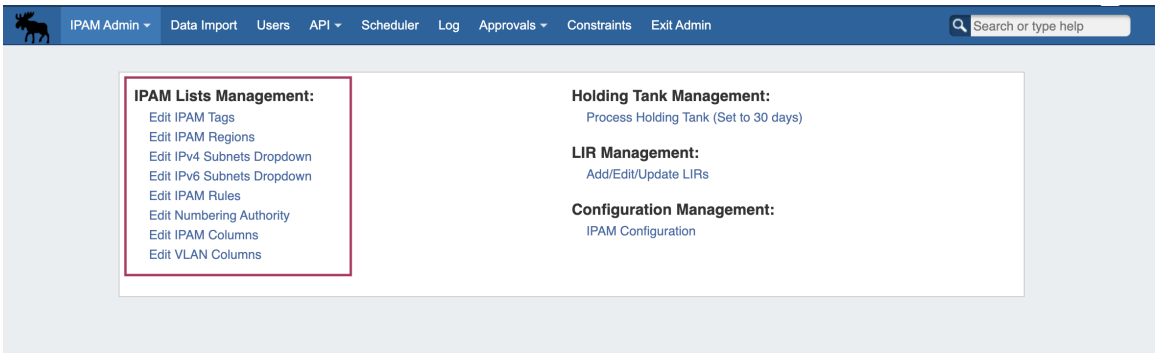
IPAM Parameters

IPAM Parameters - Overview

IPAM Lists Management is access from the Admin section of ProVision, under the **IPAM Admin** tab.

Through this area, admin users can update IPAM tags, IPAM Regions, IPv4 / IPv6 subnets, IPAM Rules, Numbering Authority, and IPAM / VLAN Columns.



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  - Add / Edit Regions
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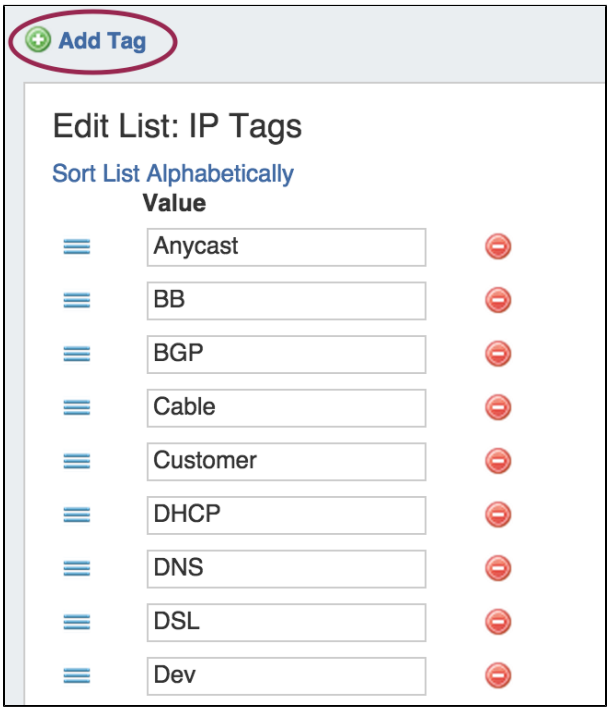
Add / Edit IPAM Tags

When you are applying properties to IP blocks, you have the option to edit tags. IPAM Tags are used in a number of areas in ProVision and can be added or edited from this screen.

To add a new IPAM tag, click on "Add Tag" at the top of the Edit IPAM Tags page.



Then, type in the desired name value for the new tag, and hit "Add Tag".

To **edit** a tag, simply type your changes in to the text box with the tag name. Tags with unsaved changes will be highlighted until saved.

To **reorder** the tag list, click and hold on the "list" icon (three lines) to the left of the tag name, then drag to the desired location in the list and release.

To **delete** a tag, click on the red "delete" symbol to the right of the tag name.

When complete, be sure to click on the "Save" button to save your changes.

Add / Edit Regions

Google Geocode API Key Requirement

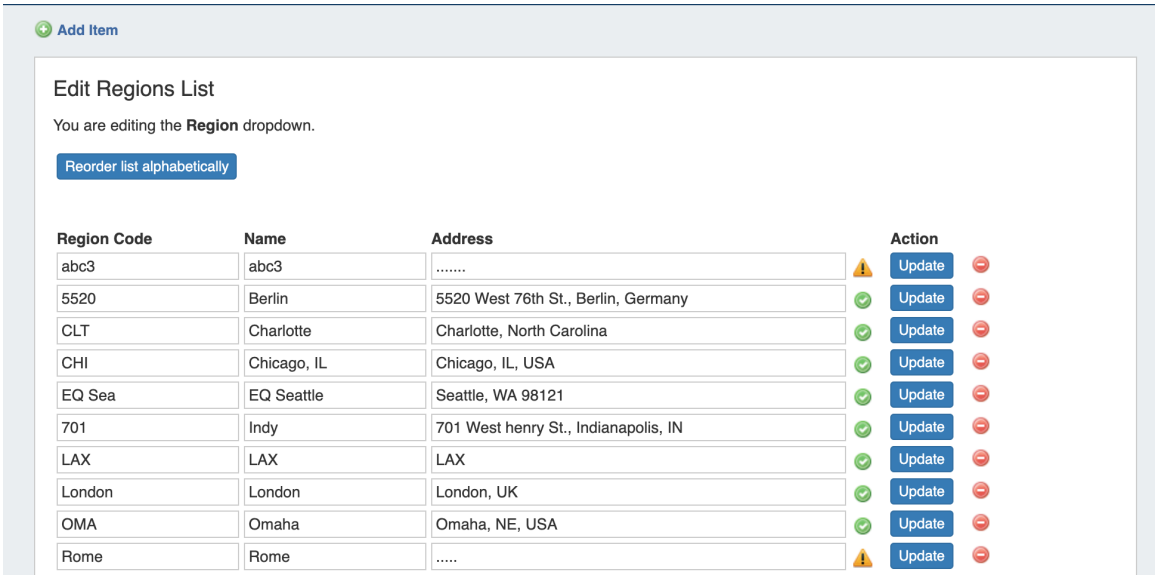
Due to changes in Google's licensing and Geocoding API, the previous geolocation method used in ProVision is no longer supported. IPAM Regions now requires a Google Geocode API Key in order for IPAM Maps to properly determine a Region's location.

6connect is exploring adding additional map integration options for ProVision.

Any customers who require an alternative geocode option supported apart from Google Geocode API key, please contact us at feedback@6connect.com.

If enabled, Regions can function as a way to further define your network segments (regional tie-downs, etc.). This gives you flexibility for allocations and assignments beyond simply using Tags. Regions are used by the IPAM Gadget, the IPAM Manage UI, and IPAM Map View.

Access IPAM regions from **IPAM Admin** **Edit IPAM Regions**.



The Regions display includes fields for Region Code, Name, and Address.

- 'Region Code' is the shorthand name that will show in the IPAM Gadget and IPAM Manage screens.
- 'Name' is the long form name value that will be written to the database, used for API calls, and is also used for some filter selectors.
- The 'Address' field is used by IPAM map view (via Google Geocode API) to geolocate aggregates with that assigned region. Address may be in the form of a City / State / Country, a full street address, a company name, or other search term that Google API can return a location for. The more accurate your address information, the more accurate map view will be with your aggregate locations. An "address" value that appears invalid to Google Geocode API will display a yellow ⚠ warning symbol.

To use regions, you will need to apply a Google Geocode API Key.

Applying a Google Geocoding API Key:

Step 1: Obtain a Google Geocoding API Key

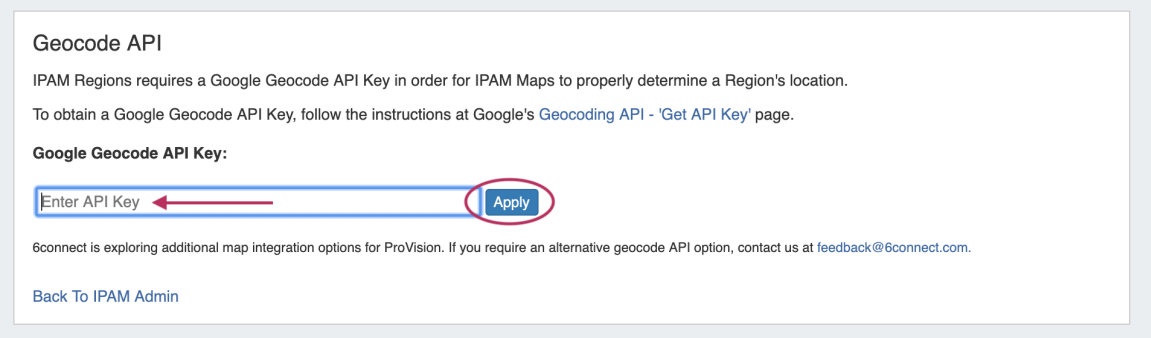
To get a Google Geocoding API Key, follow the instructions listed here:

How to get a Google Geocoding API Key

Note: In order to obtain a Google Geocoding API Key, a company must have a subscription enabled to Google Cloud Platform Console.

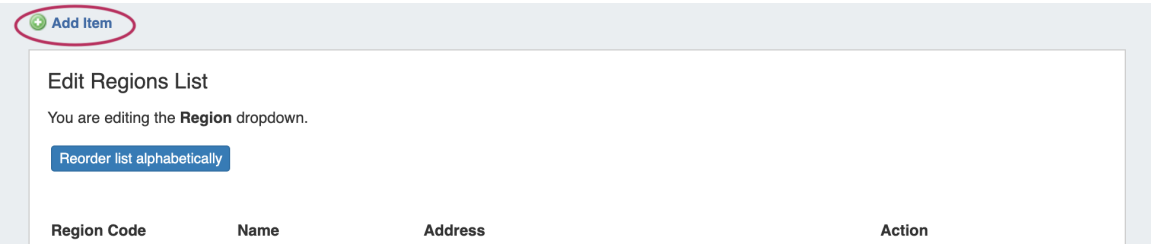
Step 2: Assign the API Key to IPAM Regions

Once assigned a Google Geocoding API Key, paste the API key into the IPAM regions page under "Apply google geocode api key" and click the "Apply" button.

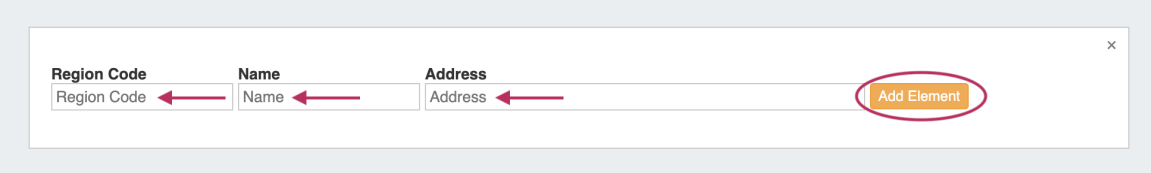


Managing Regions

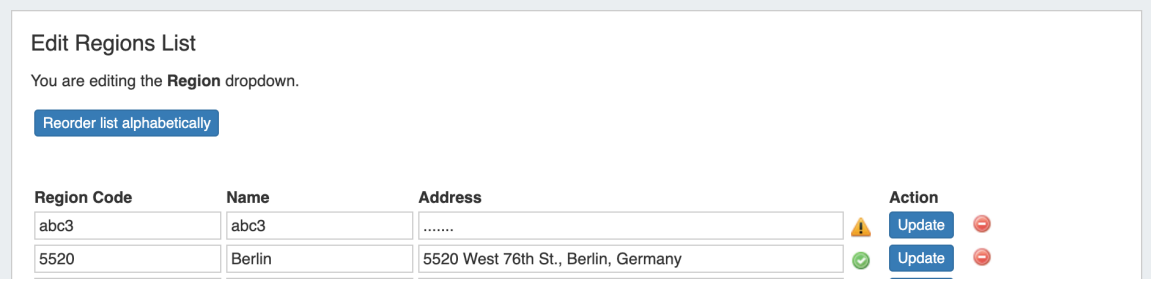
To **add** a new Region item, click the "Add Item" link at the top of the screen.



In the form that appears, type in a new Region Code, Name, and Address into the empty fields and click "Add Element".



The new Region will be added to the Region list.



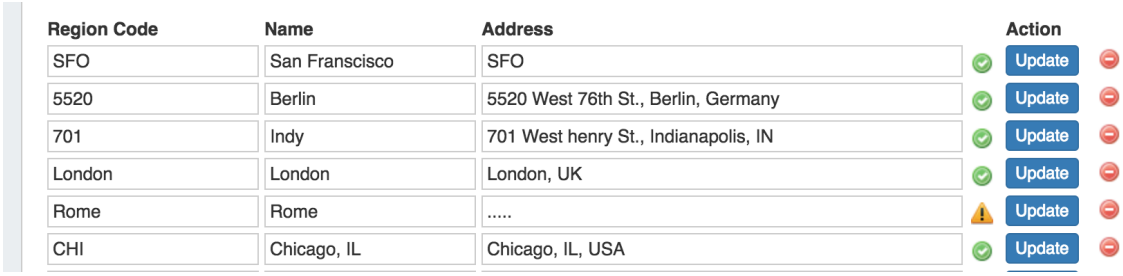
To **edit** a region, simply type your changes in to the text box with the region name. Then, click on the "Update" Button.

To **delete** a region, click on the red "delete" symbol to the right of the region name.

To **reorder** the regions list, click on the "Reorder list alphabetically" button.

Valid / Invalid Regions

Valid addresses (according to Google's API) will show a green check mark next to the address field, invalid addresses (unable to be mapped) will show a yellow exclamation mark.



Region Code	Name	Address	Action
SFO	San Franscisco	SFO	Update
5520	Berlin	5520 West 76th St., Berlin, Germany	Update
701	Indy	701 West henry St., Indianapolis, IN	Update
London	London	London, UK	Update
Rome	Rome	.....	Update
CHI	Chicago, IL	Chicago, IL, USA	Update

If you are getting unexpected results from the Regions validity checker, copy the address input into to ProVision into Google Search, and check out the top result(s) - sometimes, Google's API may be finding different results than you expected. For best results, be as specific as possible in

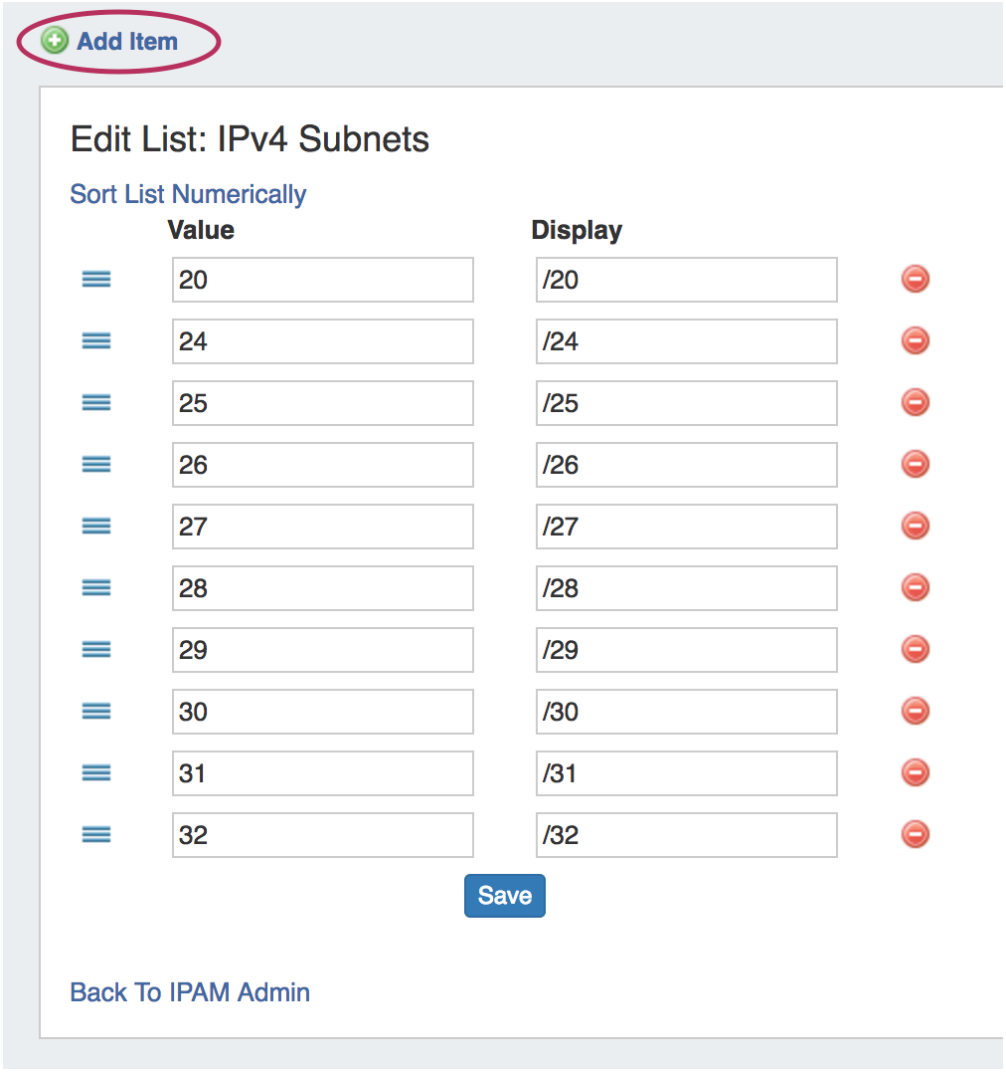
Add / Edit IPv4 / IPv6 Subnet Dropdowns

When assigning blocks using the "Smart Assign" function in the IPAM Gadget, the user has an option to assign an IP resource by allocation size. ProVision supports assignments down to a single host level (/32 for IPv4, /128 for IPv6).

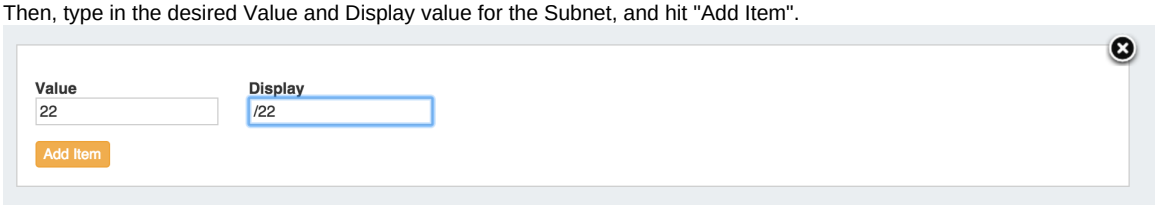
Note on Editing the Subnet Dropdown

Keep in mind that this is a global edit. If the values in the dropdown are changed, it will affect ALL users of the ProVision application.

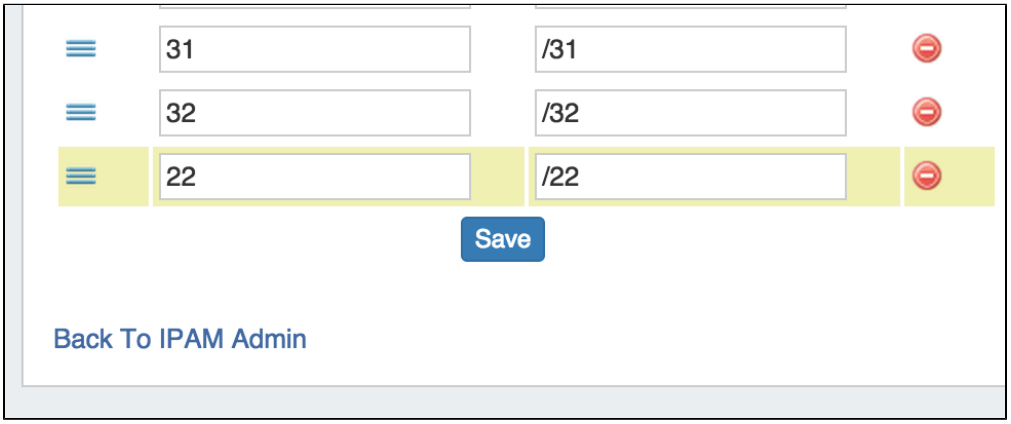
To add a new Subnet item, click on "Add Item" at the top of the Edit List: IPv4 or IPv6 Subnets page.



Then, type in the desired Value and Display value for the Subnet, and hit "Add Item".



After adding a new item, it will show at the bottom of the list highlighted in yellow. Hit "Save" to save your changes.



To **edit** a subnet, simply type your changes in to the text box. Entries with unsaved changes will be highlighted until saved.

To **reorder** the subnet list, click and hold on the "list" icon (three lines) to the left of the subet, then drag to the desired location in the list and release.

After adding or editing a subnet, you may wish to clean up the list order by hitting "Sort List Numerically" at the top of the page to reset the list order including the new entry.

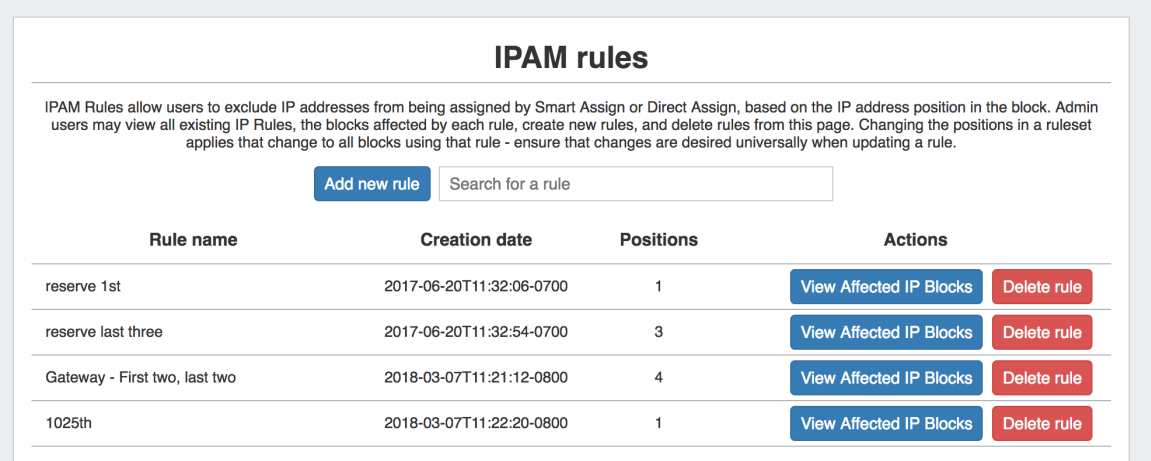
To **delete** a subnet, click on the red "delete" symbol to the right of the subnet entry.

When complete, be sure to click on the "Save" button to save your changes.

Edit IPAM Rules

IPAM Rules allow for certain address positions within an IP Block to be reserved when utilizing Direct Assign and Smart Assign.

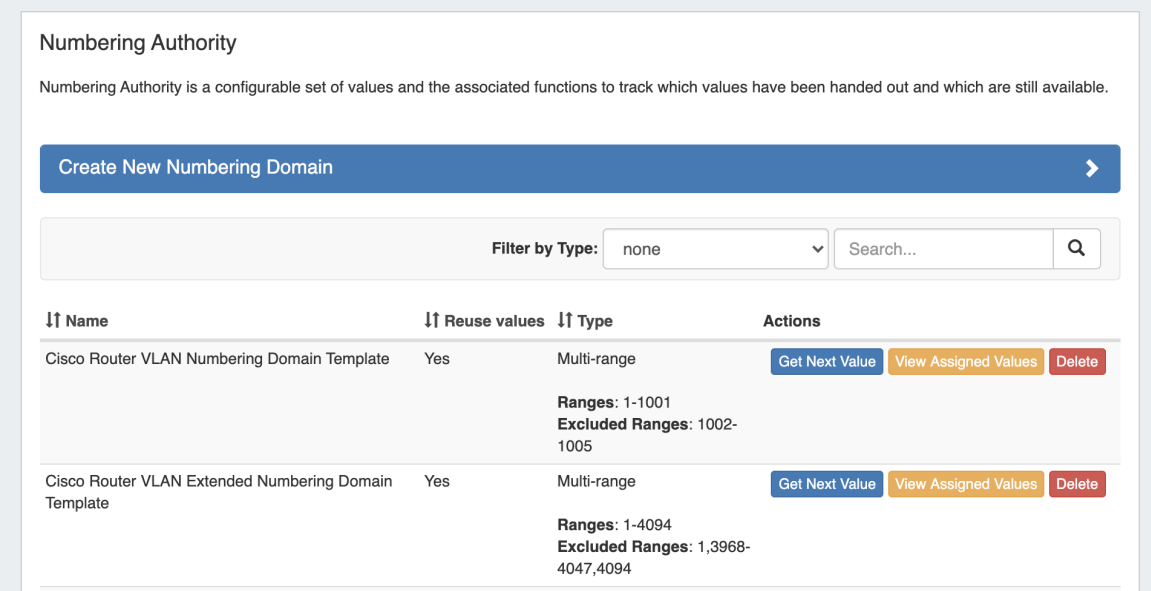
These rulesets may be managed in the "Edit IPAM Rules" section of IPAM Admin.



For additional details, see IPAM Rule.

Numbering Authority

Numbering Authority allows Admin users to configure domain sets of values, for use with associated ProVision functions or external number tracking.



With Numbering Authority, you can create new numbering domains, track which values have been handed out, free values no longer in use, generate the next sequence value, and associate keys-value pairs to a number value. Numbering Domains may be used with ProVision's APIv2 to generate numbers for use within ProVision instances or custom applications.

Available Domain Types

Four numbering domain types are available in Numbering Authority: Sequential, Multi-Range, UIUDv4, and IPv6 Sparse Allocation.

Sequential:

Provides a sequential number domain starting with '0' and progressing in numerical order. Potential Applications: Ticketing Queues, Customer Numbers

Multi-Range:

User-defined numbers and number ranges (e.g.: 2-3,4-6, 25, 27-28) to include or exclude as available. Potential Applications: VLANs

UIUD v4:

Generates a Universally Unique Identifier according to v4 (Random) standard. Potential Applications: Unique Identifiers

IPv6 Sparse Allocate:

Determines the next IPv6 block to assign to evenly distribute assignments throughout the provided range. Used with the IPAM IPv6 Aggregate Sparse Allocate function. See: Working with IP Aggregates . Applications: ProVision IPv6 Sparse Allocation

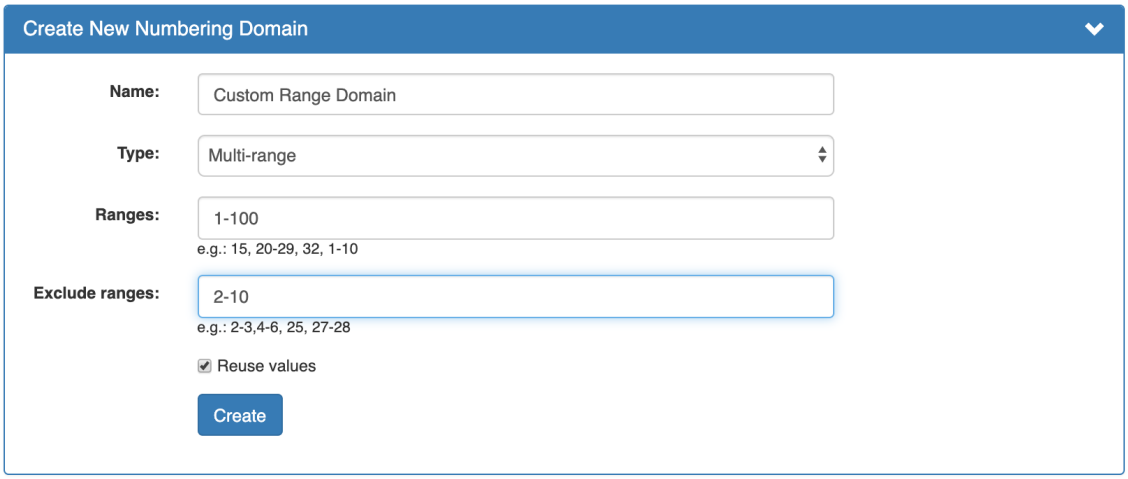
Working with Numbering Domains

See below for additional information on creating Numbering Domains and using domain actions.

Create a Numbering Domain

Go to Admin IPAM Admin, and select the "Numbering Authority" page.

Create a new numbering domain by expanding the "Create New Numbering Domain" section, then typing in a name for the new domain and selecting a domain type.



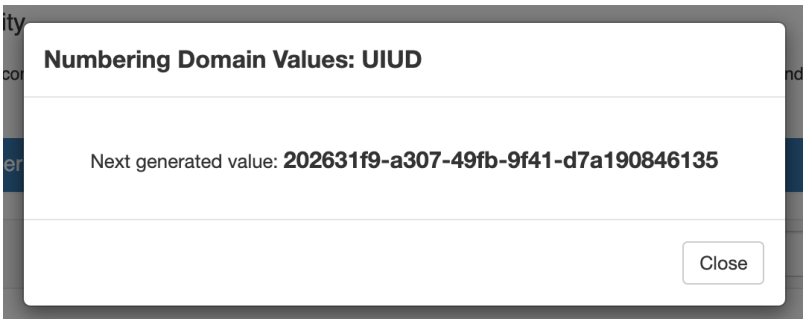
Enter information for the specific domain type, if necessary, and select whether to allow number reuse. When done, click "Create".

Number Domain Actions

Once a numbering domain is created, you may perform the following actions:

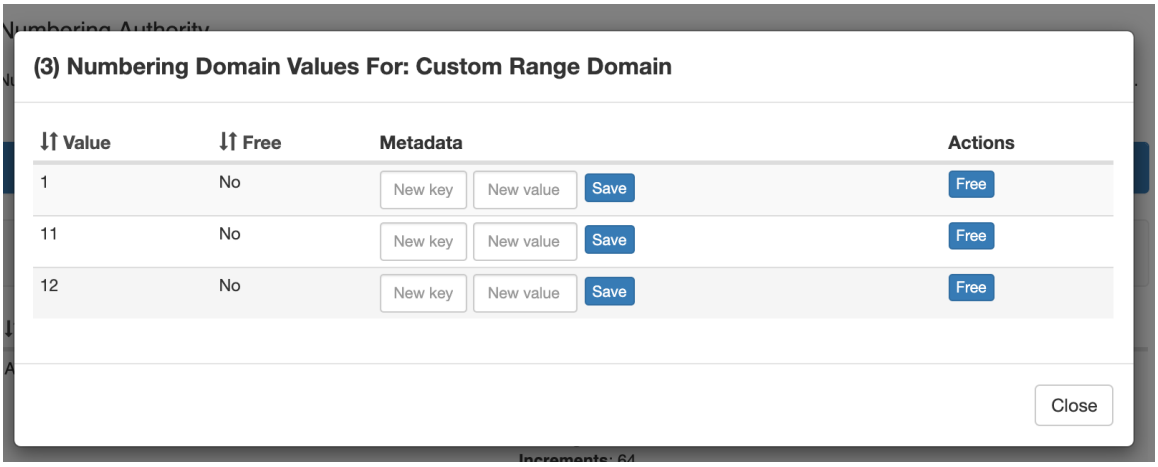
Get Next Value:

Gets the next value in the domain, adds it to the list of used domain values (assigns to the domain), and displays that value to the user.



View Assigned Values:

View values that are assigned to the domain, view used/free status, free assigned blocks, and save key-value metadata to values.



- Sort by Value and Free/Used values by clicking the column names
- To add metadata to a value, enter your information into the "Key" and "Value" fields under Metadata, then click "Save".
- Free a value for reuse, if allowed, by clicking "Free" under the value Actions column.

Delete:

Deletes the numbering domain.

Edit IPAM or VLAN Columns

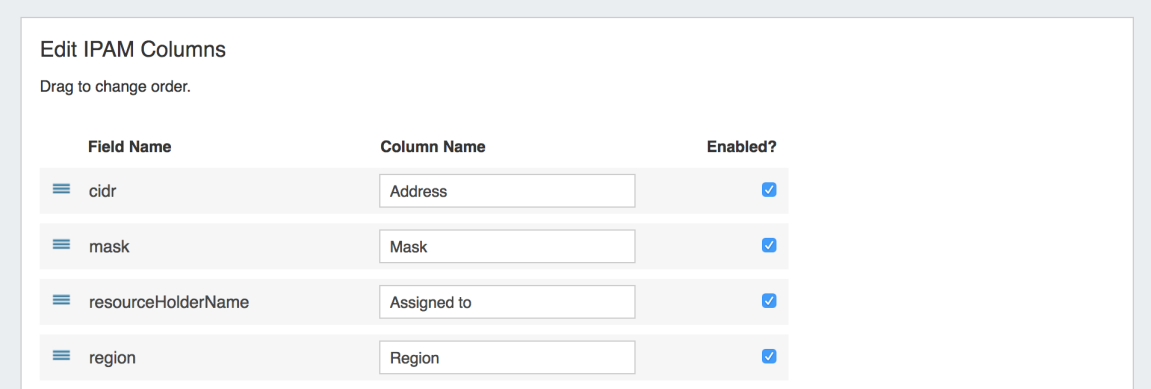
The Edit IPAM Columns and Edit VLAN Columns pages lets you change the order, column name, and visibility of IPAM / VLAN columns globally for IPAM / VLAN areas, respectively, in ProVision.

Editing IPAM Columns will affect the order, name, and visibility of columns in IPAM Manage and the IPAM Gadget, and the available fields in Edit Block for both VLAN and IPAM.

Editing VLAN columns will affect the order, name, and visibility of columns in VLAN Manage, VLAN Advanced, and the available fields in Edit Domain / Edit VLAN.

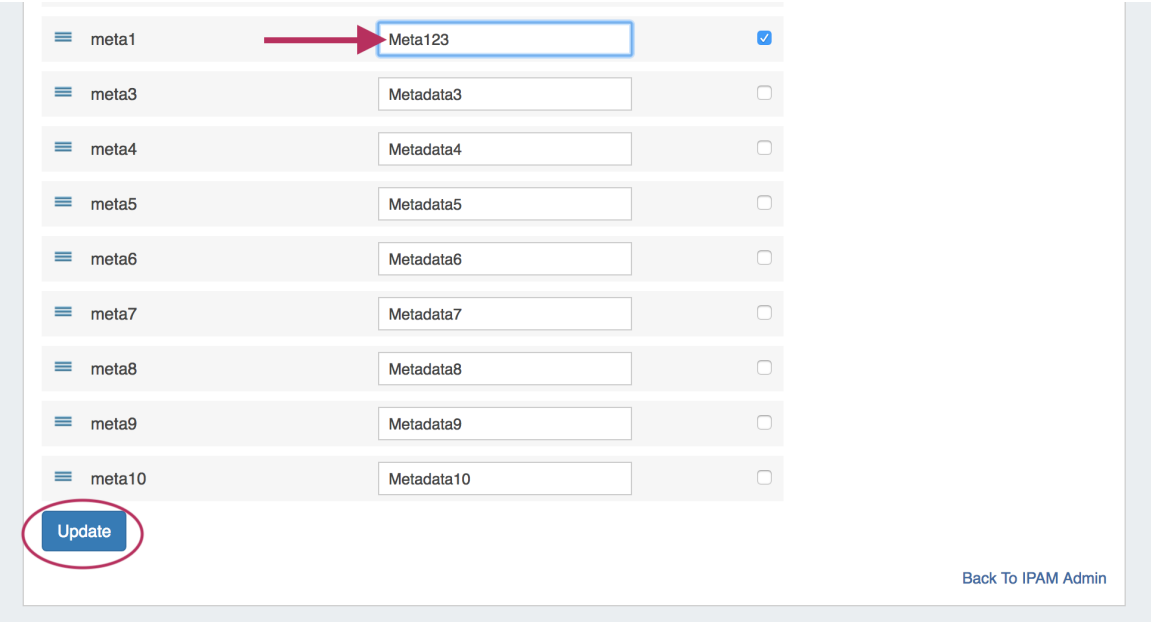
Additionally, for both IPAM and VLAN, any disabled fields will not be filterable or accessible in IPAM / VLAN Reports.

Eleven default ProVision fields and ten user-defined "Metadata" fields are available for customization.

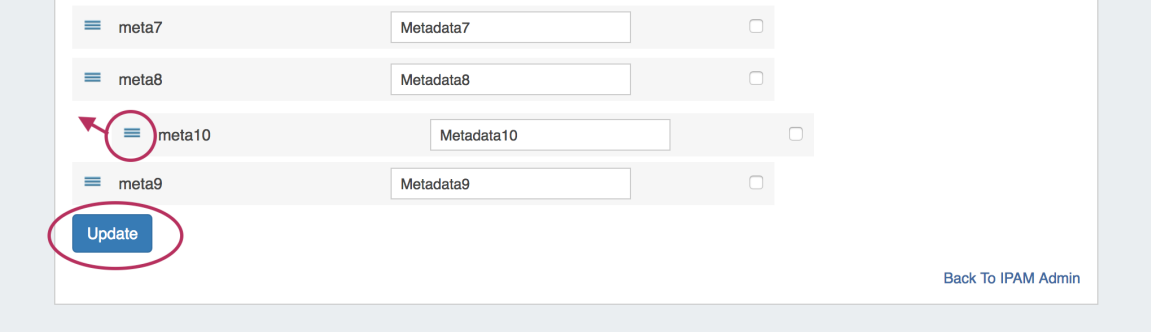


Keep in mind that "Edit Columns" is a global edit. If the values for order, header, or visibility are changed, it will affect ALL users of the ProVision application!

To **edit** a column name, simply type your changes in to the text box. and click the "Update" button.

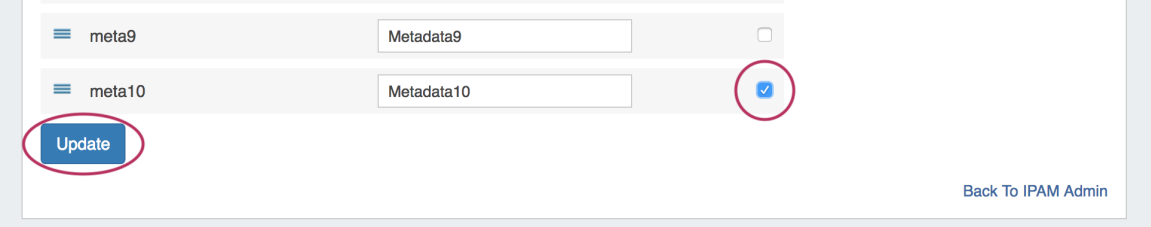


To **reorder** the columns, click and hold on the "list" icon (three lines) to the left of the subet, then drag to the desired location in the list and release.



To **toggle visibility** for a column, click in the checkmark field to the right of the column name to enable / disable visibility.

This shows or hides the column in both IPAM Manage and the IPAM Gadget, and affects all users.



When complete, be sure to click on the "Update" button to save your changes.

Additional Information

Continue on to the following pages for additional information on IPAM Admin tasks in ProVision:

- IPAM Rule
- Holding Tank Management
- LIR Management and Use

For additional information on non-admin IPAM areas, see:

- IPAM Tab