always store your passwords in a secure location.



- Click **[ Next ]** to continue.
- Click **[ Yes ]** to run setup when prompted.
- Once setup has completed, click **[ Next ]** to continue. You will see the address of the Uyuni Web UI.
- Click **[ Finish ]** to complete Uyuni setup.

In the next section you will create the administrator's account and synchronize with SUSE Customer Center.

## Creating the Main Administration Account

This section will walk you through creating your organizations main administration account for Uyuni.



### *Admin and User Accounts*

The main administration account is the *highest authority account* within Uyuni and therefore account access information should be stored in a secure location.

For security it is recommended that the main administrator creates *low level admin accounts* designated for administration of organizations and individual groups.

### *Procedure: Setting Up the Main Administration Account*

1. In the browser, enter the address provided after completing setup and open the Uyuni Web UI.
2. Add your organization name to the **Create Organization > Organization Name** field.
3. Add your username and password to the **Create Organization > Desired Login** and **Create Organization > Desired Password** fields.
4. Fill in the Account Information fields including an email for system notifications.
5. Click [ **Create Organization** ] to finish creating your administration account.

The screenshot shows the 'Create Organization' form. It has two main sections: 'Organization Details' and 'Create SUSE Manager Administrator'.  
In 'Organization Details', there is a field for 'Organization Name\*' with a tip: 'Between 3 and 128 characters'.  
In 'Create SUSE Manager Administrator', there are fields for 'Desired Login\*', 'Desired Password \*:', 'Confirm Password \*:', and 'Password Strength:' (with a strength bar). Below these are fields for 'Email\*', 'First Name\*:', and 'Last Name\*:'.  
At the bottom, there is a note: '\* - Required Field' and a green 'Create Organization' button.

You are now presented with the Uyuni **Home > Overview** page.

## Synchronizing Products from SUSE Customer Center

SUSE Customer Center (SCC) maintains a collection of repositories which contain packages, software and updates for all supported enterprise client systems. These repositories are organized into channels

---

each of which provide software specific to a distribution, release and architecture. After synchronizing with SCC clients may receive updates, and be organized into groups and assigned to specific product software channels.

This section covers synchronizing with SCC from the Web UI and adding your first client channel.

Before you can synchronize software repositories with SCC, you will need enter Organization Credentials in SUSE Manager. These organization credentials (previously called mirror credentials) give you access to the SUSE product downloads. You will find your organization credentials in <https://scc.suse.com/organization>.

Enter your organization credentials in the SUSE Manager Web UI:

*Procedure: Entering Organization Credentials*

1. In the SUSE Manager Web UI, select **Main Menu > Admin > Setup Wizard**.
2. From the **Setup Wizard** page select the [ **Organization Credentials** ] tab.
3. Click [ **Add a new credential** ].
4. In the dialog, enter **Username** and **Password**, and confirm with [ **Save** ].

When the credentials are confirmed with a check-mark icon, proceed with [Procedure: Synchronizing with SUSE Customer Center](#).

*Procedure: Synchronizing with SUSE Customer Center*

1. In the Web UI, select **Main Menu > Admin > Setup Wizard**.
2. From the **Setup Wizard** page select the [ **SUSE Products** ] tab. Wait a moment for the products list to populate. If you previously registered with SUSE Customer Center a list of products will populate the table. This table lists architecture, channels, and status information. For more information, see [ **Reference > Admin > Wizard** ].

The screenshot shows the 'SUSE Products' tab of the Setup Wizard. The main area displays a table of products with columns for Product Description, Arch, and Channels. A note on the right explains that only products linked to organization credentials are shown. A progress bar indicates synchronization is complete for the selected product.

Product Description	Arch	Channels
Open Enterprise Server 2018	x86_64	
RHEL Expanded Support 5	i386	
RHEL Expanded Support 5	x86_64	
> RHEL Expanded Support 6	i386	
> RHEL Expanded Support 6	x86_64	
> RHEL Expanded Support 7	x86_64	
SUSE Container as a Service Platform 1.0	x86_64	
SUSE Container as a Service Platform 2.0	x86_64	
> SUSE Linux Enterprise Desktop 11 SP2	i586	
> SUSE Linux Enterprise Desktop 11 SP2	x86_64	
> SUSE Linux Enterprise Desktop 11 SP3	i586	
> SUSE Linux Enterprise Desktop 11 SP3	x86_64	
> SUSE Linux Enterprise Desktop 11 SP4	i586	
> SUSE Linux Enterprise Desktop 11 SP4	x86_64	
> SUSE Linux Enterprise Desktop 12	x86_64	
> SUSE Linux Enterprise Desktop 12 SP1	x86_64	
> SUSE Linux Enterprise Desktop 12 SP2	x86_64	
> SUSE Linux Enterprise Desktop 12 SP3	x86_64	
> SUSE Linux Enterprise Desktop 15	x86_64	100%
> SUSE Linux Enterprise High Performance Computing 15	aarch64	
> SUSE Linux Enterprise High Performance Computing 15	x86_64	
> SUSE Linux Enterprise Server 10 SP3	i586	
> SUSE Linux Enterprise Server 10 SP3	ia64	
> SUSE Linux Enterprise Server 10 SP3	ppc	
> SUSE Linux Enterprise Server 10 SP3	s390x	

Page 1 of 4      First | Prev | Next | Last

3. If your SUSE Linux Enterprise client is based on **x86\_64** architecture scroll down the page and select the check box for this channel now.
  - Add channels to Uyuni by selecting the check box to the left of each channel. Click the arrow symbol to the left of the description to unfold a product and list available modules.
  - Start product synchronization by clicking the [ **Add Products** ] button.

After adding the channel Uyuni will schedule the channel to be copied. This can take a long time as Uyuni will copy channel software sources from the SUSE repositories located at SUSE Customer Center

to local `/var/spacewalk/` directory of your server.

#### *PostgreSQL and Transparent Huge Pages*

In some environments, *Transparent Huge Pages* provided by the kernel may slow down PostgreSQL workloads significantly.



To disable *Transparant Huge Pages* set the `transparent_hugepage` kernel parameter to `never`. This has to be changed in `/etc/default/grub` and added to the line `GRUB_CMDLINE_LINUX_DEFAULT`, for example:

```
GRUB_CMDLINE_LINUX_DEFAULT="resume=/dev/sda1 splash=silent quiet  
showopts elevator=noop transparent_hugepage=never"
```

To write the new configuration run `grub2-mkconfig -o /boot/grub2/grub.cfg`. To update the grub2 during boot run `grub2-install /dev/sda`.

Monitor channel synchronization process in real-time by viewing channel log files located in the directory `/var/log/rhn/reposync`:

```
tailf /var/log/rhn/reposync/<CHANNEL_NAME>.log
```

After the channel sync process has completed proceed to [ **Client-configuration > Manual-registration-overview > Client Registration** ].

## SUSE Manager Proxy Registration

Uyuni Proxy systems are registered as traditional clients or as Salt clients using a bootstrap script. Migrating a traditionally registered Proxy system to a Salt Proxy system is not possible. Re-install the Proxy if you want to switch to Salt.

The following procedure describe software channel setup and registering the installed Uyuni Proxy with an activation key as a Uyuni client.



#### *Downloading Channels*

Before you can select the correct child channels while creating the activation key, ensure you have completely downloaded the Uyuni Proxy 4 channel and all the recommended and mandatory SUSE Linux Enterprise 15 channels.

#### *Procedure: Registering the Proxy*

1. Create an activation key based on the `SLE-Product-SUSE-Manager-Proxy-4.0-Pool` base channel. For more information about activation keys, see [ **Client-configuration > Clients-and-activation-keys > Creating Activation Key** ].

## Create Activation Key

### Activation Key Details

Systems registered with this activation key will inherit the settings listed below.

#### Description:

SUSE Manager 4.0 Proxy

Use this to describe what kind of settings this key will reflect on systems that use it. If left blank, this field will be filled in 'None'.

#### Key:

1- suse\_manager\_4.0\_proxy

Activation key can contains only numbers [0-9], letters [a-z A-Z], '-' , '\_' and ':'.

Leave blank for automatic key generation. Note that the prefix is an indication of the SUSE Manager organization the key is associated with.

#### Usage:

Leave blank for unlimited use.

#### Base Channel:

SLE-Product-SUSE-Manager-Proxy-4.0-Pool for x86\_64

Choose "SUSE Manager Default" to allow systems to register to the default SUSE Manager provided channel that corresponds to the installed SUSE Linux version. Instead of the default, you may choose a particular SUSE provided channel or a custom base channel, but if a system using this key is not compatible with the selected channel, it will fall back to its SUSE Manager Default channel.

#### Child Channels:

✓ SLE-Product-SUSE-Manager-Proxy-4.0-Pool for x86\_64

 include recommended

  SLE-Module-Basesystem15-SP1-Pool for x86\_64 Proxy 4.0  recommended 

  SLE-Module-Basesystem15-SP1-Updates for x86\_64 Proxy 4.0  recommended 

  SLE-Module-Server-Applications15-SP1-Pool for x86\_64 Proxy 4.0  recommended 

*Figure 1. Proxy Activation Key*

2. From the **Child Channels** listing select the recommended channels by clicking the **include recommended** icon:
  - SLE-Module-Basesystem15-SP1-Pool
  - SLE-Module-Basesystem15-SP1-Updates
  - SLE-Module-Server-Applications15-SP1-Pool
  - SLE-Module-Server-Applications15-SP1-Updates
  - SLE-Module-SUSE-Manager-Proxy-4.0-Pool
  - SLE-Module-SUSE-Manager-Proxy-4.0-Updates

The **SLE-Product-SUSE-Manager-Proxy-4.0-Updates** channel is mandatory.

**Base Channel:**

SLE-Product-SUSE-Manager-Proxy-4.0-Pool for x86\_64

Choose "SUSE Manager Default" to allow systems to register to the default SUSE Manager provided channel that corresponds to the installed SUSE Linux version. Instead of the default, you may choose a particular SUSE provided channel or a custom base channel, but if a system using this key is not compatible with the selected channel, it will fall back to its SUSE Manager Default channel.

**Child Channels:**

- ✓ SLE-Product-SUSE-Manager-Proxy-4.0-Pool for x86\_64
  - include recommended
  - SLE-Module-Basesystem15-SP1-Pool for x86\_64 Proxy 4.0 ⓘ recommended
  - SLE-Module-Basesystem15-SP1-Updates for x86\_64 Proxy 4.0 ⓘ recommended
  - SLE-Module-Server-Applications15-SP1-Pool for x86\_64 Proxy 4.0 ⓘ recommended
  - SLE-Module-Server-Applications15-SP1-Updates for x86\_64 Proxy 4.0 ⓘ recommended
  - SLE-Module-SUSE-Manager-Proxy-4.0-Pool for x86\_64 ⓘ recommended
  - SLE-Module-SUSE-Manager-Proxy-4.0-Updates for x86\_64 ⓘ recommended
  - SLE-Product-SUSE-Manager-Proxy-4.0-Updates for x86\_64 ⓘ mandatory

Any system registered using this activation key will be subscribed to the selected child channels.

**Add-On System Types:**

- Container Build Host
- OS Image Build Host
- Virtualization Host

**Contact Method:**

Default

**Universal Default:**

*Figure 2. Base and Child Proxy Channel*

3. Modify a bootstrap script for the proxy if needed. If you want to run the proxy on a traditional client (system type **Management**) uncheck **Bootstrap using Salt**. Using Salt is the default. For more information about bootstrap scripts, see [ **Client-configuration > Registration-bootstrap >** ].

## SUSE Manager Configuration - Bootstrap

The following information will be used to generate bootstrap scripts. These bootstrap scripts can be used to configure a client to use. Once the bootstrap scripts have been generated, they will be available from [this server](#).

Please note that some manual configuration of these scripts may still be required. The bootstrap script can be found on the SUSE M /srv/www/htdocs/pub/bootstrap

General    **Bootstrap Script**    Organizations    Restart    Cobbler    Bare-metal systems

### Client Bootstrap Script Configuration

<b>SUSE Manager server hostname*</b>	suma-refhead-srv.mgr.suse.de
<b>SSL cert location*</b>	/srv/www/htdocs/pub/rhn-org-trusted-ssl-cert-1.0-1.noarch.rpm
<b>Bootstrap using Salt</b>	<input checked="" type="checkbox"/>
<b>Enable SSL</b>	<input checked="" type="checkbox"/>
<b>Enable Client GPG checking</b>	<input checked="" type="checkbox"/>
<b>Enable Remote Configuration</b>	<input type="checkbox"/>
<b>Enable Remote Commands</b>	<input checked="" type="checkbox"/>
<b>Client HTTP Proxy</b>	
<b>Client HTTP Proxy username</b>	
<b>Client HTTP Proxy password</b>	

**Update**

*Figure 3. Modifying Bootstrap Script*

4. Create the SUSE Manager Tools Repository for bootstrapping, see [ [Client-configuration > Creating-a-tools-repository > Create Tools Repository](#) ].
5. Bootstrap the client with the bootstrap script. For more information, see [client-configuration/pages/registration-bootstrap.pdf](#).
6. In case of a Salt client, accept the key on the **Main Menu > Salt > Keys** page by clicking the check mark. It then will appear in the **Main Menu > Systems > Overview**.
7. Check via **System Details > Software > Software Channels** that the four proxy channels (**Pool** and **Updates** for **SLE-PRODUCT** and **SLE-MODULE**) plus the recommended channels are selected; **SLE-PRODUCT-Pool** as the base channel and the others as child channels.

The screenshot shows the 'Software Channels' tab selected in the navigation bar. A note at the top states: 'When subscribing to a channel that contains a product, the product package will automatically be installed on traditionally registered systems or added to the package states on Salt managed systems.' Below this, two sections are displayed: 'Base Channel' and 'Child Channels'.

**Base Channel:** You can change the base software channel your system is subscribed to. The system will be unsubscribed from all software channels, and subscribed to the new base software channel. Options include '(none, disable service)' and 'SLE-Product-SUSE-Manager-Proxy-4.0-Pool for x86\_64'. A checkbox for 'include recommended' is checked.

**Child Channels:** This system is subscribed to the checked channels beneath, if any. Disabled checkboxes indicate channels that can't be manually subscribed or unsubscribed from. Recommended channels listed are: SLE-Module-Basesystem15-SP1-Pool for x86\_64 Proxy 4.0, SLE-Module-Basesystem15-SP1-Updates for x86\_64 Proxy 4.0, SLE-Module-Server-Applications15-SP1-Pool for x86\_64 Proxy 4.0, SLE-Module-Server-Applications15-SP1-Updates for x86\_64 Proxy 4.0, SLE-Module-SUSE-Manager-Proxy-4.0-Pool for x86\_64, SLE-Module-SUSE-Manager-Proxy-4.0-Updates for x86\_64, and SLE-Product-SUSE-Manager-Proxy-4.0-Updates for x86\_64.

A 'Next' button is visible at the bottom left.

Figure 4. Proxy Channels

## SUSE Manager Proxy Setup

Uyuni Proxy requires additional configuration in order to make it useful.



### Proxy Chains

It is possible to arrange Salt proxies in a chain. In such a case, the upstream proxy is named “parent”.

Make sure the proxie’s TCP ports **4505** and **4506** are open and that the proxy can reach the Uyuni server (or another upstream proxy) on these ports.

## Copy Server Certificate and Key

The proxy will share some SSL information with the Uyuni server. Copy the certificate and its key from the Uyuni 4 server or the upstream proxy.

As root, enter the following commands on the proxy using your Uyuni 4 server or chained proxy 4 named **PARENT**:

```
mkdir -m 700 /root/ssl-build  
cd /root/ssl-build  
scp root@PARENT:/root/ssl-build/RHN-ORG-PRIVATE-SSL-KEY .  
scp root@PARENT:/root/ssl-build/RHN-ORG-TRUSTED-SSL-CERT .  
scp root@PARENT:/root/ssl-build/rhn-ca-openssl.cnf .
```



#### *Known Limitation*

The SUSE Manager Proxy functionality is only supported if the SSL certificate was signed by the same CA as the Uyuni Server certificate. Using certificates signed by different CAs for Proxies and Server is not supported.

## Running `configure-proxy.sh`

The `configure-proxy.sh` script will finalize the setup of your SUSE Manager Proxy.

Now execute the interactive `configure-proxy.sh` script. Pressing `Enter` without further input will make the script use the default values provided between brackets `[ ]`. Here is some information about the requested settings:

### **Uyuni Parent**

A Uyuni parent can be either another proxy server or a Uyuni server.

### **HTTP Proxy**

A HTTP proxy enables your Uyuni proxy to access the Web. This is needed if direct access to the Web is prohibited by a firewall.

### **Proxy Version to Activate**

Normally, the correct value (3.0, 3.1, 3.2, or 4.0) should be offered as a default.

### **Traceback Email**

An email address where to report problems.

### **Use SSL**

For safety reasons, press `Y`.

### **Do You Want to Import Existing Certificates?**

Answer `N`. This ensures using the new certificates that were copied previously from the Uyuni server.

### **Organization**

The next questions are about the characteristics to use for the SSL certificate of the proxy. The organization might be the same organization that was used on the server, unless of course your proxy is not in the same organization as your main server.

### **Organization Unit**

The default value here is the proxy's hostname.

## City

Further information attached to the proxy's certificate. Beware the country code must be made of two upper case letters. For further information on country codes, refer to the online [list of alpha-2 codes](#).



### *Country Code*

As the country code enter the country code set during the SUSE Manager installation. For example, if your proxy is in US and your Uyuni in DE, you must enter **DE** for the proxy.

## Cname Aliases (Separated by Space)

Use this if your proxy server can be accessed through various DNS CNAME aliases. Otherwise it can be left empty.

## CA Password

Enter the password that was used for the certificate of your Uyuni server.

## Do You Want to Use an Existing SSH Key for Proxying SSH-Push Salt Minion?

Use this option if you want to reuse a SSH key that was used for SSH-Push Salt clients on the server.

## Create and Populate Configuration Channel rhn\_proxy\_config\_1000010001?

Accept default **Y**.

## SUSE Manager Username

Use same user name and password as on the Uyuni server.

## Activate advertising proxy via SLP?

SLP stands for Service Location Protocol.

If parts are missing, such as CA key and public certificate, the script prints commands that you must execute to integrate the needed files. When the mandatory files are copied, re-run **configure-proxy.sh**. Also restart the script if a HTTP error was met during script execution.

**configure-proxy.sh** activates services required by Uyuni Proxy, such as **squid**, **apache2**, **salt-broker**, and **jabberd**.

To check the status of the proxy system and its clients, click the proxy system's details page on the Web UI (**Main Menu** > **Systems** > **Proxy**, then the system name). **Connection** and **Proxy** subtabs display the respective status information.

## Enabling PXE Boot via SUSE Manager Proxy

### Synchronizing Profiles and System Information

To enable PXE boot via a proxy server, additional software must be installed and configured on both the Uyuni server and the SUSE Manager Proxy server.

1. On the Uyuni server install susemanager-tftpsync :

```
zypper in susemanager-tftpsync
```

2. On the SUSE Manager Proxy server install susemanager-tftpsync-recv :

```
zypper in susemanager-tftpsync-recv
```

3. Run the **configure-tftpsync.sh** setup script and enter the requested information:

```
configure-tftpsync.sh
```

It asks for hostname and IP address of the Uyuni server and of the proxy itself. Additionally, it asks for the tftpboot directory on the proxy.

4. On the Uyuni server, run **configure-tftpsync.sh** to configure the upload to the SUSE Manager Proxy server:

```
configure-tftpsync.sh FQDN_of_Proxy_Server
```

5. To start an initial synchronization on the Uyuni Server run:

```
cobbler sync
```

Also can also be done after each a change within Cobbler that needs to be synchronized immediately. Otherwise Cobbler synchronization will also run automatically when needed. For more information about Cobbler, see [ [Client-configuration > Cobbler > Cobbler](#) ].

## Configuring DHCP for PXE via SUSE Manager Proxy

Uyuni is using Cobbler to provide provisioning. PXE (tftp) is installed and activated by default. To enable systems to find the PXE boot on the SUSE Manager Proxy server add the following to the DHCP configuration for the zone containing the systems to be provisioned:

```
next-server: <IP_Address_of_SUSE_Manager_Proxy_Server>
filename: "pxelinux.0"
```

## Replacing a SUSE Manager Proxy

A SUSE Manager Proxy is **dumb** in the sense that it does not contain any information about the clients that are connected to it. A SUSE Manager Proxy can therefore be replaced by a new one. Naturally, the replacement proxy must have the same name and IP address as its predecessor.

In order to replace a SUSE Manager Proxy and keeping the clients registered to the proxy leave the old proxy in Uyuni. Create a reactivation key for this system and then register the new proxy using the reactivation key. If you do not use the reactivation key, you will need to re-registered all the clients against the new proxy.

*Procedure: Replacing a SUSE Manager Proxy and Keeping the Clients Registered*

1. Before starting the actual migration procedure, save the data from the old proxy, if needed. Consider copying important data to a central place that can also be accessed by the new server:
  - Copy the scripts that are still needed.
  - Copy the activation keys from the previous server. Of course, it is always better to re-create the keys.
2. Shutdown the server.
3. Install a new Uyuni 4.0 Proxy, see [Proxy Installation](#).
4. In the Uyuni Web UI select the newly installed SUSE Manager Proxy and delete it from the systems list.
5. In the Web UI, create a reactivation key for the old proxy system: On the System Details tab of the old proxy click **Reactivation**. Then click **Generate New Key**, and remember it (write it on a piece of paper or copy it to the clipboard). For more information about reactivation keys, see [[Reference > Systems > Reactivation Keys](#)].
6. After the installation of the new proxy, perform the following actions (if needed):
  - Copy the centrally saved data to the new proxy system.
  - Install any other needed software.
  - If the proxy is also used for autoinstallation, do not forget to setup TFTP synchronization.



*Proxy Installation and Client Connections*

During the installation of the proxy, clients will not be able to reach the Uyuni server. After a SUSE Manager Proxy system has been deleted from the systems list, all clients connected to this proxy will be (incorrectly) listed as **directly connected** to the Uyuni server. After the first successful operation on a client *such as execution of a remote command or installation of a package or patch* this information will automatically be corrected. This may take a few hours.