



# Installation Guide

SUSE Manager 4.0

March 28, 2019



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## Introduction

SUSE Manager 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. SUSE Manager allows you to manage all your Linux clients in one place, with one easy-to-understand dashboard.

SUSE Manager 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 SUSE Manager 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.

SUSE Manager 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.

DRAFT

## Requirements for Installation

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.



SUSE Manager 4.0 is based on SLES 12 SP3 as the host operating system.

## 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 SUSE Manager. 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 SUSE Manager 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](#)

## Hardware Requirements

This table outlines hardware and software requirements on x86\_64 and IBM Power PC architecture. For installation on z Systems, see:

- xref:advanced\_topics\_suma3\_zsystems.adoc#at-zsystems[{productname} and {zseries}]

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
	<code>/var/lib/pgsql</code> Minimum 50 GB
	<code>/var/spacwalk</code> Minimum 50 GB per SUSE product and 250 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
	<code>/var/lib/pgsql</code> Minimum 50 GB
	<code>/var/spacwalk</code> Minimum 50 GB per SUSE product and 250 GB per Red Hat product

## Network Requirements

This section details the networking and port requirements for SUSE Manager.

### Fully Qualified Domain Name (FQDN)

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

In a production environment, SUSE Manager 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
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 minions
4506	TCP	Salt, used by the Salt-master to accept communication requests from minions
5222	TCP	XMPP client, used for communications with the <i>osad</i> 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:

- [xref:bp\\_chap\\_choosing\\_dist\\_scheme.adoc#bp-dist-scheme](#)[Disconnected Setup]
- [xref:advanced\\_topics\\_ports.adoc#at-ports](#)[Firewall Ports]

## Supported Client Systems

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

*Table 4. Supported Client Systems*

Operating Systems	Architecture	Traditional Clients	Salt Clients
SUSE Linux Enterprise 11 SP4	x86, x86_64, Itanium, IBM POWER, z Systems	Supported	Supported
SUSE Linux Enterprise 12 SP3, 12 SP4	x86_64, IBM POWER (IBM Power PC), z Systems, ARM	Supported	Supported
SUSE Linux Enterprise 15	x86_64, IBM POWER (IBM Power PC), z Systems, ARM	Supported	Supported
<i>Latest minor release Red Hat Enterprise Linux Server 6</i>	x86, x86_64	Supported	Supported
<i>Latest minor release Red Hat Enterprise Linux Server 7</i>	x86_64	Supported	Supported
Open Enterprise Server 2015, 2015 SP1, 2018	x86_64	Supported	Supported



### *Supported Versions and SP Levels*

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

# Installation

## Installing SUSE Manager Server

SUSE Manager Server is a SUSE base product from version 4.0. This section describes how to install SUSE Manager Server from SUSE Linux Enterprise Server installation media. It assumes you have already registered the SUSE Manager product with the SUSE Customer Center and have a registration code.

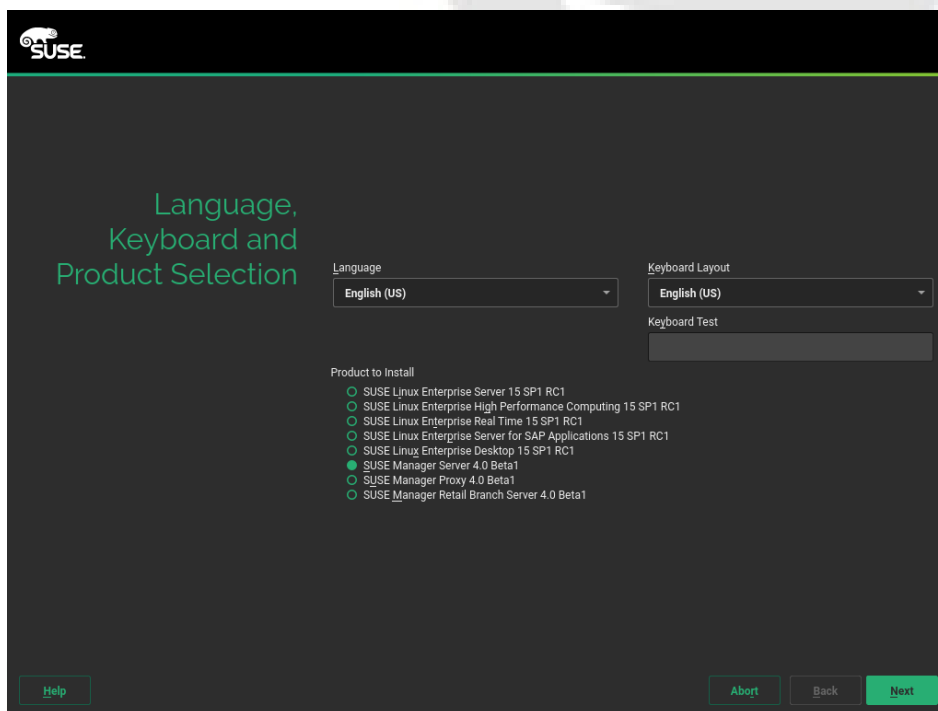
For information on registering with SUSE Customer Center, or obtaining installation media, see [xref:installation-general-requirements](#).



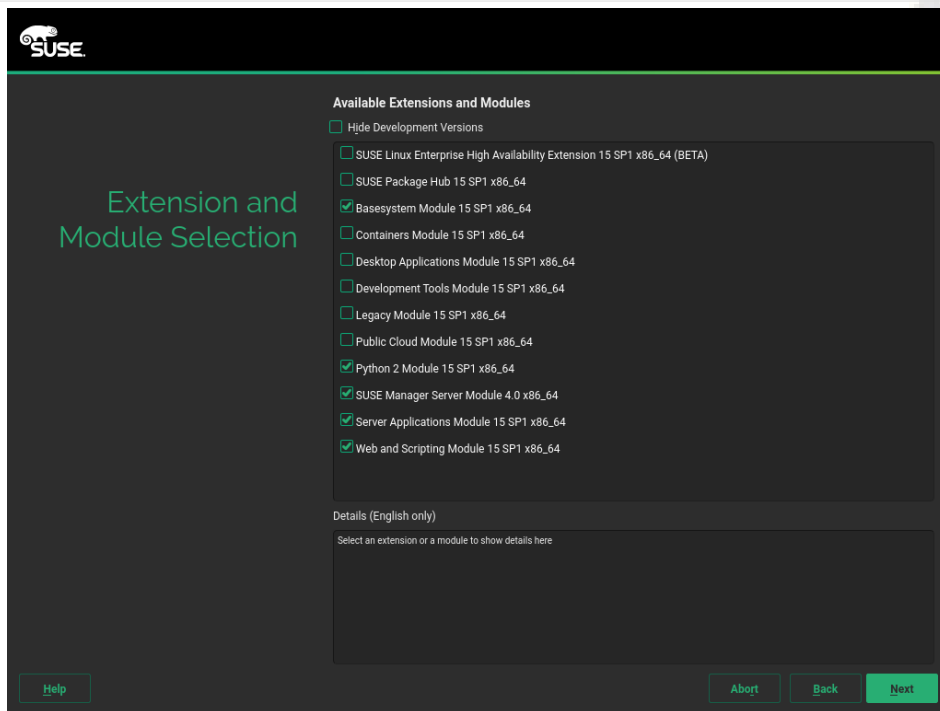
If you want to install SUSE Manager on a virtual machine, ensure your virtual machine has enough disk space and RAM by checking the requirements at [xref:\[install-hardware-requirements\]](#)

### *Procedure: Installing SUSE Manager Server from a DVD image*

1. Boot your server from the installation image, you might need to adjust the boot order in the BIOS.
2. When prompted, select **Installation**.



3. In the **Language, Keyboard and Product Selection** screen, check the **SUSE Manager Server** checkbox, and click [ **Next** ].



4. Read and agree to the End User Licence Agreement, and click [ **Next** ].
5. In the **Registration** screen, check the **Register System via scc.suse.com** checkbox, enter your SUSE Customer Center credentials, and click [ **Next** ].
6. OPTIONAL: In the **Add On Product** screen, select any additional or add-on products you require, and click [ **Next** ].
7. In the **System Role** screen, check the **SUSE Manager Server** checkbox, and click [ **Next** ].
8. In the **Suggested Partitioning** screen, accept the default values, or use the [ **Guided Setup** ] or [ **Expert Partitioner** ] options to customize your partitioning model, and click [ **Next** ].
9. In the **Clock and Time Zone** screen, enter your region and timezone, and click [ **Next** ].
10. In the **Local Users** screen, create a new user, and click [ **Next** ].
11. In the **System Administrator "root"** screen, create the "root" user, and click [ **Next** ].
12. Review the settings on the **Installation Settings** screen, and then click [ **Install** ].

When the installation procedure has finished, you can check that you have all the required modules by using the **SUSEConnect --status-text** command at a command prompt. For SUSE Manager Server, the expected modules are:

- SUSE Linux Enterprise Server Basesystem Module
- Python 2 Module
- Server Applications Module
- Web and Scripting Module
- SUSE Manager Server Module

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## Proxy Installation and Connecting Clients

### Requirements

The following section provides SUSE Manager Proxy requirements.

#### Supported Client Systems

For supported clients and their requirements, see `xref:FILENAME.adoc#quickstart.sect.prereq.clientos[]`.

#### Hardware Requirements

Hardware requirements highly depend on your usage scenario. When planning proxy environments, consider the amount of data you want to cache on your proxy. If your proxy should be a 1:1 mirror of your SUSE Manager, the same amount of disk space is required. For specific hardware requirements, see the following table.

Hardware	Required
CPU	Multi-core 64-bit CPU (x86_64).
RAM	Minimum 4 GB for a non-production server
	Minimum 16 GB for a production server
Free Disk Space	Minimum 100 GB for base installation and at least 50 GB for caching per SUSE product and +100 GB per Red Hat product; a resizeable partition strongly recommended.



#### Storage for Proxy Data

SUSE recommends storing the squid proxy caching data on a separate disk formatted with the XFS file system.

#### SSL Certificate Password

For installing the proxy, you need the SSL certificate password entered during the initial installation of SUSE Manager.

#### Network Requirements

For additional network requirements, see `xref:FILENAME.adoc#quickstart.sect.prereq.network[]`.

#### SUSE Customer Center

For using SUSE Manager Proxy, you need an account at SUSE Customer Center (SCC) where your purchased products and product subscriptions are registered. Make sure you have the following subscriptions:

- One or more subscriptions for SUSE Manager Proxy.
- One or more subscriptions for SUSE Manager.

- Subscriptions for the products on the client systems you want to register with SUSE Manager via SUSE Manager Proxy .
- Subscriptions to client entitlements for the client system you want to register with SUSE Manager via SUSE Manager Proxy .

### *Network Time Protocol (NTP)*

The connection to the Web server via Secure Sockets Layer (SSL) requires correct time settings on the server, proxy and clients. For this reason, all systems must use NTP. For more information, see [https://www.suse.com/documentation/sles-12/book\\_sle\\_admin/data/cha\\_netz\\_xntp.html](https://www.suse.com/documentation/sles-12/book_sle_admin/data/cha_netz_xntp.html).

### *Virtual Environments*

The following virtual environments are supported:

- [http://www.linux-kvm.org/page/Main\\_Page](http://www.linux-kvm.org/page/Main_Page)
- <http://www.vmware.com/>
- <http://www.microsoft.com/en-us/server-cloud/solutions/virtualization.aspx>

For running SUSE Manager Proxy in virtual environments, use the following settings for the virtual machine (VM):

- At least 1 GB of RAM
- Bridged network

## *Installation and Setup*

The following section will guide you through the installation and setup procedure.

SUSE Manager 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.

### *Downloading Channels*



Before you can select the correct child channels while creating the activation key, ensure you have completely downloaded the channels for SUSE Linux Enterprise 12 SP4.

### *Procedure: Registering the Proxy*

1. Create an activation key based on the SUSE Linux Enterprise 12 SP4 base channel. For more information about activation keys, see `xref:FILENAME.adoc#create.act.keys[]`.

## Create Activation Key ?

### Activation Key Details

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

#### Description:

SUSE Mgr 3.1 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- susemgr\_3\_1\_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:

SLES12-SP3-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.

Figure 1. Proxy Activation Key

- From the **Child Channels** listing select the SUSE Manager 4.0 Proxy child channel with the matching update channel (**SUSE Manager Proxy-3.2-Pool** and **SUSE-Manager-Proxy-3.2-Updates**). These child channels are required for providing the proxy packages and updates. For normal SLES clients, **SLES12-SP4-Updates** plus **SLE-Manager-Tools12-Pool** and **SLE-Manager-Tools12-Updates** are mandatory.



**SUSE Mgr 3.1 Proxy** Clone Key Delete Key

**Details** **Child Channels** Packages Configuration Groups Activated Systems

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

The following child channels of **SLES12-SP3-Pool for x86\_64** can be associated with this activation key.

<input checked="" type="checkbox"/>	SLE-Manager-Tools12-Pool x86_64 SP3
<input checked="" type="checkbox"/>	SLE-Manager-Tools12-Updates x86_64 SP3
<input type="checkbox"/>	SLE-Module-Adv-Systems-Management12-Pool for x86_64 SP3
<input type="checkbox"/>	SLE-Module-Adv-Systems-Management12-Updates for x86_64 SP3
<input checked="" type="checkbox"/>	SLES12-SP3-Updates for x86_64
<input type="checkbox"/>	SUSE-Manager-Proxy-3.0-Pool for x86_64 SP3
<input type="checkbox"/>	SUSE-Manager-Proxy-3.0-Updates for x86_64 SP3
<input checked="" type="checkbox"/>	SUSE-Manager-Proxy-3.1-Pool for x86_64 SP3
<input checked="" type="checkbox"/>	SUSE-Manager-Proxy-3.1-Updates for x86_64 SP3
<input type="checkbox"/>	SUSE-Manager-Server-3.1-Pool for x86_64 SP3
<input type="checkbox"/>	SUSE-Manager-Server-3.1-Updates for x86_64 SP3

**Update Activation Key**

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 supported since version 3.2. For more information about bootstrap scripts, see [xref:FILENAME.adoc#modify.bootstrap.script\[\]](#).

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 receive updates. 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 S server here: `/srv/www/htdocs/pub/bootstrap`

General

Bootstrap Script

Organizations

Restart

Cobbler

Bare-metal systems

Client Bootstrap Script Configuration

SUSE Manager server hostname\*

manager.example.com

SSL cert location\*

/srv/www/htdocs/pub/rhn-org-trusted-ssl-cert-1.0-1.noarch.rpm

Bootstrap using Salt

☒

Enable SSL

☒

Enable Client GPG checking

☒

Enable Remote Configuration

☐

Enable Remote Commands

☒

Client HTTP Proxy

Client HTTP Proxy username

Client HTTP Proxy password

Update

Figure 3. Modifying Bootstrap Script

- Create the SUSE Manager Tools Repository for bootstrapping, see `xref:FILENAME.adoc#create.tools.repository[]`.
- Bootstrap the client with the bootstrap script. For more information, see `xref:FILENAME.adoc#connect.first.client[]`.
- In case of a Salt client, accept the key on the **Main Menu** > **Salt** > **Keys** page by clicking the check mark and it will appear in the **Main Menu** > **Systems** > **Overview**.
- Check via **System Details** > **Software** > **Software Channels** that the two proxy channels **SUSE Manager Proxy-3.2-Pool** and **SUSE-Manager-Proxy-3.2-Updates** are selected.

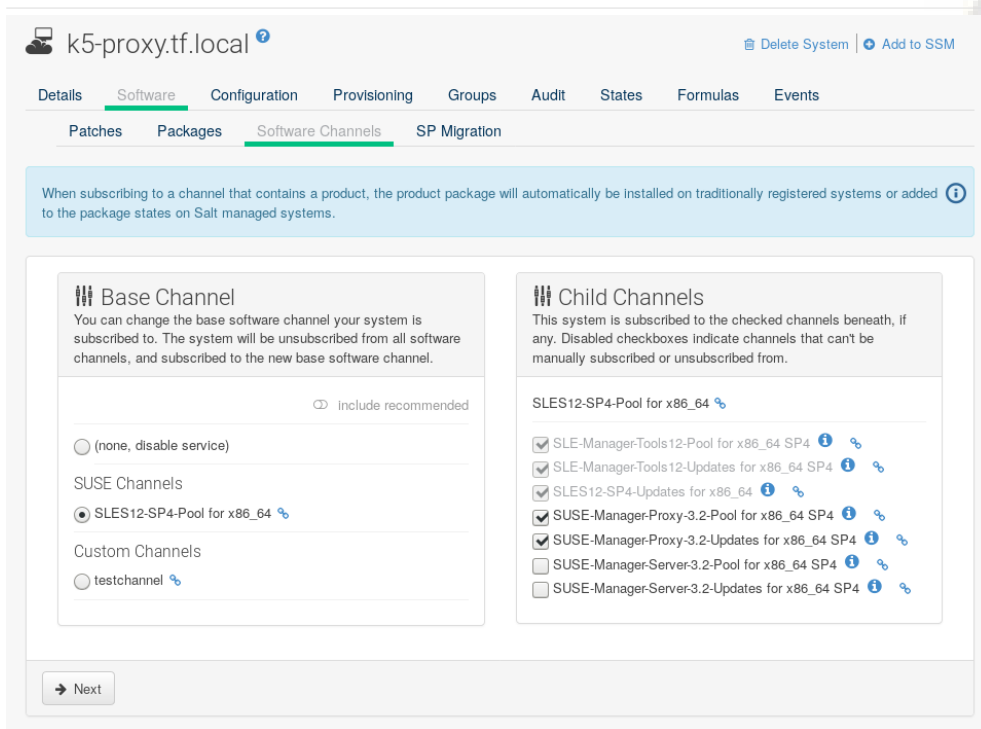


Figure 4. Proxy Channels

A few more steps are still needed:

- Install the `patterns-suma_proxy` pattern (see `xref:FILENAME.adoc#at.manager.proxy.run.pattern[]`)
- Copy the SSL certificate and key from the server (see `xref:FILENAME.adoc#at.manager.proxy.run.copycert[]`)
- Run `configure-proxy.sh` (see `pass:c[xref:FILENAME.adoc#at.manager.proxy.run.confproxy]`)

You will then be able to register your clients against the proxy using the Web UI or a bootstrap script as if it were a SUSE Manager server. For more information, see `xref:FILENAME.adoc#at.manager.proxy.register.saltclients[]`.

### Install the `suma_proxy` pattern

On the server select the `pattern_suma_proxy` package for installation, or make sure the `suma_proxy` pattern is installed using the following command on the proxy as root:

```
zypper in -t pattern suma_proxy
```

The new salt-broker service will be automatically started at the end of the package installation. This service forwards the Salt interactions to the SUSE Manager server.



### 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 proxy's TCP ports **4505** and **4506** are open and that the proxy can reach the SUSE Manager server (or another upstream proxy) on these ports.

### Copy Server Certificate and Key

The proxy will share some SSL information with the SUSE Manager server, so the next step is to copy the certificate and its key from the SUSE Manager server or the upstream proxy.

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

```
mkdir /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 SUSE Manager 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:

#### SUSE Manager Parent

A SUSE Manager parent can be either another proxy server or a SUSE Manager server.

#### HTTP Proxy

A HTTP proxy enables your SUSE Manager 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, or 3.2) 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 SUSE Manager 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 SUSE Manager 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 SUSE Manager server.

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

Use this option if you want to reuse a SSH key that was used for SSH-Push Salt minions 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 SUSE Manager 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 SUSE Manager 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.

### Registering Salt Clients via SUSE Manager Proxy

Proxy servers may now act as a broker and package cache for Salt minions. These minions can be registered with a bootstrap script like the traditional clients, or from the Web UI, or the command line.

Registering Salt clients via SUSE Manager Proxy from the Web UI is done almost the same way as registering clients directly with the SUSE Manager server. The difference is that you specify the name of the proxy in the **Proxy** drop-box on the **Main Menu** > **Systems** > **Bootstrapping** page.

**Bootstrap Minions**

You can add systems to be managed by providing SSH credentials only. SUSE Manager will prepare the system remotely and will perform the registration.

**Host:**

**SSH Port:**

**User:**

**Password:**

**Activation Key:**

**Proxy:**

☒ Disable SSH strict host key checking during bootstrap process

☐ Manage system completely via SSH (will not install an agent)

Figure 5. Bootstrapping a Salt Client With a Proxy

#### Procedure: Register a Salt client through a proxy from the command line

1. Instead of the Web UI, you may use the command line to register a minion through a proxy. Note that this procedure requires that you have installed the salt package on the minion before registration, and have the Advanced systems module activated. Add the proxy FQDN as the master in the minions configuration file located at:



```
/etc/salt/minion
```

or alternatively:

```
/etc/salt/minion.d/NAME.conf
```

2. Add the FQDN to the minion file:

```
master: proxy123.example.com
```

Save and restart the salt-minion service with:

```
systemctl restart salt-minion
```

3. On the Server, accept the new minion key with:

```
salt-key -a 'minion'
```

The minion will now connect to the proxy exclusively for Salt operations and normal HTTP package downloads.

### Registering Clients via SUSE Manager Proxy with a Script

Registering clients (either traditional or Salt) via SUSE Manager Proxy with a script is done almost the same way as registering clients directly with the SUSE Manager server. The difference is that you create the bootstrap script on the SUSE Manager Proxy with a command-line tool. The bootstrap script then deploys all necessary information to the clients. The bootstrap script refers some parameters (such as activation keys or GPG keys) that depend on your specific setup.

1. Create a client activation key on the SUSE Manager server using the Web UI. See [xref:FILENAME.adoc#create.act.keys\[\]](#).
2. On the proxy, execute the `mgr-bootstrap` command-line tool as root. If needed, use the additional command-line switches to tune your bootstrap script. An important option is `--traditional` that enables to opt for a traditional client instead of a salt minion.

To view available options type `mgr-bootstrap --help` from the command line:

```
# mgr-bootstrap --activation-keys=key-string
```

3. Optionally edit the resulting bootstrap script. Execute the bootstrap script on the clients as described in [xref:FILENAME.adoc#connect.first.client\[\]](#).

The clients are registered with the SUSE Manager Proxy specified in the bootstrap script.

### Additional Information about Client Registration on Proxies

Within the Web UI, standard proxy pages will show information about client, no matter whether minions or traditional clients.

A list of clients connected to a proxy can be seen by clicking on the name of the Proxy in **Main Navigation** > **Systems** > **Systems** > **Proxy**, selecting the **Details** tab, and then selecting the **Proxy** tab.

A list of chained proxies for a minion can be seen by clicking on the name of the minion in **Main Navigation** > **Systems** > **All**, selecting the **Details** tab, and then selecting the **Connection** tab.

If you decide to move any of your clients between proxies or the server you will need to repeat the registration process from scratch.

## 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 SUSE Manager server and the SUSE Manager Proxy server.

1. On the SUSE Manager 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 SUSE Manager server and of the proxy itself. Additionally, it asks for the tftpboot directory on the proxy.

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

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

5. To initiate an initial synchronization on the SUSE Manager 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 [xref:FILENAME.adoc#advanced.topics.cobbler\[\]](#).

### Configuring DHCP for PXE via SUSE Manager Proxy

SUSE Manager 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"
```

## Migrating SUSE Manager 3.1 Proxy to Version 4.0 [Management]

The recommended order for migrations is to first migrate the server and then the proxies.

For the migration of traditionally managed proxies there are two possible approaches:

- Existing SUSE Manager proxies may be upgraded to version 3.2 with YaST or **zypper** migration.
- Alternatively, the proxies may be replaced by new ones.

This section documents both approaches.



#### *Migrating SUSE Manager 3 Proxy and Earlier*

For migrating SUSE Manager 3 Proxy and earlier, see [https://www.suse.com/documentation/suse-manager-3/book\\_suma\\_advanced\\_topics\\_31/data/sect1\\_chapter\\_book\\_suma\\_advanced\\_topics\\_31.html](https://www.suse.com/documentation/suse-manager-3/book_suma_advanced_topics_31/data/sect1_chapter_book_suma_advanced_topics_31.html), Chapter "SUSE Manager 3.1 Proxy".

### Replacing a SUSE Manager Proxy

A SUSE Manager Proxy is **dumb** in the sense that it does not contain any information about the clients which 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 SUSE Manager. 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 SUSE Manager 4.0 Proxy, see [xref:FILENAME.adoc#at.manager.proxy.inst-and-clients\[\]](#).
4. In the SUSE Manager 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 [xref:FILENAME.adoc#s5-sm-system-details-react\[\]](#).
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 SUSE Manager 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 SUSE Manager 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.

**Upgrading a SUSE Manager Proxy from 3.1 to 4.0**

In most situations upgrading the proxy will be your preferred solution as this retains all cached packages. Selecting this route saves time especially regarding proxies connected to SUSE Manager server via low-bandwidth links. This upgrade is similar to a standard client migration.

*Synchronizing Target Channels*

Before successfully initializing the product migration, you first must make sure that the migration target channels are completely mirrored. To upgrade to SUSE Manager 3.2 Proxy, you will require at least the [SUSE Linux Enterprise Server 12 SP4](#) base channel with the [SUSE Manager Proxy 3.2](#) child channel for your architecture.

*Procedure: Migrating Proxy to 4.0*

1. Direct your browser to the SUSE Manager Web UI where your proxy is registered, and login.
2. On the **Main Menu** > **Systems** > **Systems** > **Proxy** page select your proxy server from the table.

**k5-proxy31.tf.local** ?

Details Software Configuration Provisioning Groups Audit Events

Overview Properties Remote Command Connection Proxy Reinstall

**System Status**

✓ System is up to date

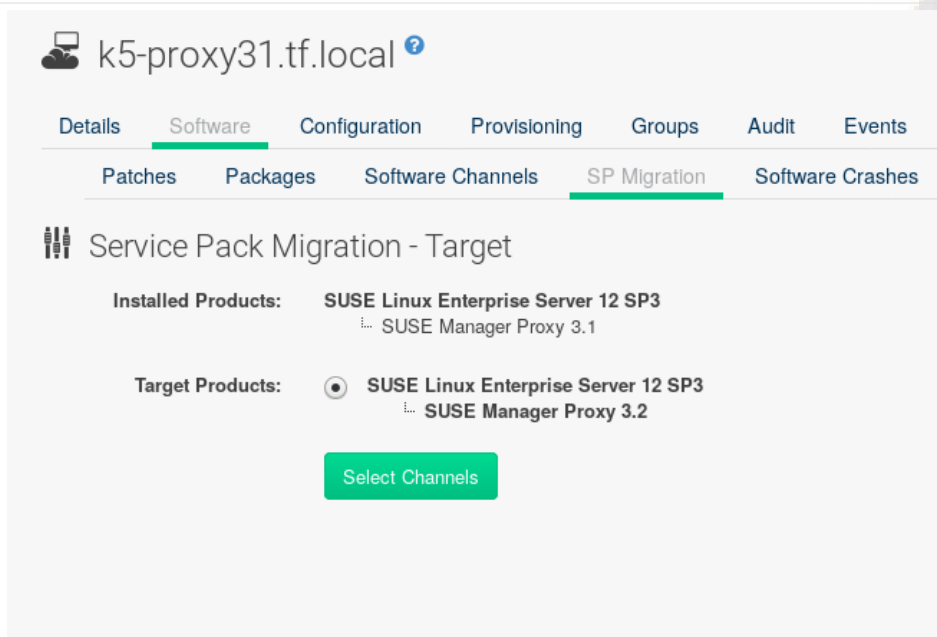
**System Info**

Hostname:	k5-proxy31.tf.local
IP Address:	10.160.65.180
IPv6 Address:	fe80::8d4:c4ff:fe31:4c2c
Virtualization:	KVM/QEMU
UUID:	963aba4851f54708a3a0204150f94fa3
Kernel:	4.4.73-5-default
SUSE Manager System ID:	1000010002
Activation Key:	1-DEFAULT
Installed Products:	<div>SUSE Linux Enterprise Server 12 SP3</div> <div>SUSE Manager Proxy 3.1</div>
Lock Status:	System is <b>unlocked</b> <a href="#">(Lock system)</a>

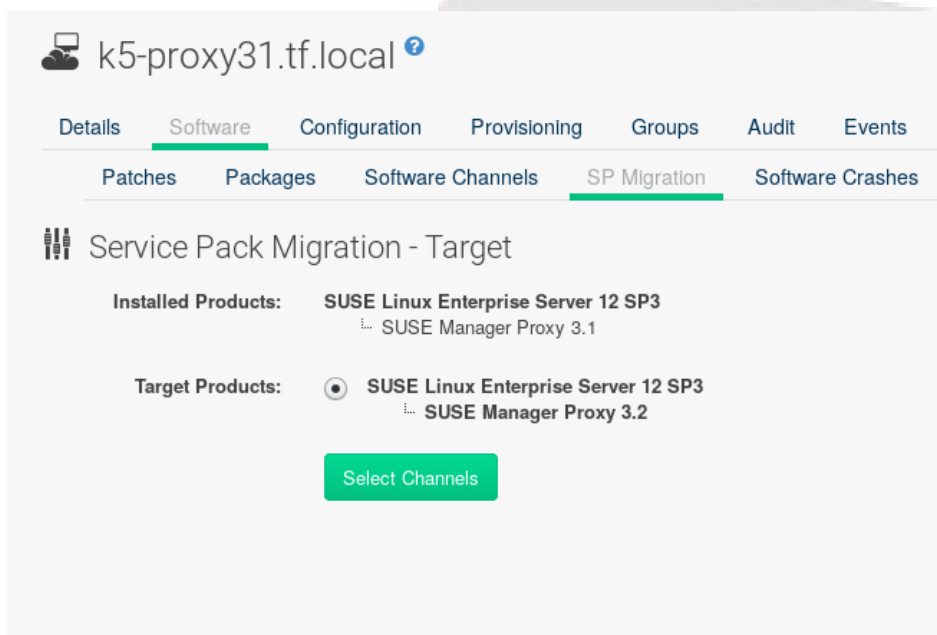
**Subscribed Channels** ([Alter Channel Subscriptions](#))

- [testchannel](#)

3. On the system's detail page select the **Software** > **SP Migration** tab.




4. From this page you will see installed products listed on your proxy client, and the available target products. Select the required **Target Products**. In this case, you will require **SUSE Linux Enterprise Server 12 SP4** with **SUSE Manager Proxy 3.2**.



5. Then confirm with [ **Select Channels** ].



 k5-proxy31.tf.local [?](#) [Delete System](#)

Details **Software** Configuration Provisioning Groups Audit Events

Patches Packages Software Channels **SP Migration** Software Crashes

### Service Pack Migration - Channels

**Installed Products:** SUSE Linux Enterprise Server 12 SP3  
SUSE Manager Proxy 3.1


**Target Products:** SUSE Linux Enterprise Server 12 SP3  
SUSE Manager Proxy 3.2

**Target Base Channel:** SLES12-SP3-Pool for x86\_64

- **Mandatory Child Channels:**
  - ☒ SLE-Manager-Tools12-Pool x86\_64 SP3
  - ☒ SLE-Manager-Tools12-Updates x86\_64 SP3
  - ☒ SLES12-SP3-Updates for x86\_64
  - ☒ SUSE-Manager-Proxy-3.2-Pool for x86\_64
  - ☒ SUSE-Manager-Proxy-3.2-Updates for x86\_64
- **Optional Child Channels:**
  - ☐ bettertest32
  - ☐ SLE-12-SP3-GA-Desktop-nVidia-Driver WE-SP3
  - ☐ SLE-Module-Adv-Systems-Management12-Pool for x86\_64 SP3
  - ☐ SLE-Module-Adv-Systems-Management12-Updates for x86\_64
  - ☐ SLE-WE12-SP3-Pool for x86\_64
  - ☐ SLE-WE12-SP3-Updates for x86\_64
  - ☐ SUSE-Manager-Retail-3.1-Pool for x86\_64 SP3
  - ☐ SUSE-Manager-Retail-3.1-Updates for x86\_64 SP3
  - ☐ SUSE-Manager-Server-3.2-Pool for x86\_64
  - ☐ SUSE-Manager-Server-3.2-Updates for x86\_64

[Schedule Migration](#)

6. From the [Schedule Migration](#) menu, select the time and click [ **Confirm** ].

 k5-proxy31.tf.local [?](#) [Delete System](#) | [Add to SSM](#)

[Details](#) [Software](#) [Configuration](#) [Provisioning](#) [Groups](#) [Audit](#) [Events](#)

[Patches](#) [Packages](#) [Software Channels](#) [SP Migration](#) [Software Crashes](#)

### Service Pack Migration - Confirm



Please confirm below to schedule the migration of this system to the following products:



- **SUSE Linux Enterprise Server 12 SP3**
  - SUSE Manager Proxy 3.2

Channel subscriptions after the migration:

- **SLES12-SP3-Pool for x86\_64**
  - SLE-Manager-Tools12-Pool x86\_64 SP3
  - SLE-Manager-Tools12-Updates x86\_64 SP3
  - SLES12-SP3-Updates for x86\_64
  - SUSE-Manager-Proxy-3.2-Pool for x86\_64
  - SUSE-Manager-Proxy-3.2-Updates for x86\_64

**Schedule action for no sooner than:**

 9/18/18  10:26 am CEST

 In order to detect any possible problems it is recommended to always do a **Dry Run** before scheduling the actual Service Pack Migration. 

[Go Back](#) [Dry Run](#) [Confirm](#)

Check the [System Status](#) on the **System Details** > **Overview** when the migration is done.

**f51.suse.de** ?

Details | Software | Configuration | Provisioning | Groups | Virtualization | Audit

Overview | Properties | Remote Command | Connection | Proxy | Reactivation

### System Status

✔ **System is up to date**  
 ⚙ The system requires a reboot ([Schedule System Reboot](#))

### System Info

Hostname:	f51.suse.de
IP Address:	10.160.66.51
IPv6 Address:	::1
Kernel:	3.12.69-60.64.35-default
SUSE Manager System ID:	1000010006
Activation Key:	1-suma_3_proxy
Installed Products:	<div>SUSE Linux Enterprise Server 12 SP2</div> <div>SUSE Manager Proxy 3.1 x86_64 (BETA)</div>
Lock Status:	🔒 System is <b>unlocked</b> ( <a href="#">Lock system</a> )

### Subscribed Channels ([Alter Channel Subscriptions](#))

- [SLES12-SP2-Pool for x86\\_64](#)
- [SLE-Manager-Tools12-Pool x86\\_64 SP2](#)
- [SLE-Manager-Tools12-Updates x86\\_64 SP2](#)
- [SLES12-SP2-Updates for x86\\_64](#)
- [SUSE-Manager-Proxy-3.1-Pool for x86\\_64](#)
- [SUSE-Manager-Proxy-3.1-Updates for x86\\_64](#)

Finally consider scheduling a reboot.

## SUSE Manager on IBM z Systems

### Introduction

This best practice guide is intended for z/VM administrators responsible for operating the IBM z Systems Mainframe. The goal of this guide is to lead an z/VM administrator trained on normal z Systems operating protocols through the installation of SUSE Manager onto an existing mainframe system. The intent of this article is not to cover the variety of hardware configuration profiles available on z Systems

but instead to provide a foundational overview of the procedure and requirements necessary for a successful SUSE Manager server deployment.

### Base System Requirements

The z/VM administrator should acquire and prepare the following resources for a successful SUSE Manager installation. SUSE Manager 4.0 is delivered as an extension. These sections will provide you with the minimum and recommended system requirements for SUSE Manager. The base system for SUSE Manager 4.0 is SLES 12SP3.

Hardware	Recommended Hardware
IBM Systems	* IBM zEnterprise System z196 (z196) * IBM zEnterprise System z114 (z114) * IBM zEnterprise EC12 (zEC12) * IBM zEnterprise EC12 (zEC12) * IBM zEnterprise BC12 (zBC12) * IBM z13 (z13) * LinuxOne Rockhopper * LinuxOne Emperor
RAM	<p><i>Split memory requirements 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 re-evaluated based on the number of clients which will be supported.</i></p> <p>Minimum 5 GB+ for test server (3 GB RAM + 2 GB VDISK Swap)</p> <p>Minimum 16 GB+ for base installation</p> <p>Minimum 32 GB+ for a production server</p>
Free Disk Space	<p>Minimum 100 GB for root partition</p> <p>Minimum 50 GB for <code>/var/lib/pgsql</code></p> <p>Minimum 50 GB per SUSE product + 100 GB per Red Hat product <code>/var/spacwalk</code></p>
Network Connection	<p>* OSA Express Ethernet (including Fast and Gigabit Ethernet) * HiperSockets or Guest LAN * 10 GBE, VSWITCH * RoCE (RDMA over Converged Ethernet)</p> <p>The following interfaces are still included but no longer supported:</p> <p>* CTC (or virtual CTC) * IP network interface for IUCV</p>

### Media Requirements

- SUSE Linux Enterprise 12SP3 Installation Media for IBM z Systems :

<https://www.suse.com/products/server/download/>

## Additional Requirements

There are a few additional resource requirements you will need to prepare before installing the SUSE Manager extension on your system. This section overviews these requirements.

The guest z/VM should be provided with a static IP address and hostname as these cannot be easily changed after initial setup. The hostname should contain less than 8 characters.

For more information on SUSE Manager additional requirements, see [https://www.suse.com/documentation/suse-manager-3/book\\_suma\\_best\\_practices/data/mgr\\_conceptual\\_overview.html](https://www.suse.com/documentation/suse-manager-3/book_suma_best_practices/data/mgr_conceptual_overview.html).

You will need to ensure you have sufficient disk storage for SUSE Manager before running `yast2 susemanagersetup`.

This section explains these requirements in more detail.



### *SUSE Manager Default Volume Groups and Disk Space*

By default the file system of SUSE Manager, including the embedded database and patch directories, reside within the root volume. While adjustments are possible once installation is complete, it is the administrator's responsibility to specify and monitor these adjustments.

If your SUSE Manager runs out of disk space, this can have a severe impact on its database and file structure. Preparing storage requirements in accordance with this section will aid in preventing these harmful effects. SUSE technical services will not be able to provide support for systems suffering from low disk space conditions as this can have an effect on an entire system and therefore becomes unresolvable. A full recovery is only possible with a previous backup or a new SUSE Manager installation.

### *Required Storage Devices*

An additional disk is required for database storage. This should be an **zFCP** or **DASD** device as these are preferred for use with **HYPERPAV**. The disk should fulfill the following requirements:

- At least 50 GB for `/var/lib/pgsql`
- At least 50 GB for each SUSE product in `/var/spacwalk`
- At least 100 GB for each Red Hat product in `/var/spacwalk`

### *Reclaiming Disk Space*

If you need to reclaim more disk space, try these suggestions:

- Remove custom channels (you cannot remove official SUSE channels)
- Use the `spacewalk-data-fsck --help` command to compare the spacewalk database to the filesystem and remove entries if either is missing.

## SLES 12SP3 Installation and the SUSE Manager Extension

This section covers the installation of SUSE Manager 4.0 as an extension to SLES 12SP3 .

For more information on deploying SLES 12SP3 on your hardware, see [https://www.suse.com/documentation/sles-12/book\\_sle\\_deployment/data/cha\\_zseries.html](https://www.suse.com/documentation/sles-12/book_sle_deployment/data/cha_zseries.html).

During installation of SLES 12SP3 select SUSE Manager as an extension.

After rebooting you will need to set up the additional storage required for `/var/spacwalk` and `/var/lib/pgsql` and swap space using the yast partitioner tool. This step is *required* before running `yast2 susemanagersetup`.

After configuring the storage requirements, having executed a YaST online update and completed a full system reboot, run SUSE Manager setup to finalize the SUSE Manager installation on your z Systems mainframe:

```
{prompt.root}yast2 susemanagersetup
```

This completes the installation of SUSE Manager on your z Systems . For more information on beginning management with SUSE Manager , see [Setup SUSE Manager with YaST](#).

## Setting Up

### SUSE Manager Setup

#### Topics

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

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

### SUSE Manager Setup

### Third Party Software

SUSE Manager is an extension of SUSE Linux Enterprise Server and compatible with the software shipped with SUSE Linux Enterprise Server.



SUSE Manager 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 SUSE Manager setup procedures.

### Procedure: SUSE Manager Setup

1. Login to the SUSE Manager server desktop and perform one of the following actions to begin setup:
  - Select **Applications > System Tools > YaST > SUSE Manager Setup**.
  - Open a terminal as root and type `yast2 susemanager_setup` to begin 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. Note that SUSE Manager 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 SUSE Manager Proxy Server.

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



Certificate Setup

Organization  
SUSE

Organization Unit  
Galaxy

City  
NUE

State  
BY

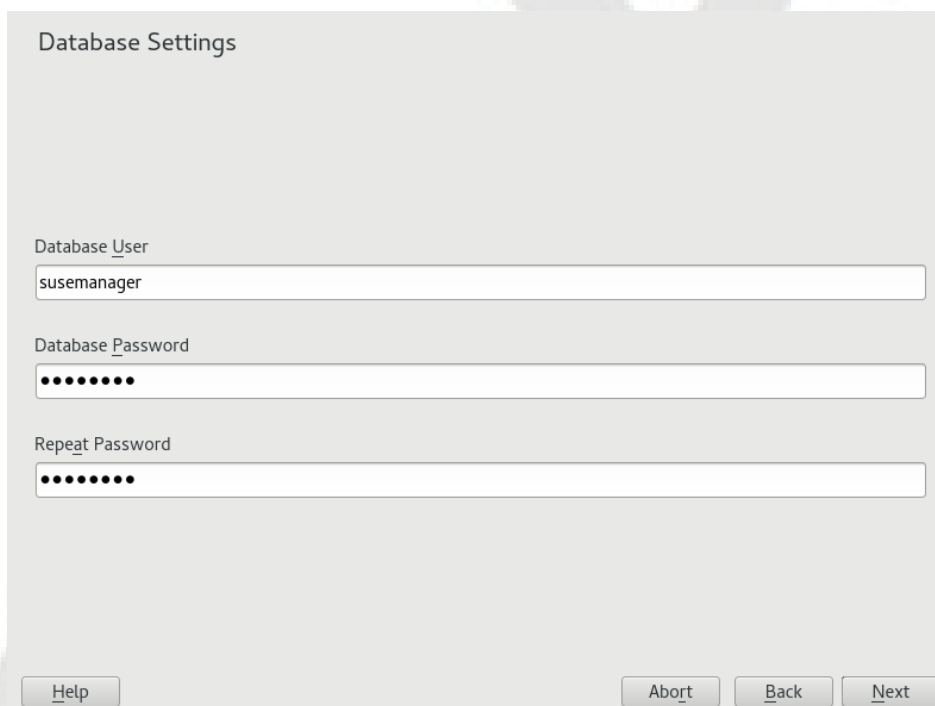
Country  
DE

SSL Password  
••••••••

Repeat Password  
••••••••

Buttons: Help, Abort, Back, Next

6. 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.



Database Settings

Database User  
susemanager

Database Password  
••••••••

Repeat Password  
••••••••

Buttons: Help, Abort, Back, Next

7. Click [ **Next** ] to continue.
8. Click [ **Yes** ] to run setup when prompted.
9. Once setup has completed, click [ **Next** ] to continue. You will see the address of the SUSE Manager Web UI.



10. Click [ **Finish** ] to complete SUSE Manager 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 SUSE Manager.




### *Admin and User Accounts*

The main administration account is the *highest authority account* within SUSE Manager 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: Setup the Main Administration Account*

1. In the browser, enter the address provided after completing setup and open the SUSE Manager 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. Select **Create Organization** to finish creating your administration account.

 **Create Organization**

Organization Details

**Organization Name\***:

Tip: Between 3 and 128 characters

Create SUSE Manager Administrator

Create the first SUSE Manager Administrator account. This account will have access to all resources on this SUSE Manager. This account will also be able to create new users and delegate permissions to them.

**Desired Login\***:

Tip: Between 5 and 64 characters

**Desired Password \***:

**Confirm Password \***:

**Password Strength**:

**Email\***:

**First Name\***:

**Last Name\***:

\* - Required Field

**Create Organization**

You should now be presented with the SUSE Manager Front Page. In the next section you will prepare the server for connecting the first client.

## Syncing 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.

### *Procedure: Synchronizing with SUSE Customer Center*

1. From the SUSE Manager Web UI start page select **Admin** > **Setup Wizard**.
2. From the **Main Menu** > **Admin** > **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:

xref:FILENAME.adoc#vle.webui.admin.wizard.products[]

+

**Setup Wizard**

HTTP Proxy   Organization Credentials   SUSE Products

Filter by product Description   Filter by architecture   25 items per page

Items 1 - 25 of 94

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

Page 1 of 4   First   Prev   Next   Last

Refresh the product catalog from SUSE Customer Center

☐ Channels  
☐ Channel Families  
☐ Products  
☐ Product Channels  
☐ Subscriptions

Refresh

Why aren't all SUSE products displayed in the list?

The products displayed on this list are directly linked to your Organization credentials (Mirror credentials) as well as your SUSE subscriptions.

If you believe there are products missing, make sure you have added the correct Organization credentials in the previous wizard step.

← Prev   3 of 3

+

1. Since 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 SUSE Manager 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 SUSE Manager will schedule the channel to be copied. This can take a long time as SUSE Manager will copy channel software sources from the SUSE repositories located at SUSE Customer Center to local `/var/pacewalk/` 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 *Transparent 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:

```
pass:c[xref:FILENAME.adoc#preparing.and.registering.clients[]]
```

## SUSE Manager Proxy Setup

SUSE Manager Proxy requires additional configuration in order to make it useful.

### Install the `suma_proxy` pattern

On the server select the `pattern_suma_proxy` package for installation, or make sure the `suma_proxy` pattern is installed using the following command on the proxy as root:

```
zypper in -t pattern suma_proxy
```

The new salt-broker service will be automatically started at the end of the package installation. This service forwards the Salt interactions to the SUSE Manager server.



### 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 proxy's TCP ports **4505** and **4506** are open and that the proxy can reach the SUSE Manager server (or another upstream proxy) on these ports.

### Copy Server Certificate and Key

The proxy will share some SSL information with the SUSE Manager server, so the next step is to copy the certificate and its key from the SUSE Manager server or the upstream proxy.

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

```
mkdir /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 SUSE Manager 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:

### SUSE Manager Parent

A SUSE Manager parent can be either another proxy server or a SUSE Manager server.

### HTTP Proxy

A HTTP proxy enables your SUSE Manager 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, or 3.2) 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 SUSE Manager 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 SUSE Manager 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 SUSE Manager server.

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

Use this option if you want to reuse a SSH key that was used for SSH-Push Salt minions 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 SUSE Manager 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 SUSE Manager 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 SUSE Manager server and the SUSE Manager Proxy server.

1. On the SUSE Manager 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 SUSE Manager server and of the proxy itself. Additionally, it asks for the tftpboot directory on the proxy.

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

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

5. To initiate an initial synchronization on the SUSE Manager 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 [xref:FILENAME.adoc#advanced.topics.cobbler\[\]](#).

## Configuring DHCP for PXE via SUSE Manager Proxy

SUSE Manager 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 which 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 SUSE Manager. 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-register 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 SUSE Manager 4.0 Proxy, see [xref:FILENAME.adoc#at.manager.proxy.inst-and-clients\[\]](#).
4. In the SUSE Manager 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 [xref:FILENAME.adoc#s5-sm-system-details-react\[\]](#).
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 SUSE Manager 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 SUSE Manager 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.