The provisioning process in VoipNow

Applies to VoipNow 3 and higher!

The provisioning algorithm is organized around the equipment. Depending on the permissions you have, you can add equipment and assign extensions from an administrator, service provider, organization and user account. Each device added in the system is identifiable by a unique serial number.

The VoipNow provisioning system is based on templates. There is a default template that includes the configuration settings for all the supported equipment brands, models and versions that can be used when provisioning new devices and associating them to user/extension accounts. If you want to customize a device to suit your requirements, you can easily define templates that include your configuration.

This article describes the most important features of the VoipNow provisioning system.

Account permissions

A new permission called **Allow to provision devices** was added to the Service Provider, Organization and User accounts. By default, when a new account is created, the permission to provision devices is set to **None**. Taking into consideration your own own requirements, you can change it to any of the following states:

- **Modify** - The account owner can see and assign permissions up to Modify to its child accounts.
- **View** - The account owner can see any permissions of its child accounts, but can only assign permissions up to View.
- **None** - The account owner can neither see or assign any permissions to its child accounts.

The system administrator is allowed to view and modify the permissions of all the existing accounts.

Example 1

In practice, one can encounter a situation where:

- The Service Provider has the View permission.
- The Organization has the Modify permission.

When the **Service Provider** logs in, he/she can change an organization's **Allow to provision devices** permission from Modify to, for example, View. After saving the modification, he/she will not be able to revert it to Modify as this permission will be removed from the list. The system administrator has the permission to view and modify all existing devices, no matter the account they were added from.

If an existing account has the selected permission level set to:

- **Modify**, it means that it is able to see and manage the provisioning process for all subordinate accounts, irrespective of the any account level and the type of permission of those accounts.
- **View**, it means that it is able to see the provisioning process for all subordinate accounts, irrespective of the account level. More to this, it can also add new devices to the database. However, it can only assign them to child accounts with a Modify provisioning permission. Please note that it can neither remove devices or clear assignments.
- **None**, it means that it is able to see the provisioning process for subordinate accounts with a permission level set to View. It can even add a device if an inferior user/extension has a permission set to `Modify` (but only if the device is assigned on that account). Please note that it can neither remove devices or clear assignments.

An account benefits from the permissions of all its inferior accounts as well.

Example 2

In practice, one can encounter a situation where:

- The Service Provider has the **Allow to provision devices** permission set to None.
- The Organization has the View permission.

One of the user's **Phone terminal** extensions has Modify, another one has None and the third one has View. Extension 2 and 3 have already been provisioned on devices by the system administrator. From the Service Provider account, you should be able to:

- View all provisioned devices in the **SIP Devices** page, having **Extension 2** and **Extension 3** on their lines, because the service provider has the organization's permissions to View devices.
- Configure a new device by clicking the **Add new device** icon available in the same page and assign **Extension 1** to its line because the service provider is able to use the extension's Modify permission. At this point, the **Add new device** icon will be disabled (if this is the only organization under the service provider account).
- The Service Provider can edit some fields for the last added device, but it can neither remove or clear assignments for any device from the list.

Provisioning templates

In VoipNow, you can add customized templates from the Administrator, Service Provider and the Organization accounts. You can adjust the level of visibility for each template, without modifying the global templates on the server.

As a system admin, you can define customized templates: those that are only visible from an administrator account, those that are visible from both an administrator and Service Provider account, or those that are visible from all types of accounts: administrator, Service Provider and Organization.

For example, as a system admin you can add a template visible for admin, Service Provider and Organization levels and name it "Template for Cisco devices". Then you can edit the template by customizing the configuration files to meet your requirements for all existing Cisco equipment. This template will be visible in the **Add a New Device** section if Cisco is the selected equipment for all level accounts (except for Phone terminal extension accounts - they are strictly using the default templates).

As a Service Provider, you can define templates available only at Service Provider level and all the organization under its account. The templates defined from an Organization account are only available for that particular Organization.

If an account has the **Allow to provision devices** permission set to None by the system administrator, then the account owner will not be able to see and use his/her own Provisioning Templates page. However, if an inferior account has a permission set to View or Modify, then the user of the superior account will be able to manage the Provisioning Templates page of the child account.

To add a customized template, take the following steps:

1. Go to the **Unified Communications Equipment Templates** page.
2. Click the **Add Provisioning template** icon to define the new template, choose a proper name and the level of visibility. Then edit the template customizing the equipment's configuration files. For more info, please check the VoipNow User's Guide.

Example 3

If you're a Service Provider and you want to add a customized template Linksys SPA941 that is visible on Service Provider and Organization level accounts, here are the steps that you need to take:

STEP 1: Log in to your Service Provider account.

STEP 2: Navigate to the **Unified Communications Equipment Templates** page.

STEP 3: Click the **Add provisioning template** icon.

STEP 4: Define your template using the options available. Enter a name for it (e.g. Linksys SPA941 tpl) and set its visibility to **Service Provider** and **Organ ization** levels.

STEP 5: Click **OK** to add the template. It will be listed in the **Provisioning Templates** table.

STEP 6: Click the **Edit** icon corresponding to the Linksys SPA941 tpl template.

STEP 7: Then click the **Add equipment** icon available in the **Tools** section. Start customizing the configuration file specific to your device, in this case Linksys SPA-941:

- Choose the Linksys(SPA-941) as the desired **Manufacturer/Model**.
- Select the appropriate **Firmware/Version**, in this case 4.1.10 and above.
- In the **Device Configuration File #1** section, choose **No** for the **Use default option** in order to be able to edit the file.
- Customize the configuration file according to your requirements.
- Click **OK**.

STEP 8: At this point, you should be able to use the "Linksys SPA941 tpl" as a provisioning template when adding a Linksys SPA-941 device.

If required, you can import a new configuration template for a certain device by clicking the **Import template** icon. Please note that this feature is available to the system administrator for the **Server Default** template only.

Add devices

Currently, you can add equipment from an administrator, service provider and organization account by taking the following steps:

STEP 1: Go to the **Unified Communications SIP Devices** page.

STEP 2: Click the **Add new device** icon or, from the extension's **Provisioning and SIP** page, directly assign an extension to the line 1 of the Linksys SPA-941 device.

As a system admin, if you want to add a new device, you must fill in all the requested fields from the pop-up panel.

- **Serial number** - Fill in the unique identification number for each newly added device; it will be used to create the update URL and determine the location of the provisioning files for the added equipment.
- **Provisioning template** - Select the template you want to use (default or customized).
- **Line assignments** - Assign the device to a selected user and set the available extensions under the selected user account. You can assign many lines by pressing the **+** icon.

If you are logged as a service provider or as a organization, you need to be granted the appropriate permissions to be able to add, edit or view the existing devices. The new equipment can be added following the same algorithm described for the system administrator.

A service provider can only choose users and extensions under their account. As a user, the assignment part is limited to the selection of the extensions for each available line.

An organization can view and manage the provisioned devices in its own **SIP Devices Inventory** table if its permission to provision devices was set to None and one of its provisioned extensions has a Modify permission. On the other hand, the organization is not allowed to remove the devices or to clear their assignments as this can be performed by the accounts with Modify permission only.

The organization can also add new devices and use their line(s) to provision extensions with Modify permission. This note applies to the service provider as well.

What happens when Add new device is disabled

There are many cases when the **Add new device** icon is disabled at service provider or organization level. Therefore, it is important to know the following hints:

- A service provider with View permission has only one organization with the permission set to View and all the existing extensions have already been provisioned. The **Add new device** icon for both the organization and the service provider accounts is disabled.
- A service provider or an organization with Modify permission is not going to have a disabled **Add new device** icon because they can add devices without filling in the assignment fields, which are not mandatory.

A Phone terminal extension account can use the provisioning function only if its permission is set to Modify and the extension has not been provisioned on a device by one of his parent accounts.

The equipment added from an account level can be modified by any other account with the appropriate permissions, except for the extension account, which is not able to modify all the fields of a device provisioned by one of its parent accounts. Some of the non-editable options are: **Manufacturer/Model**, **Firmware/Version**, **Application version**.

Example 4

Let us assume the following situation:

- You are **Service provider 0086** with the **Allow to provision devices** permission set to View.
- Your **Organization 0087** has the same permission set to None.
- His extensions have the following permission levels:
    - **Extension 001** has Modify.
    - **Extension 002** has View.
    - **Extension 003** has None.
- **Extension 002** was provisioned by the system administrator.

The service provider needs to open the **SIP Devices** page and check the **SIP Devices Inventory** table to see the device allocated by the system administrator to **Extension 002**. At this point, the service provider account owner can only view the device settings, without having the permission to edit them.

If you, as **service provider 0086**, want to configure a new equipment, then you have to click the **Add new device** icon and follow the next steps:

1. Fill in a **Serial number** that will uniquely identify the added device (e.g. rd5ayd43vds242fwd35u).
2. Choose a **Friendly name** for the device (e.g. Aastra 51i phone1_sqa). This is especially useful when you have the same equipment provisioned several times with different configurations. The value must be alphanumerical and must have between 3 and 32 characters in length. It is not unique.
3. Use the first drop-down list to choose the **Manufacturer** that produces the device you want to provision (e.g. Aastra). The list contains all the supported brands.
4. The next list is dynamically populated with all the available models for the selected manufacturer. Choose the desired Model (e.g. 51i).
5. Choose the corresponding Firmware/Version (e.g. 2.3.x). This is important because the configuration file is different for each one of the supported firmware versions and, therefore, the provisioning settings differ.
6. Use the **Application version** text box if you want to provide the device's specific firmware version (e.g. P0S3-08-11-00). This value will be retained in the data base and used in the configuration file generated for the selected device.
   For the majority of devices, you do not have to fill in this text box. Anyhow, there are certain cases (e.g. Cisco) when the device requires the presence of the exact application version in the configuration file in order to be provisioned.
   Check the supplied user guide for clarifications.
7. Fill in the device's MAC address. The text box is auto-populated with the first three segments according to the chosen manufacturer (e.g. 00:08:5D for Aastra). The value must have the standard format: XX:XX:XX:XX:XX:XX (e.g. 00:08:5D:1A:E9:8C)
8. If the **Allow MAC based provisioning on HTTP(S) - [ ] (less secure)** option is enabled from the **Unified Communications Equipment templates Global preferences** section and the **Update protocol** is either `HTTP` or `HTTPS`, then if you select the **Use MAC based provisioning** check box, the provisioning link will be generated based on the device's MAC address.
9. If you just want to define and assign the device, without provisioning it, then you can use the **Status** drop-down list to select **Disable**. The provisioning file will not be generated. On the other hand, if you want to finalize the provisioning process, select **Enable**.
10. If you have some additional information, enter in the **Notes** field.
11. Use the **Administrator username** text box if you want to define the username for logging in to the device's browser based configuration interface (e.g. admin).
    Not all the devices support configuration via a web browser. Check the documentation for additional information.
12. Choose the **Administrator password**:
    - None - No password will be required to connect to the device's browser based configuration interface.
    - Automatically generated - VoipNow Professional will randomly generate a password for you.
    - Manually set - If you like, you can manually set and confirm the **Password** using the two additional fields displayed.
13. Optionally, you can set the number of minutes the device waits before checking for updates on the provisioning server. To do so, fill in the **Phone update interval** text box. The accepted values range from 1 to 99,999 minutes/seconds, depending on the device's settings. The default value is 10 minutes.
14. Select an **Update protocol** from the ones available for the device (e.g. `HTTP`). Note that while it is more secure, the `HTTPS` method requires the installation of a CA signed certificate on the web server.
15. Select a **Template** (e.g. a customized template Aastra 51i Custom, previously defined by you, the service provider).
16. Select the **client** from the list. In our example, only **Client 0087** will be available.
17. Select an **extension** for the device's first line. In our example, the only one available will be **Extension 001** which has Modify permission.
18. Click **Ok** and the device will be added to **SIP Devices Inventory**.

As a service provider, you can edit some fields of the Aastra 51i phone1_sqa device, but you cannot remove the device or clear the assignments. Only the system administrator can remove both provisioned devices.

Related articles

- How to configure the time for a Phone Terminal through provisiong
- Understanding and blocking ghost calls
- How to monitor VoipNow with Homer
- How to use Homer capture agents with VoipNow
- How SIP forking works in VoipNow