SUSE Manager 4.2

Upgrade Guide

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Upgrade Guide Overview

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SUSE Manager has three main components, all of which need regular updates. This guide covers updating the SUSE Manager Server, Proxy, and clients, as well as some underlying components, such as the database.

It is possible to automate some of the upgrades, but others need to be performed manually.

> This guide is not intended to be read cover to cover. Instead, navigate to the component you want to upgrade, then identify the versions you are upgrading from and to.

SUSE Manager uses an **X.Y.Z** versioning schema. To determine which upgrade procedure you need, look at which part of the version number is changing.

Major Version Upgrade (X Upgrade)

Upgrading to the next major version. For example, upgrading from 3.2 to 4.1. This type of upgrade does not apply to 4.2.

Minor Version Upgrade (Y Upgrade)

Upgrading to the next minor version. This is often referred to as a product migration, service pack migration, or SP migration. For example, upgrading from 4.1 to 4.2.

Patch Level Upgrade (Z Upgrade)

Upgrading within the same minor version. This is often referred to as a maintenance update. For example, upgrading from 4.1.2 to 4.1.8 or from 4.2.0 to 4.2.1.

If you are upgrading the SUSE Manager Server, see **Upgrade › Server-intro**.

If you are upgrading the SUSE Manager Proxy, see **Upgrade › Proxy-intro**.

If you are upgrading clients, see **Upgrade › Client-intro**.

In addition to upgrading the server, you need to upgrade other underlying technologies, including the database. For more information about upgrading the database, see **Upgrade › Db-intro**.

Chapter 1. Upgrade the Server

SUSE Manager uses an **X.Y.Z** versioning schema. To determine which upgrade procedure you need, look at which part of the version number is changing.

Major Version Upgrade (X Upgrade)

> Upgrading to the next major version. For example, upgrading from 3.2 to 4.0 or to 4.1.

See **Upgrade › Server-x**.

Minor Version Upgrade (Y Upgrade)

> Upgrading to the next minor version. This is often referred to as a service pack (SP) migration. For example, upgrading from 4.1 to 4.2 or from 4.0 to 4.2.

See **Upgrade › Server-y**.

Patch Level Upgrade (Z Upgrade)

> Upgrading within the same minor version. This is often referred to as a maintenance update. For example, upgrading from 4.2.0 to 4.2.1.

See **Upgrade › Server-z**.

1.1. Server - Major Version Upgrade (X Upgrade)

This type of upgrade does not apply for 4.2. For older documentation and instructions on major version upgrade, see:

https://documentation.suse.com/external-tree/en-us/suma/4.1/suse-manager/upgrade/server-x.html

1.2. Server - Minor Version Upgrade (Y Upgrade)

You can upgrade SUSE Manager to the next minor version using either the YaST online migration tool or the Zypper command line tool. This is often referred to as a product migration, service pack migration, or SP migration. This procedure does not replace the server with an updated copy. It is an in-place upgrade.

Example: **4.1.x** → **4.2.0** or **4.0.x** → `**4.2.0**

The upgrade from version 4.0 to 4.2 will also upgrade the base OS from SLES 15 SP1 to SLES 15 SP3, and the PostgreSQL database from version 10 to 13 with an additional step. For more information about the database upgrade, see **Upgrade › Db-migration-13**.

> Upgrades should be run from a text console, rather than a graphical interface like GNOME. If you are logged into a GNOME session running on the machine you are going to migrate, you will need to switch to a text console. This does not apply if you are logged in from a remote machine (unless you are running a VNC session with GNOME).

1.2.1. Server - Minor Version Upgrade with YaST

To perform the upgrade with YaST, use the Online Migration tool.

> If YaST does not have the Online Migration tool available, install the **yast2-migration** package and all the required packages. After installing, restart YaST to ensure the tool is available within YaST.

> Before upgrading from SUSE Manager 4.0 to 4.2, ensure you do not have any unpublished patches. Check for unpublished patches by navigating to **Patches › Manage Patches › Unpublished**. You must publish or delete them before you upgrade.
>
> For more information, see https://www.suse.com/releasenotes/x86_64/ SUSE-MANAGER/4.1/index.html#_dropped_features.

Procedure: Upgrading with YaST

1. From the command prompt, as root, ensure the spacewalk services are not running:

   ```
   spacewalk-service stop
   ```

2. Launch the YaST online migration tool:

   ```
   yast2 migration
   ```

   If there are older updates available, YaST will notify you and ask to install them first. You must install all package updates before performing the migration. For more information, see **Upgrade › Server-z**.

YaST will show the possible migration targets with detailed summaries.

3. Select the appropriate target, and follow the prompts to complete the migration.

4. Reboot the server.

5. When rebooted the SUSE Manager spacewalk services are not running until you have migrated the PostgreSQL database to version 13.

6. Log in on the text console as root. If you are upgrading from 4.1 to 4.2, run the database migration script:

```
/usr/lib/susemanager/bin/pg-migrate-12-to-13.sh
```

7. If you are upgrading from 4.0 to 4.2, run the database migration script:

```
/usr/lib/susemanager/bin/pg-migrate-10-to-13.sh
```

8. Ensure the spacewalk services are running:

```
spacewalk-service start
```

> ℹ️ **spacewalk-schema-upgrade** is not needed anymore. It will be run during **spacewalk-service start** automatically.

During the upgrade, YaST will install all recommended packages. This can significantly increase the installation size of the system. To only install required packages, open the **/etc/zypp/zypp.conf** configuration file and set these variables:

```
solver.onlyRequires = true
installRecommends = false
```

This changes the behavior of all future package operations.

1.2.2. Server – Minor Version Upgrade with Zypper

To perform the upgrade with Zypper, use the Zypper migration tool.

> ℹ️ Before upgrading from SUSE Manager 4.0 to 4.2, ensure you do not have any unpublished patches. Check for unpublished patches by navigating to **Patches › Manage Patches › Unpublished**. You must publish or delete them before you

upgrade.

For more information, see https://www.suse.com/releasenotes/x86_64/ SUSE-MANAGER/4.1/index.html#_dropped_features.

Procedure: Upgrading with Zypper

1. From the command prompt, as root, ensure the spacewalk services are not running:

```
spacewalk-service stop
```

2. Launch the Zypper migration tool:

```
zypper migration
```

Zypper will show the possible migration targets with detailed summaries.

3. Select the appropriate target, and follow the prompts to complete the migration.

4. Reboot the server.

5. When rebooted the SUSE Manager spacewalk services are not running until you have migrated the PostgreSQL database to version 13.

6. Log in on the text console as root. If you are upgrading from 4.1 to 4.2, run the database migration script:

```
/usr/lib/susemanager/bin/pg-migrate-12-to-13.sh
```

7. If you are upgrading from 4.0 to 4.2, run the database migration script:

```
/usr/lib/susemanager/bin/pg-migrate-10-to-13.sh
```

8. Ensure the spacewalk services are running:

```
spacewalk-service start
```

> ℹ **spacewalk-schema-upgrade** is not needed anymore. It will be run during **spacewalk-service start** automatically.

If the process fails, check these issues first:

- If Zypper does not have the migration tool available, install the **zypper-migration-plugin** package.

- If there are older updates available, Zypper will notify you and ask to install them first. You must install all updates before performing the upgrade.

1.3. Server - Patch Level Upgrade (Z Upgrade)

This update procedure covers simple package updates or a concerted micro update, which is also known as a maintenance update (MU). During a MU the user stops services, updates packages, runs the script to update the database, and restarts services.

Example: **4.2.0 → 4.2.1**.

This means first you ensure that you have the latest version of all installed packages installed. Then you can upgrade the database schema.

Procedure: Updating Packages on the SUSE Manager Server

By default, several update channels are configured and enabled for the SUSE Manager Server. New and updated packages will become available automatically.

1. On the SUSE Manager Server, at the command prompt, as root, stop the spacewalk services:

   ```
   spacewalk-service stop
   ```

2. Refresh software repositories:

   ```
   zypper ref
   ```

3. List available patches:

   ```
   zypper list-patches
   ```

4. Apply all available patches:

   ```
   zypper patch
   ```

   This command only applies patches. To apply all outstanding updates, use **zypper up** instead.

5. Restart the spacewalk services:

```
spacewalk-service start
```

> **ℹ** By default, zypper refreshes the repository every ten minutes (see **repo.refresh.delay** in **/etc/zypp/zypp.conf**). If **autorefresh** is disabled, run **zypper ref** to refresh all repositories.

> **ℹ** Command **spacewalk-schema-upgrade** is not needed anymore. It will run automatically during **spacewalk-service start**.

> **❗** Services affected by a package update are not automatically restarted after an update. You need to restart these services manually to avoid potential failures. Use **zypper ps** to check for applications that are using old code and require restarting.

Reboot the server if a patch update recommends rebooting.

Chapter 2. Upgrade the Proxy

SUSE Manager Proxies are managed in the same way as clients. Maintenance updates (MU) can be installed on the SUSE Manager Proxy in the same way as other clients. MU updates require a restart of the proxy service.

Before you perform any proxy update, schedule a maintenance window. The clients registered to SUSE Manager through the proxy will not be able to connect to SUSE Manager while the update is in progress. For more information about maintenance windows, see **Administration › Maintenance-windows**.

SUSE Manager uses an **X.Y.Z** versioning schema. To determine which upgrade procedure you need, look at which part of the version number is changing.

Major Version Upgrade (X Upgrade)

Upgrading to the next major version. For example, upgrading from 3.2 to 4.0 or to 4.1. This type of upgrade does not apply to 4.2. See **Upgrade › Proxy-x**.

Minor Version Upgrade (Y Upgrade)

Upgrading to the next minor version. This is often referred to as a service pack (SP) migration. For example, upgrading from 4.1 to 4.2 or from 4.0 to 4.2. See **Upgrade › Proxy-y-z**.

Patch Level Upgrade (Z Upgrade)

Upgrading within the same minor version. This is often referred to as a maintenance update. For example, upgrading from 4.2.0 to 4.2.1. See **Upgrade › Proxy-y-z**.

2.1. Proxy - Major Version Upgrade (X Upgrade)

In some cases SUSE Manager Proxy can be upgraded from one major version to the next. For example, Proxy can be upgraded from 3.2 to 4.1, but not from 3.2 to 4.2.

To upgrade from 3.2 to 4.2, you must first upgrade from 3.2 to 4.1, then upgrade from 4.1 to 4.2. For more information on upgrading from 3.2 to 4.1, see:

https://documentation.suse.com/external-tree/en-us/suma/4.1/suse-manager/upgrade/proxy-intro.html

For more information on upgrading from 4.1 to 4.2, see **Upgrade › Proxy-y-z**

2.2. Proxy - Minor Version or Patch Level Upgrade (Y or Z Upgrade)

Before you perform any proxy update, schedule a maintenance window. The clients registered to SUSE Manager through the proxy will not be able to connect to SUSE Manager while the update is in progress. For more information about maintenance windows, see **Administration › Maintenance-windows.**

> **!** When upgrading SUSE Manager Proxy 4.0, ignore the option to upgrade it to version 4.1 as target product. Always select to upgrade SUSE Manager Proxy 4.0 to SUSE Manager Proxy 4.2 only.
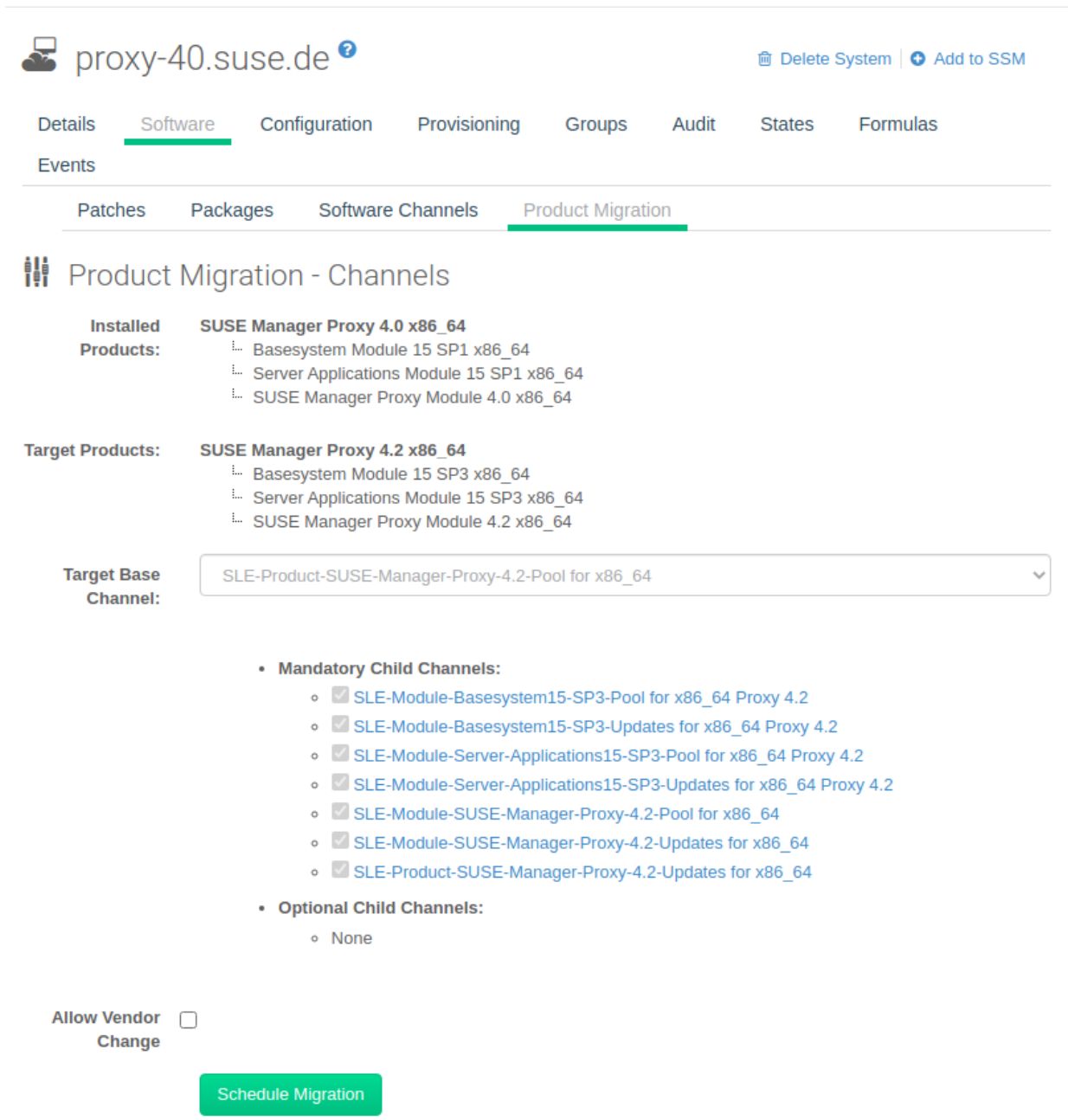
2.2.1. Update the Proxy (Y)

To update a proxy use the **Product Migration:**

Figure 1. Proxy Product Migration (Target)

📥 proxy-40.suse.de ❓   🗑 Delete System | ⊕ Add to SSM

Details   Software   Configuration   Provisioning   Groups   Audit   States   Formulas

Events

Patches   Packages   Software Channels   Product Migration

ᚼ Product Migration - Channels

Installed Products: **SUSE Manager Proxy 4.0 x86_64**
                          ┆⋯ Basesystem Module 15 SP1 x86_64
                          ┆⋯ Server Applications Module 15 SP1 x86_64
                          ┆⋯ SUSE Manager Proxy Module 4.0 x86_64

Target Products: **SUSE Manager Proxy 4.2 x86_64**
                          ┆⋯ Basesystem Module 15 SP3 x86_64
                          ┆⋯ Server Applications Module 15 SP3 x86_64
                          ┆⋯ SUSE Manager Proxy Module 4.2 x86_64

Target Base Channel: [SLE-Product-SUSE-Manager-Proxy-4.2-Pool for x86_64   ⌄]

- **Mandatory Child Channels:**
  - ☑ SLE-Module-Basesystem15-SP3-Pool for x86_64 Proxy 4.2
  - ☑ SLE-Module-Basesystem15-SP3-Updates for x86_64 Proxy 4.2
  - ☑ SLE-Module-Server-Applications15-SP3-Pool for x86_64 Proxy 4.2
  - ☑ SLE-Module-Server-Applications15-SP3-Updates for x86_64 Proxy 4.2
  - ☑ SLE-Module-SUSE-Manager-Proxy-4.2-Pool for x86_64
  - ☑ SLE-Module-SUSE-Manager-Proxy-4.2-Updates for x86_64
  - ☑ SLE-Product-SUSE-Manager-Proxy-4.2-Updates for x86_64
- **Optional Child Channels:**
  - None

Allow Vendor Change   ☐

[Schedule Migration]

Figure 2. Proxy Product Migration (Channels)

2.2.2. Update the Proxy (Z)

To update a proxy you first stop the proxy service, then update the software and finally restart the proxy service.

Procedure: Updating the SUSE Manager Proxy

1. On the SUSE Manager Proxy, stop the proxy service:

```
spacewalk-proxy stop
```

2. In the SUSE Manager Server Web UI, navigate to **Systems › Proxy** and click the name of the proxy.

3. Select packages to be updated on the proxy, and then apply the selection.

4. On the SUSE Manager Proxy, start the proxy service:

```
spacewalk-proxy start
```

If you need to update many proxies, you can create an action chain of this command sequence on the SUSE Manager Server. You can use the action chain to perform updates on multiple proxies at the same time.

Chapter 3. Upgrade the Clients

Clients use the versioning system of their underlying operating system. For clients using SUSE operating systems, you can perform upgrades within the SUSE Manager Web UI.

For more information about upgrading clients, see **Client-configuration › Client-upgrades**.

Chapter 4. Upgrade the Database

To successfully perform a major SUSE Manager update, you might need to upgrade the underlying database.

To upgrade to the latest PostgreSQL, see **Upgrade › Db-migration-xy**.

This table shows the PostgreSQL version required for each version of SUSE Manager and SUSE Linux Enterprise Server:

Table 1. PostgreSQL Versions

SUSE Manager version	Operating System version	PostgreSQL version
SUSE Manager 3.1.4	SLES 12 SP3	PostgreSQL 9.6
SUSE Manager 3.1.11	SLES 12 SP3	PostgreSQL 9.6
SUSE Manager 3.2.10	SLES 12 SP3	PostgreSQL 9.6
SUSE Manager 3.2.10	SLES 12 SP3	PostgreSQL 10
SUSE Manager 3.2.10	SLES 12 SP4	PostgreSQL 10
SUSE Manager 4.0.0	SLES 15 SP1	PostgreSQL 10
SUSE Manager 4.1.0	SLES 15 SP2	PostgreSQL 12
SUSE Manager 4.2.0	SLES 15 SP3	PostgreSQL 13

> If you are using an older database version, such as version 9.4 or 9.6, you must migrate PostgreSQL to version 10 before you begin the SUSE Manager migration. To upgrade from PostgreSQL 9 to version 10, see:
>
> https://documentation.suse.com/external-tree/en-us/suma/4.1/suse-manager/upgrade/db-migration-10.html

4.1. Database Migration to the Latest Version

This section covers upgrading the PostgreSQL database to the latest version. If you are already using PostgreSQL 13, you do not need to perform this migration. If you are using an older version, such as version 9.6, see https://documentation.suse.com/external-tree/en-us/suma/4.1/

suse-manager/upgrade/db-migration-10.html.

If you want to upgrade to the latest SUSE Manager version, you must be using PostgreSQL version 12 or 13, depending on the underlying operating system:

- If you are running SLES 15 SP3, use PostgreSQL 13.

- If you are running Leap 15.2, use PostgreSQL 12.

4.1.1. Prepare to Upgrade

Before you begin the upgrade, prepare your existing SUSE Manager Server and create a database backup.

PostgreSQL stores data at **/var/lib/pgsql/data/**.

Procedure: Preparing to Upgrade

1. Check the active PostgreSQL version:

```
psql --version
```

2. Check the active smdba version:

```
rpm -q smdba
```

PostgreSQL 13 requires **smdba** version 1.7.6 or later.

3. Perform a database backup. For more information on backing up, see **Administration › Backup-restore**.

4.1.2. Upgrade PostgreSQL

⚠️ Always create a database backup before performing a migration.

PostgreSQL upgrades can be performed in two ways: a regular upgrade, or a fast upgrade:

A regular upgrade creates a complete copy of the database, so you need double the existing database size of space available. Regular upgrades can take a considerable amount of time, depending on the size of the database and the speed of the storage system.

A fast upgrade only takes a few minutes, and uses almost no additional disk space. However, if a fast upgrade fails, you must restore the database from the backup. A fast upgrade reduces the risk of running out of disk space, but increases the risk of data lose when a backup does not exist or cannot be replayed. A regular upgrade will copy the database files instead of creating hard links between the files.

PostgreSQL stores data at **/var/lib/pgsql/data/**.

Procedure: Performing a Regular Upgrade

1. Perform a database backup. For more information on backing up, see **Administration › Backup-restore**.

2. Start the upgrade. Run the script:

```
/usr/lib/susemanager/bin/pg-migrate-x-to-y.sh
```

3. When the upgrade has successfully completed, you can safely delete the old database directory and reclaim lost disk space. The old directory is renamed to **/var/lib/pgsql/data-pg12** or **/var/lib/pgsql/data-pg10**, depending on the version you started from.

The **pg-migrate-x-to-y.sh** script performs these operations:

- Stop spacewalk services

- Shut down the running database

- Check if the latest PostgreSQL is installed and install it if necessary

- Switch from previous version of PostgreSQL to the latest as the new default

- Initiate the database migration

- Create a PostgreSQL configuration file tuned for use by SUSE Manager

- Start the database and spacewalk services

  > ℹ If the upgrade fails, the migration script will attempt to restore the database to its original state.

Procedure: Performing a Fast PostgreSQL Upgrade

1. Perform a database backup. Without a verified database backup, you must not initiate a fast upgrade. For more information on backing up, see **Administration › Backup-restore**.

2. Start the upgrade. Run the script.

```
/usr/lib/susemanager/bin/pg-migrate-x-to-y.sh -f
```

3. When the upgrade has successfully completed, you can safely delete the old database directory and reclaim lost disk space. The old directory is renamed to **/var/lib/pgsql/data-pg12** or **/var/lib/pgsql/data-pg10**, depending on the version you started from.

Chapter 5. Troubleshooting

This section contains some common problems you might encounter with SUSE Manager upgrades, and solutions to resolving them.

To get more information about an upgrade problem, check the migration log file. The log file is located at **/var/log/rhn/migration.log** on the system you are upgrading.

5.1. Not Enough Disk Space

Check the available disk space before you begin migration. We recommend locating **/var/spacewalk** and **/var/lib/pgsql** on separate XFS file systems.

When you are setting up a separate file system, edit **/etc/fstab** and remove the **/var/lib/pqsql** subvolume. Reboot the server to pick up the changes.

5.2. Retrying to Set up the Target System

If you need to retry setting up the target system, follow these steps:

1. Delete **/root/.MANAGER_SETUP_COMPLETE**.

2. Stop PostgreSQL and remove **/var/lib/pgsql/data**.

3. Set the target system hostname to match the source system hostname.

4. Check the **/etc/hosts** file, and correct it if necessary.

5. Check **/etc/setup_env.sh** on the target system, and ensure the database name is set:

   ```
   MANAGER_DB_NAME='susemanager'
   ```

6. Reboot the target system.

7. Run **mgr-setup** again.

5.3. Schema Upgrade Fails

If the schema upgrade fails, the database version check and all the other spacewalk services do not start. Run **spacewalk-service start** for more information and hints how to proceed.

You can also run the version check directly:

```
systemctl status uyuni-check-database.service
```

or

```
journalctl -u uyuni-check-database.service
```

These commands print debug information if you do not want to run the more general **spacewalk-service** command.

5.4. The Web UI Fails to Load

Sometimes, the Web UI will not load after migration. This is usually caused by browser caching, if the new system has the same hostname and IP address as the old system. This duplication can confuse some browsers.

This issue is resolved by clearing the cache and reloading the page. In most browsers, you can do this quickly by pressing `Ctrl` + `F5`.

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