IPv4 plans

IP plans are at the heart of each IP network. The first step after creating a Client type is the modeling of the IP plans.



Within the current version of netYCE both IPv4 and IPv6 are supported.

IP plans

IP plans are essentially supernets with a reference number and a subnet mask. The supernet will be divided into one or more subnets (segments). A client can have one or more supernets associated.

Client types



An IP plan can be used with multiple clients. Changing an IP plan should be done with extreme caution. The client types section of the form will show the client types associated with the selected IP-plan.

Subnets



With the subnets section of the form, the IP plans can be segmented.

Using the New button  sign the IP plan subnet add form is opened and one or more ip subnets can be added.

By default, the subnets will be added with a 24 bits subnet. This can be changed by typing the prefix, or using the arrows.

Each subnet must have a name. A good practice is to make a reference to the function of the subnet, such as management, voice, data, ppp etc. When needed a remark can be added.

With **Minimum offset** you can select the starting point of your (first) subnet.

With **Maximum offset** you select the end-point of your (last) subnet.

The offset fields are intentionally not editable, this makes sure that no crazy offsets can be chosen. To overcome lots of clicking when a big free space exists in the plan, create as big as possible Free ranges so that the first free offset is near the requested one. After creating the latter subnets you can remove the segments of the Free subnets.

Subnet plan

In the Subnet plan tab, the subnet can be modeled. Here the Default-gateway, VLAN ID etc can be defined. By clicking  the IP subnetplan add form will be opened.



IP address offset

When adding an IP address parameter, netYCE will use an offset from the subnet address. When the subnet address is `192.168.0.0` with a netmask of `255.255.255.0` and the offset is `0.0.0.2` the resulting address will be `192.168.0.2`. When the offset is `0.0.0.-1` the resulting address will be the highest available address `192.168.0.254`.

Loopback

Loopback will add two parameters. The first is the offset of `0.0.0.0` which means 0 bits offset from the subnet IP and number two is a topology position of **L**. This topology position will be assigned to the port.

Gateway

Gateway will add one parameter. An IP offset of `0.0.0.1`

Point-to-point

Point-to-point will add 8 parameters. two parameters will have an IP offset of `0.0.0.1` and two will have an IP offset of `0.0.0.2`. Also topology positions A (left), B (right), N (north) and S (south) will be added.

Four-corners

Vlan

VLAN will add two parameters. The scope of the VLAN whether it should be Site specific, Client specific or Service specific. The other parameter is the VLAN template. Here a VLAN configuration template can be used.

When adding a VLAN, the user must make a choice whether to have a range or a fixed VLAN ID.

Range

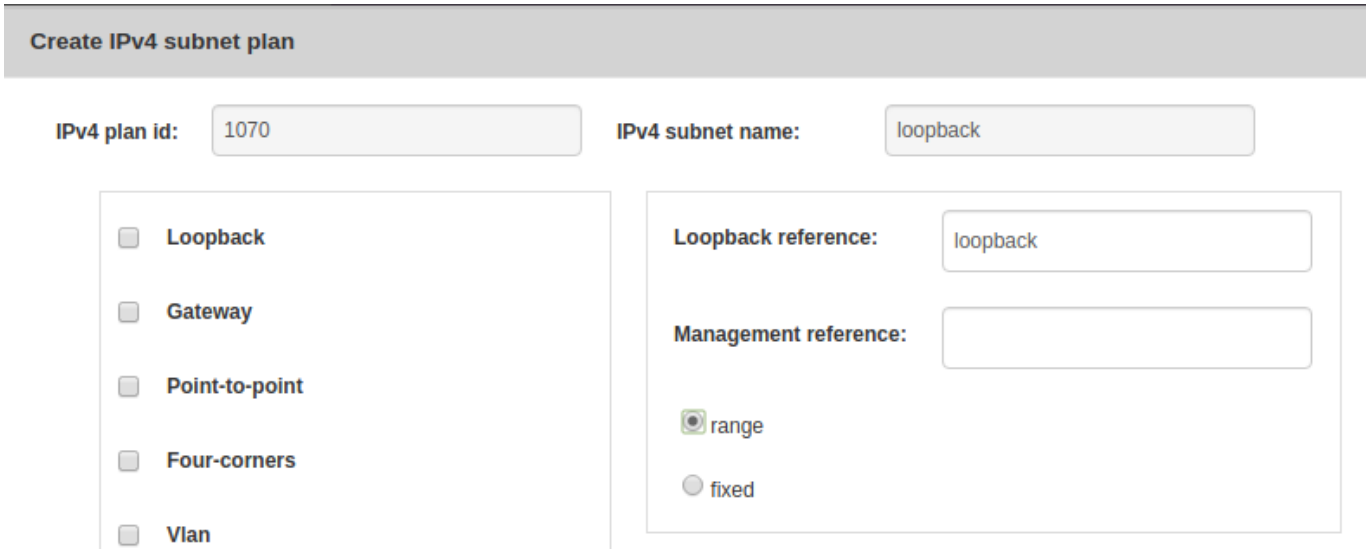
When choosing *Range*, two parameters will be added. The minimum- and maximum offset of the VLAN ID. The maximum offset must be higher than the minimum. The range is between 1 and 4094.

Fixed

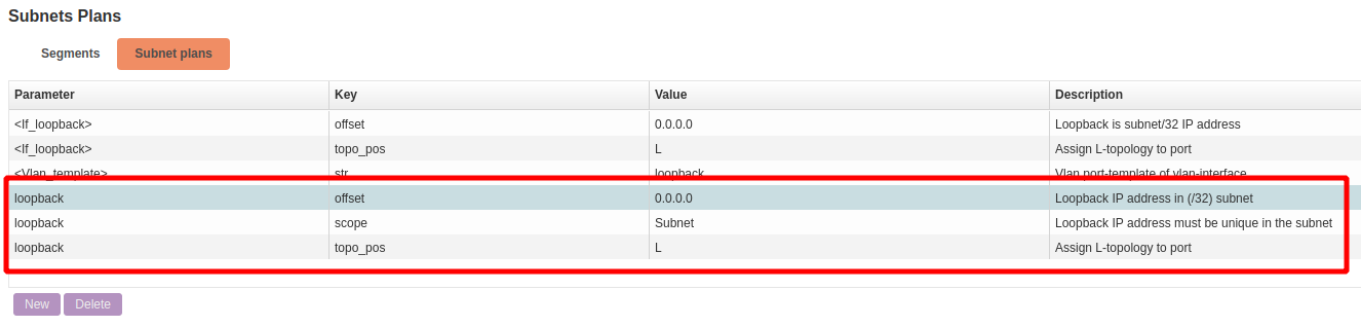
When choosing *Fixed*, one parameter will be added. This is the VLAN ID.

Loopback reference

It is possible to make a named reference to the loopback address. This is useful when using Service tasks. This allows you to specify IP ranges within the subnet to be assigned, giving the opportunity to skip certain addresses.



Which will look like this:



When using this in the Service type, the reference 'loopback' can be used for IP address assignments. A partial service type is shown that does a locate on the subnet and address.

Management reference

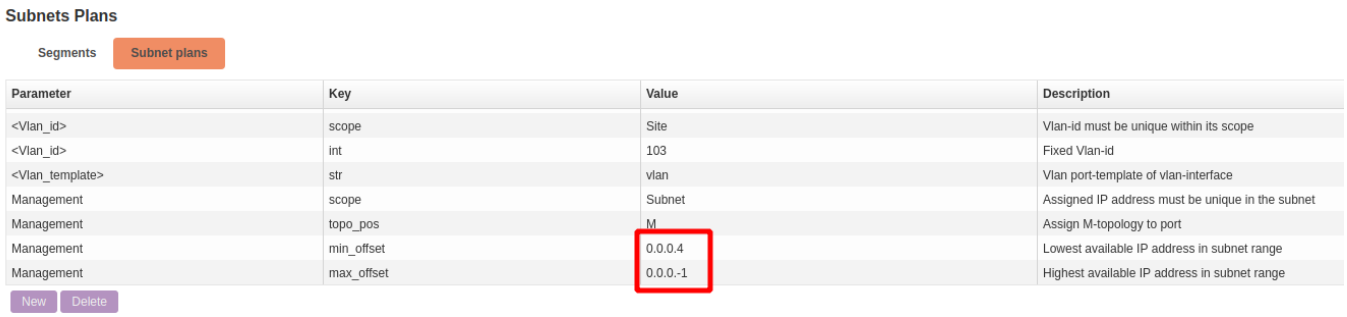
In order to force a specific IP address (or range of addresses) it is possible to use a named reference.

This reference can be used in the same way as the loopback reference.

Range

The *Range* will add the *Scope* parameter, the *Topology* parameter and a minimum- maximum offset parameter. The Topology parameter can't be modified. The Scope can be Site (default) and Global.

In the picture below, it is seen that the subnet range has been specified to start at 0.0.0.4 till 0.0.0.-1 (which means the last address minus 1).



The service type shows a partial set of commands to use the reference.



The output of this partial service type is shown below. Where you see the last address is used according to the service type usage.



Fixed

The *Fixed* will add the *Scope* parameter, the *Topology* parameter and a fixed offset parameter. The Topology and Site parameter are the same as the Range setting.

Segments

When selecting a subnet in the *Subnets* section, all the subnets will be listed in the *Segments* section. Individual segments can be deleted. It is possible to delete multiple segments in one action, by selecting multiple entries.

Using the *Reindex* button it is possible re-index the segments for a continuous numbering starting at 0.

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