



U Y U N I

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Common Workflows

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Common workflows overview

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The Uyuni Common Workflows Guide covers most commonly used workflows you need to install, manage, and configure your clients with Uyuni.

Each workflow in this book has a clear goal, and provides detailed steps to achieve that goal.

It is designed to help you better understand both routine and advanced tasks, by explaining what you are achieving in each step, and the various options available to you along the way.

Each routine will be described as Workflow.

Chapter 1. Client Onboarding

Uyuni is all about managing client systems. So one of the first things you need to do is onboard some clients. This workflow shows you how to set up your Uyuni Server to manage a new client, set up the software channels you need, and bootstrap the client using an activation key.

1.1. Use Case

This workflow shows you how to onboard a client to your Uyuni Server.

The client must be running a supported Linux operating system. For a list of supported client systems, see [Installation-and-upgrade > Client-requirements](#).

This is one of the first tasks you need to do when you set up Uyuni for the first time, and you will probably have to do it many more times as you use the product.

1.2. Outcome

When you have completed this workflow, your client is onboarded, and it can be seen in the systems list of the Uyuni Web UI. You can then use Uyuni to manage the client.

1.3. Preparation

Before you start, you should already have:

- Uyuni Server installed, that you can access using the Web UI.
- Client machine with an operating system installed, which you can access across the network that your Uyuni Server is on, using SSH.
- Appropriate subscriptions from <http://scc.suse.com> for the products you are using.

This workflow uses a SUSE Linux Enterprise Server 15 SP2 operating system. You can use other Linux operating systems, but some of the steps might be different. For more information on onboarding other clients, see [Client-configuration > Registration-methods](#).

1.4. Step-by-step Workflow Instructions

Procedure: Configure a Fully Qualified Domain Name (FQDN) on Your Client

1. On the client, at the command prompt, show the current hostname:

```
hostname -f
```

This command will probably return an error, or show something like `localhost`.

2. Set a new hostname. Your new hostname should have a subdomain name and thus include at least two periods. In this example, we are using `client1.suma.example`

```
hostnamectl set-hostname client1.suma.example
```

3. Check that your change was successful:

```
hostnamectl
```

Open YaST and navigate to **Network Services > Hostnames**. Edit the hostname to match the one you just set, and click **[OK]**. In YaST, navigate to **System > Network Settings** and go to the Hostname/DNS tab. In the Static hostname field, type your new hostname.

4. Check that the change was successful:

```
hostname -f
```

This command should return your new FQDN.

Procedure: Prepare Software Channels on the Uyuni Server

1. In the Uyuni Web UI, navigate to **Admin > Setup Wizard**.
2. In the Organization Credentials tab, ensure you have entered your SUSE Customer Center credentials, and are correctly authenticated.
3. In the Products tab, ensure that the product catalog is fully updated:
4. Use the product search bar to find the channels you need for your client operating system. Check the channels you want to install, and click **[Add products]**:
5. Wait for the product channels to fully synchronize. Depending on the products you have chosen, this could take a long time.

Procedure: Create an Activation Key

1. In the Uyuni Web UI, navigate to **Systems > Activation Keys**, and click **[Create Key]**. Give your activation key a name, and select the base channel that matches the client you want to onboard. This should be the product you just enabled:
2. Check the child channels to include, and any add-on system types you want clients registered with this key to have. Click **[Create Activation Key]**.

Procedure: Bootstrap the Client

1. In the Uyuni Web UI, navigate to **Systems > Bootstrapping**.
2. Type the hostname and provide authentication credentials for the client you want to onboard, and select the activation key. Click **[Bootstrap]**:
3. Navigate to **Systems > System List** to manage your new client.

1.5. Related Topics

- For more information about supported clients and client features, see [**Client-configuration > Supported-features**](#).
- For more information about different onboarding methods, and instructions for clients running various operating systems, see [**Client-configuration > Registration-methods**](#).
- For more information about general client concepts, see [**Client-configuration > Channels**](#).

Chapter 2. Clients Update Using Recurring Actions

This workflow shows how to automate updating the clients registered at Uyuni using recurring actions.

2.1. Use Case / Situation

Automated update of clients is beneficial when:

- update of a large number of clients is wanted
- the workflow should not be re-done every execution
- a dedicated maintenance window exists.

2.2. Outcome / Resolution

Successful completion of this workflow results in consistent and supportable state.

2.3. Preparation

Before you start, you should have a number of clients onboarded. It may make sense to have them sorted into groups you want to update together. In this workflow we use a system group named `infra-services`.

2.4. Step-by-Step Workflow Instructions

To update a client two steps are required. A third step is optional but highly recommended to finalize the update process.

Procedure 1: Creating a Recurring Action to Update Salt Itself

1. As an example, we create the action to update Salt itself as a recurring action for all systems in the organization. In the Uyuni Web UI, navigate to **Home > My Organization > Recurring Actions** and click **[Create]**.
2. Select Action Type **Custom State** and enter a Schedule Name like `update-salt`.
3. Select a schedule. For example, **Weekly: Wednesday, 9:00 am**.
4. Assign the `update-salt` state by selecting the checkbox.
5. Click **[Save Changes]** to save the action.
6. You can edit the execution order of the states if needed. Click **[Confirm]** to confirm the order.
7. Click **[Create Schedule]** to save the action.

Procedure 2: Creating a Recurring Action to Apply All Available Updates to the Systems

1. As an example we create the action to apply all updates as a recurring action for a system group called **infra-services**. In the Uyuni Web UI go to **Systems > System Groups** and click on `infra-services`.

2. Now go to Recurring Actions and click **[Create]**.
3. Select Action Type **Custom State** and enter a Schedule Name like `full-system-update`.
4. Select a Schedule. For example, **Weekly: Wednesday, 9:30 am**. Keep enough time between this action and the `update-salt` action. The `update-salt` actions must be finished on all systems before this action should be executed.
5. Assign the states `util.syncall`, `certs`, `channels` and `uptodate` by selecting the checkboxes.
6. Save the action by clicking **[Save Changes]**.
7. You can edit the execution order of the states. The order should be `util.syncall`, `certs`, `channels`, and finally `uptodate`. Click **[Confirm]** to store the order.
8. Click **[Create Schedule]** to save the action.



The `uptodate` state also performs a reboot, if an update requests it. This reboot be prevented if needed. For example, the systems which use live patching need to prevent the rebooting following the update.

Procedure 3: Configuring Systems to Not Reboot After the `uptodate` State is Applied

1. In the Uyuni Web UI go to **Systems > Custom System Info** and click **[Create Key]**.
2. Enter `mgr_reboot_if_needed` as Key Label and set a Description.
3. Click **[Create Key]** to store the new key.
4. To assign values to multiple systems, navigate in the Uyuni Web UI to **Systems > Overview** and select the checkbox for all systems you want to modify. These system are not in the System Set Manager (SSM).
5. Select in the left menu System Set Manager and select **Misc > Custom Values** in the tab bar.
6. Click on the `mgr_reboot_if_needed` key label and enter **False** as value.
7. Click **[Set Values]** to save.

Procedure 4: Creating a Recurring Action to Run a Highstate After the Update

1. As an example, we create the action to apply the highstate for the same group which was fully updated before. In the Uyuni Web UI, navigate to **Systems > System Groups** and click `infra-services`.
2. Go to Recurring Actions and click **[Create]**.
3. Select Action Type **Highstate** and enter a Schedule Name like `highstate`.
4. Select a Schedule. For example, **Weekly: Wednesday, 10:30 am**. Again, keep enough time between this action and the `full-system-update` action.
5. Click **[Create Schedule]** to save the action.

2.5. Related Topics

- For more information about recurring actions, see [Recurring Actions](#).

-
- For more information about custom info values, see [Client-configuration > Custom-info](#).

Chapter 3. Configuration Management

You can use configuration files and channels to manage configuration for your clients, rather than configuring each client manually. This workflow shows you how to use the Uyuni Web UI to create a centrally managed configuration file, assign it to a client, and apply the configuration.

3.1. Use Case

If you are managing a lot of clients, you probably do not want to manually apply configuration settings to each of them in turn. Configuration channels are used to organize configuration files. You can subscribe clients to configuration channels, and deploy configuration files as required.

3.2. Outcome

When you have completed this workflow, you will have a configuration channel containing a configuration file, have assigned clients to the channel, and applied the configuration successfully.

3.3. Preparation

Before you start, you should already have:

- Uyuni Server installed, that you can access using the Web UI.
- At least one client registered to your server.
- Appropriate subscriptions from <http://scc.suse.com> for the products you are using.

This workflow uses a centrally managed configuration file and a Salt state. You can also use locally managed configuration files and different methods, to get more flexibility in how you manage configuration in your environment. For more information about the different ways to manage configuration, see **Client-configuration > Configuration-management**.

3.4. Step-by-step Workflow instructions

Procedure: Create a New Configuration Channel and file

1. In the Uyuni Web UI, navigate to **Configuration > Channels** and click **[Create State Channel]**. Type a name, label, and description for your configuration file, and type the contents of your configuration file. An example that you can copy is at the end of this section. Click **[Create Config State Channel]**
2. Procedure: Assign Clients to the Configuration Channel
3. In the Uyuni Web UI, navigate to **Systems > Systems List** and select the client you want to assign to your configuration channel.
4. Navigate to the Configuration tab. In the guimenu:Configuration Overview section, click **[Subscribe to channels]**.
5. Check the configuration channel you created earlier, and click **[Continue]**.
6. If you have more than one configuration channel, you can rank them in order of importance, or click **[Update Channel Rankings]** to finish.

Procedure: Apply the Configuration to Your Client

1. In the Uyuni Web UI, navigate to **Systems** > **Systems List** and select the client you want to assign to your configuration channel.
2. Navigate to the Configuration tab. In the guimenu:Configuration Actions section, click **[Deploy all managed config files]**.

3.5. Example

3.5.1. SLS State for Keeping Clients Updated

```

include:
  - channels

int_keep_system_up2date_updatestack:
  pkg.latest:
    - pkgs:
      - salt
      - salt-minion
  {% if grains.os_family == 'Suse' %}
    - zypper
    - libzypp
  {% elif grains['os_family'] == 'RedHat' %}
  {% if grains['osmajorrelease'] >= 8 %}
    - dnf
  {% else %}
    - yum
  {% endif %}
  {% endif %}
  - require:
    - sls: channels
  - order: last

int_keep_system_up2date_pkgs:
  pkg.uptodate:
    - require:
      - sls: channels
      - pkg: int_keep_system_up2date_updatestack
    - order: last

int_reboot_if_needed:
  cmd.run:
    - name: shutdown -r +5
  {% if grains['os_family'] == 'RedHat' and grains['osmajorrelease'] >= 8 %}
    - onlyif: 'dnf -q needs-restarting -r; [ $? -eq 1 ]'
  {% elif grains['os_family'] == 'RedHat' and grains['osmajorrelease'] <= 7 %}
    - onlyif: 'needs-restarting -r; [ $? -eq 1 ]'
  {% elif grains['os_family'] == 'Debian' %}
    - onlyif:
      - test -e /var/run/reboot-required
  {% else %}
    - onlyif: 'zypper ps -s; [ $? -eq 102 ]'
  {% endif %}

```

3.6. Related Topics

- For more information about configuration management, see **Client-configuration > Configuration-management**.
- For more information about SLS files, see: https://docs.saltproject.io/en/latest/topics/tutorials/startng_states.html.

Chapter 4. Content Lifecycle Management

If you are managing a lot of clients and you need to apply customized packages to them, you can use content lifecycle management (CLM) to manage your packages. CLM allows you to customize and test packages before updating production clients. It is also useful if you need to apply updates during a limited maintenance window.

4.1. Use Case

Content lifecycle management allows you to select software channels as sources, adjust them as required for your environment, and thoroughly test them before installing onto your production clients. You can use CLM to manage your software channels from development, through testing, and rolling the changes out to your clients.

4.2. Outcome

When you have completed this workflow, you will have a content lifecycle project set up. You will have created a basic CLM project, and promoted it through its lifecycle.

4.3. Preparations

Before you start, you should already have:

- Uyuni Server installed, which you can access using the Web UI.
- Client machine with an operating system installed, which you can access across the network that your Uyuni Server is on, using SSH.
- Appropriate subscriptions from <http://scc.suse.com> for the products you are using.

4.4. Step-by-step Workflow Instructions

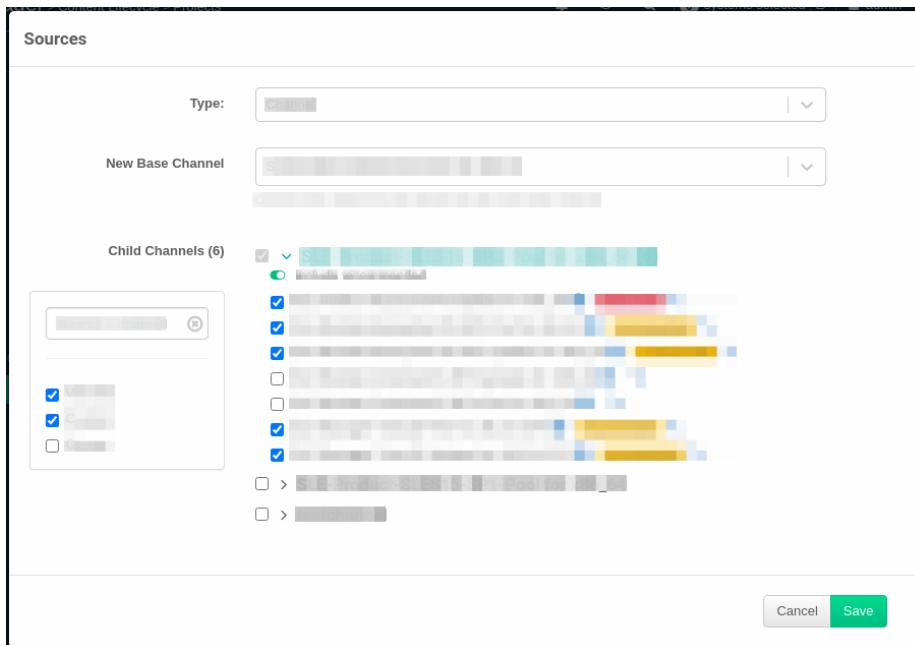
Procedure: Create a new CLM Project

1. In the Uyuni Web UI, navigate to **Content Lifecycle > Projects**, and click **[Create Project]**. Type a name, label, and description for your project, and click **[Create]**.

4.4. Step-by-step Workflow Instructions

The screenshot shows the 'Content Lifecycle Project' page. At the top, there's a 'Project Properties' section with fields for Name, Label, and Description, and a note about Versions history. Below it are 'Sources' and 'Filters' sections. A downward arrow leads to the 'Build (0)' section. Another downward arrow leads to the 'Environment Lifecycle' section, which currently says 'No environments created'. There are 'Edit Properties', 'Attach/Detach Sources', 'Attach/Detach Filters', and 'Add Environment' buttons.

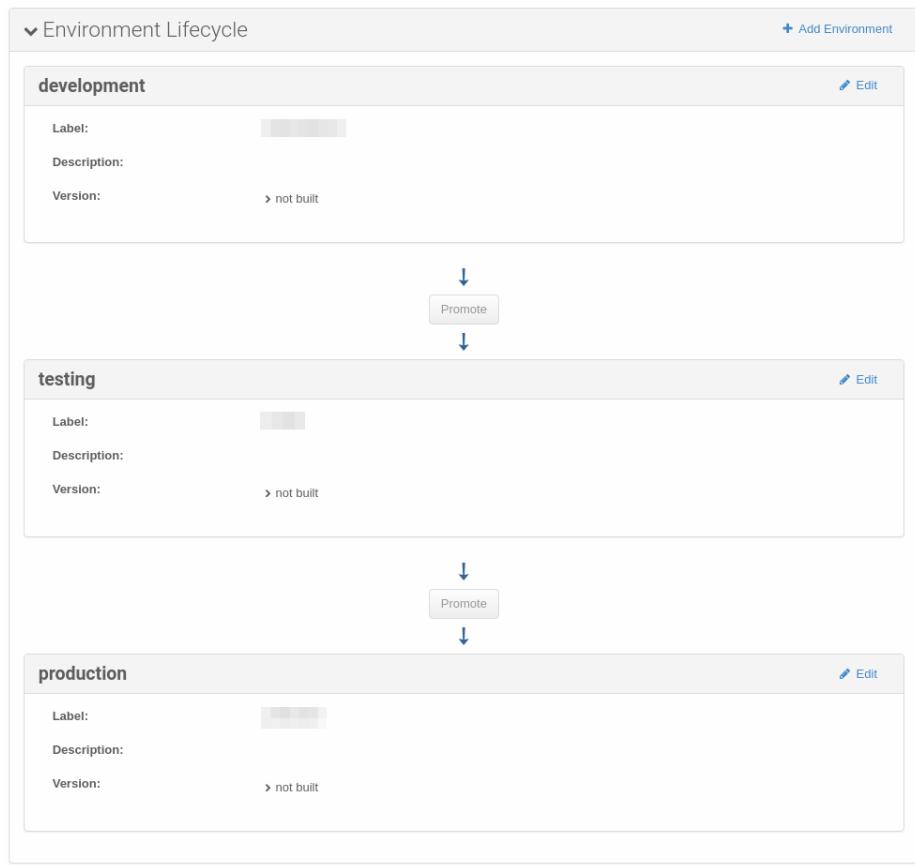
2. In the Sources section, click **[Attach/Detach Sources]**. Select the source type, and select a base channel for your project. The available child channels for the selected base channel are displayed, including information on whether the channel is mandatory or recommended. Check the child channels you require, and click **[Save]** to return to the project page.



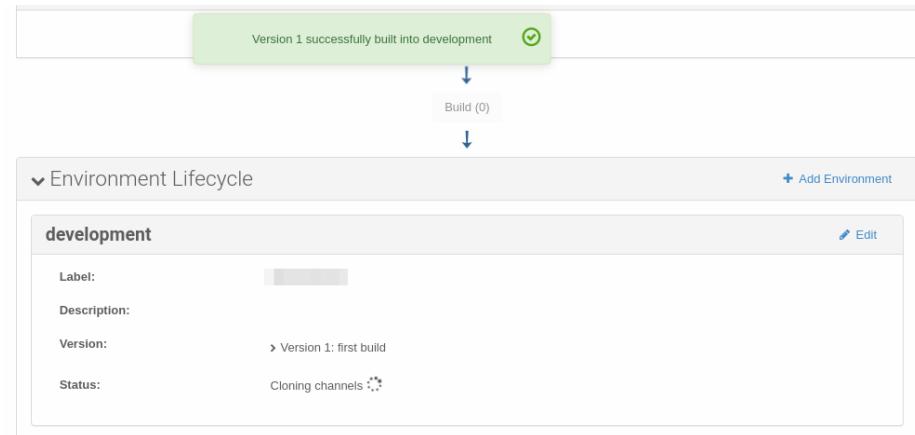
3. Leave the Filters section blank for now, we will not be using them in this example. You can add filters later on if you need to.
4. In the Environment Lifecycle section, create three environments: production, testing, and development. Click **[Add Environment]** and complete the name and label for each. For the production environment, leave the Insert before field blank. For the testing environment, in the Insert before field, select production. For the development environment, in the

4.4. Step-by-step Workflow Instructions

Insert before field, select testing``.



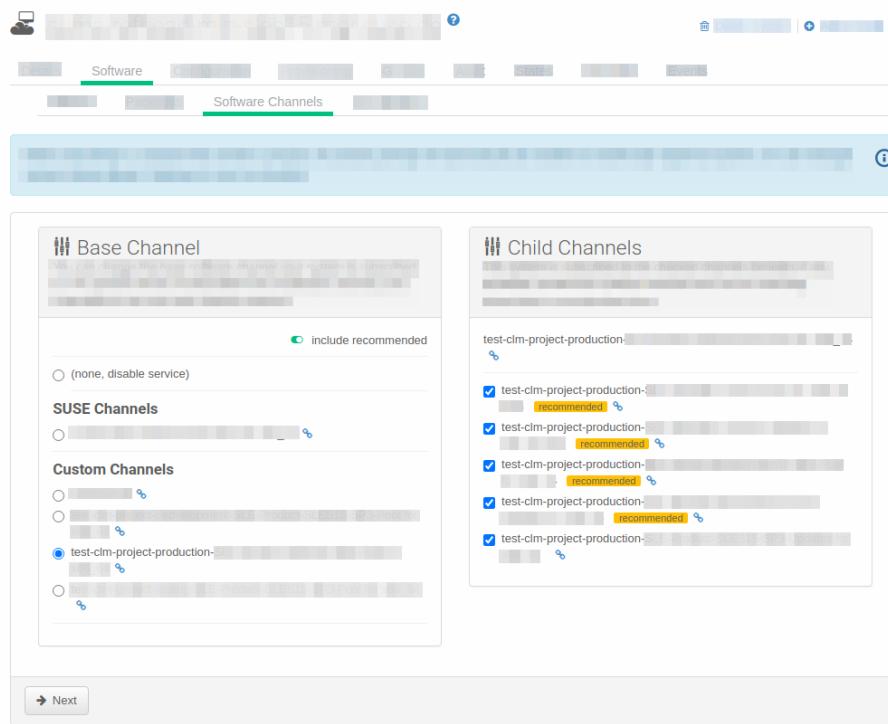
5. Click [Build] to build version 1 of your project:



Procedure: Assign Clients

1. Navigate to **Systems > System List**, select the client to assign, and go to the **Software > Software Channels** tab.
2. In the Base Channel section, select the CLM project and environment you want to assign the client to. For example, if you want this client to receive updates from your CLM only when packages are in the production environment, assign the base channel <CLM_Project_Name>-production-<Channel_Name>. Alternatively, you could use this client as a way to test if your CLM packages are working as expected before you promote them to development, so you assign

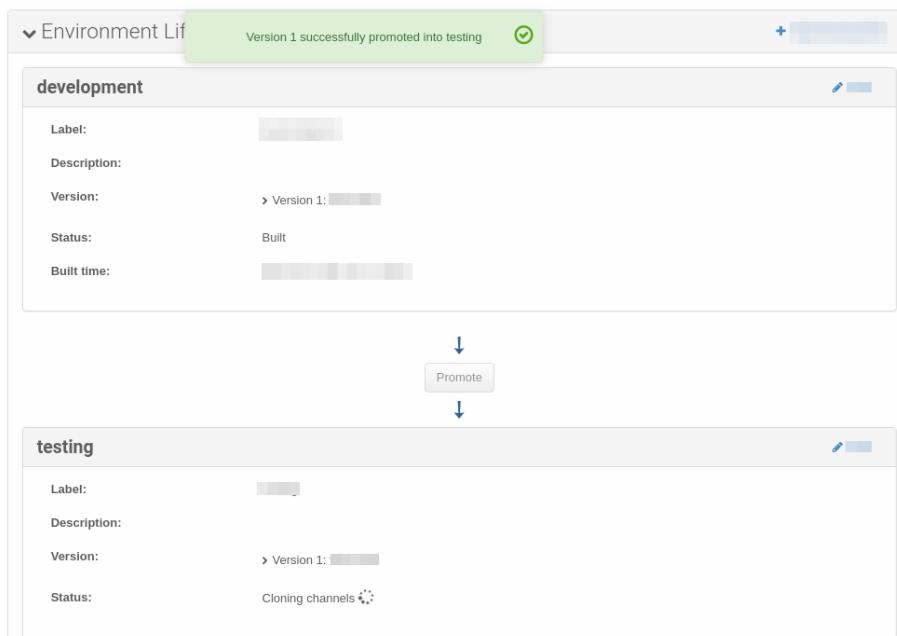
the base channel <CLM_Project_Name>-testing-<Channel_Name>.



3. Click **[Next]** to assign the client.

Procedure: Promote Environments

1. In the Uyuni Web UI, navigate to **Content Lifecycle > Projects**, and select the project you want to work with.
2. In the **Environment Lifecycle** section, locate the environment to promote to its successor, and click **[Promote]**. You can monitor build progress in the **Environment Lifecycle** section.



4.5. Related Topics

- For more information about CLM, including information about how to use filters, see [Administration > Content-lifecycle](#).
- For CLM examples, see [Administration > Content-lifecycle-examples](#).

Chapter 5. Product Upgrade via Web UI

If you want to upgrade the registered SUSE Linux Enterprise client pack to a newer product version, it can be done either on the command line or via Web UI.

This document describes and illustrates in detail the product upgrade using the Web UI.



Product versions used are not reflective of the actual latest versions available. They are used for illustration purposes only. As an example, the following procedure describes the upgrade to version 15 SP5 from and older version 15. If you are targeting a different version, select the corresponding channels and versions.

Procedure: Upgrading Product to a Newer Version Using Web UI

1. Log in to Uyuni Web UI and navigate to **Admin** > **Setup Wizard** > **Products** and search for **SUSE Linux Enterprise Server 15 SP5 x86_64**.
2. Select the recommended channels.
3. Click **[Add Products]**.
4. Navigate to **Systems** > **Registered client** > **Software** > **Product Migration**. You will see the targets available for that registered client.
5. Select **SUSE Linux Enterprise Server 15 SP5 x86_64**. This will expand further.
6. Select Target Base Channel as **SLE-Product-SLES15-SP5-Pool** for **x86_64**. Keep **Allow Vendor Change** unchecked.
7. Click **[Schedule Migration]**. The message will be highlighted. It is better to do a dry run first so continuing with dry run first.
8. Click **[Dry run]** and check the status of the simulation in **Events** > **History**. You should see a return code 0 indicating a successful dry run.
9. Click **[Schedule Migration]** to perform the actual product migration. The message will be highlighted on top of the screen indicating the scheduling of the action.
10. When the upgrade is complete, check the status in **Events** > **History**.
11. On the Uyuni Web UI side, verify the successfully completed product upgrade by going to **Systems** > **Registered client** > **Details**.
12. On the client side you can verify it by running:

```
cat /etc/os-release
```

13. The output will look similar to:

```
NAME="SLES"
VERSION="15-SP5"
VERSION_ID="15.5"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP5"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp5"
DOCUMENTATION_URL="https://documentation.suse.com/"
```

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