Platform Documentation

ProVision

Application Version 5.0.4

Covering:

- Resource Manager
- IP Address Manager
- DNS Manager
- DHCP Manager
- Peering Manager

For additional information, please visit http://docs.6connect.com or contact 6connect at support@6connect.com

Platform Documentation – Part 1

ProVision

Application Version 5.0.4

Covering:

- Installation Guide
- Getting Started
- User Guide

For additional information, please visit http://docs.6connect.com or contact 6connect at support@6connect.com

ProVision Installation Guide

Installing ProVision

You have 6connect ProVision and now it's time to set it up! 6connect offers both cloud hosted instances and local installations of ProVision. Follow the links below for specific instructions on each instance type.

For setup assistance or additional information, you can contact our support team at support@6connect.com.

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Hosted Instances Guide

Hosted Instances Guide

With a cloud hosted instance of ProVision, all you need is one of the following web browsers with an internet connection and login credentials!

Once you have confirmed that you have a supported browser and valid login, you can proceed to ProVision Getting Started, the ProVision User Guide, or the ProVision Admin Guide to learn more about ProVision.

6connect Cloud Hosted Instance: Browser Requirements

6connect makes every effort to maintain broad compatibility across browser vendors and versions.
Web Browsers Supported:

- Firefox 6+
- Safari 4+
- Chrome 11+
- Internet Explorer 9+(IE 8 works, but there may be some display issues)

Backup and Redundancy

Backup Schedule
6connect backs up your data every hour with a 1 month retention policy. Backups are replicated post transaction flush to a local secondary server.

Restoration
Is a phone call or email away. We can spin up a new instance with your preferred data set.

Local / VM Installation Guide

Installing ProVision

Local and VM installs of ProVision have specific requirements and configuration settings. Please follow the links below for detailed instructions on how to set up your local installation of ProVision.

For setup assistance or additional information, you can contact our support team at support@6connect.com.

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System Requirements

ProVision System Requirements

6connect Virtual Machine

The Virtual Machine has a console with additional information to assist with initial setup.

Host Environment:
The optimum resource mix will be based on page views/refreshes. A larger concurrent user base with constant editing may benefit from additional RAM.
The minimum recommended virtual environment is:

- Two processor cores
- 2GB RAM (4GB Recommended)
- 20GB Local storage (local SAS/SSD or iSCSI/FC LUN optional)
- VM format support for VMDK, OVF, OVA (Support for vSphere 5.x)

Software Environment:
Operating System: FreeBSD

Port Requirements:

Open outbound ports 443 and port 80

- cloud.6connect.com is used for license check
- checkip.dyndns.org validates the IP address of the machine to communicate with the licensing server

6connect Locally Hosted Instance

Initial application installation is included with the purchase of a license from 6connect. If modifications need to be made, we recommend contacting 6connect prior to any changes to ensure there is no negative impact to production systems or product functionality.

Hardware Requirements:
The optimum resource mix will be based on page views/refreshes. A larger concurrent user base with constant editing may benefit from additional RAM.
The minimum recommended hardware is:

- Dual-core Xeon class processor or equivalent (Quad-core Xeon Recommended)
- 2GB RAM (4GB Recommended)
- Local SATA storage (local SAS/SSD or iSCSI/FC LUN optional)
- Rack mount server chassis with redundant power supplies

*Virtual instances are also acceptable. We have confirmed functionality with Citrix Xen Essentials, VMware, KVM, etc.

Software Requirements:
Operating System: Linux/BSD/OSX
Base Software Needed:

- Apache 2.x: {+}http://httpd.apache.org/
- php 5.5.x: {+}http://php.net/downloads.php
    - Plugin: Download Source Guardian extension from {+}http://www.sourceguardian.com/ixeds/ and install to php extensions directory.
- MySQL 5.5+: {+}http://www.mysql.com/downloads/

REQUIREMENT: MySQL master/master replication
Please note that MySQL 5.5.38+ is required for master/master replication functions to work correctly

MySQL Triggers
6connect does not support custom MySQL triggers at this time - please email support@6connect.com if you have any questions.

Port Requirements:

Open outbound ports 443 and port 80

- cloud.6connect.com is used for license check
- checkip.dyndns.org validates the IP address of the machine to communicate with the licensing server

Backup and Redundancy: Local / VM

Backup and Redundancy

Local/VM Instance

Backup Schedule
6connect backs up your local data to our cloud server every 48 hours with a 1 month retention policy. The backend of the application is MySQL, so it can be replicated to another server/instance or even tied into your own backup storage infrastructure.

Restoration
Is a phone or email away. We can spin up a new instance with your preferred data set, or send you a link to download your database. Optionally, we can even help you set it up and import your data to your new instance or assist with redundant configuration options depending on your RPO/RTO guidelines.

⚠ **Backup your Data**
For local customers, you should be backing up the following items:

mysqldump

And system folders off the 6connect root:

/scans

/zones

/keys

/archive

/data

CentOS Configuration Guide

CentOS Configuration Guide

Before You Begin

Ensure that System Requirements have been met prior to proceeding with the CentOS Configuration Guide.

Install and Configure MySQL

MySQL is included with most CentOS installs, check for it with:

```
yum list installed | grep mysql
```

If its not installed:

```
yum install mysql-server
```

> ⚠ **Service Startup**
> Please ensure that the MySQL service has been started after you have installed it!

Set the mysql root password.

```
mysql
\u mysql
SET PASSWORD FOR 'root'@'%' = PASSWORD('newpass');
CREATE USER 'ipam'@'localhost' IDENTIFIED BY 'somelongpassword';
FLUSH PRIVILEGES;
```

Make sure to set both passwords to a minimum of 12 characters with some numbers and punctuation. The default my.cnf is fine for most clients. For large datasets through, the my.cnf will need to be tuned. [Insert tuning guide]

Install and Configure PHP

PHP is usually included with most CentOS installs too, check for it with:

```
yum list installed | grep php
```

You should see something like php53.x86_64, php53-mysql.x86_64, php53-cli.x86_64 listed. If not:

```
yum install php php-mysql
```

PLEASE INSTALL
Depending on your installation - you also need to confirm that **expect** and **unzip** are installed and enabled.

Install PCNTL

```
yum install php-pcntl
```

Install and Configure Apache and SSL

mod rewrite REQUIRED
Please note that mod_rewrite is required! If it is not enabled in Apache, key elements will not work as expected.

If SSL support is not already installed, install it:

```
yum install mod_ssl openssl
```

Generate private key, CSR, and temporary key if one hasn't been provided.

```
openssl genrsa -out ca.key 1024
openssl req -new -key ca.key -out ca.csr
openssl x509 -req -days 365 -in ca.csr -signkey ca.key -out ca.crt
```

Copy the files to the correct locations

```
cp ca.crt /etc/pki/tls/certs
cp ca.key /etc/pki/tls/private/ca.key
cp ca.csr /etc/pki/tls/private/ca.csr
```

Make sure that you copy the files and do not move them if SELinux is enabled (which it is by default)

Edit the apache ssl config and put in the appropriate options:

```
vi /etc/httpd/conf.d/ssl.conf
```

Change - SSLCertificateFile /etc/pki/tls/certs/ca.crt
Change - SSLCertificateKeyFile /etc/pki/tls/private/ca.key

```
/etc/init.d/httpd restart
```

Add 443 virtual hosts as needed in httpd.conf.

Install and Configure Source Guardian

Download the extensions from http://www.sourceguardian.com/ixeds/. Choose either Linux 32 or Linux 64 .tar.gz depending on architecture.

```
tar -xvzf ixedX.xxx.tar.gz /tmp
```

> ⓘ In the new ixed dir in /tmp, there will be many different files. The naming convention is as follows:
> ixed.5.3.lin - for all PHP 5.3.x versions
> ixed-5.0.1.lin - for PHP 5.0.1 only
> ixed.5.3ts.lin - the thread safe version for all PHP 4.3.x versions

Create an extension directory somewhere if there isn't one (/var/www/ext).

```
vi /etc/php.ini
```

Add - extension=/var/www/ext/ixed.5.3.lin

```
/etc/rc.d/init.d/httpd restart
```

Configure SELinux

> ⚠ **RE-IP WARNING**
> Please remember - if you change the IP address of the your server, then you will need to update SELinux functions accordingly

Most CentOS install have SELinux enabled by default. One of its protections is to not allow httpd daemon to make network connections, we need to disable this for license checks.

To view the SELinux configuration for http:

```
/usr/sbin/getsebool -a | grep httpd
```

To turn protection off for the httpd daemon for creating network connections:

```
/usr/sbin/setsebool -P httpd_can_network_connect 1
```

Configure IPTables

IPTables is enabled by default on CentOS. Add a new rule to allow 443 from anywhere. Make sure that this rule is in the chain BEFORE any blanket reject rule:

To list all current IPTable rules:

```
/etc/rc.d/init.d/iptables status
```

To add a rule for 443:

```
/sbin/iptables  RH-Firewall-1-INPUT -I 5 -m state --state NEW -m tcp -p tcp --dport 443
-j ACCEPT
```

⚠ The -I 5 is what adds the rule to the 5th chain position. You might need to change this depending on existing rules. Look at what rules are there before running.

To save the new config:

```
/etc/rc.d/init.d/iptables save
```

OR (some versions of centOS have different iptables names, so the above won't work)

```
vi /etc/sysconfig/iptables
```

With the file open for editing, add:

```
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 443 -j ACCEPT
```

Once complete - restart the iptables service:

```
/etc/init.d/iptables restart
```

ⓘ Customers can alter this post install to allow only their IP space, plus the 6connect management space.

Install Radius

This section only needs to be followed if the customer will be using Radius for authentication. **If pear is not installed, install pear first**. Otherwise, just install the radius extensions:

```
yum install php-pear
pecl install radius
vi /etc/php.ini
Add - extension=radius.so
```

Install 6connect

When ready, proceed to 6connect Local Software Installation for detailed installation instructions.

6connect Local Software Installation

Local Software Installation & Specific Configuration Instructions

Before You Begin

Ensure that System Requirements have been met and CentOS configuration followed (if applicable) prior to proceeding with the configuration and installation instructions on this page.

Apache Configuration Requirements

⚠ **mod_rewrite, mod_ssl, mod_deflate, and mod_headers are required**

ProVision must be run over SSL. Self signed certificates are fine.

ⓘ **ssl.conf**
Please note that if SSL is being used, the directory information will need to be present in the ssl.conf as well (location/file name may be different depending on the OS and Apache version)

The web root directory for ProVision must be configured with the following directives:

Apache 2.2:

```
<Directory /<ProVision webroot>>
    Options FollowSymLinks
    AllowOverride All
    Order allow,deny
    Allow from all
</Directory>
```

Apache 2.4:

```
<Directory /<ProVision webroot>>
    Options FollowSymLinks
    AllowOverride All
    Require all granted
</Directory>
```

⚠ **AllowOverride**
Please note that if the AllowOverride is not enabled on the doc root - there will be multiple issues in the ProVision UI!

MySQL Configuration

```
SET GLOBAL sql_mode='STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION';
SET SESSION sql_mode='STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION';
```

PHP Configuration

PHP Compatibility
Please note that as of version 5.0.0 of ProVision, PHP versions >5.5 are required

```
display_errors = Off
session.save_handler = files
session.save_path = "/tmp"
```

The session save path can be configured for alternate directories, however, you might need to manually add the folder "imports" and chown/chmod it to be readable and writeable by the web user. The software will try to do this automatically, but permissions could prevent it from being added correctly. This must be configured to import data.

On new versions of PHP, the following may need to be added:

```
session.bug_compat_warn=0
```

SMTP = localhost
smtp_port = 25

Depending on the OS, the following may need to be added after various php extensions are added:
extension=radius.so
extension=ssh2.so

Source Guardian

php extension - download from http://www.sourceguardian.com/ixeds/
extension=ixed.5.x.xxx

PHP cli binary path must be set in the software Admin section if different from default. By default it is /usr/bin/php.

Additional PHP Extensions

See configTest.php located in the 6connect tar file for an updated list

Additional System Packages

memcache
memcached
openssl
cURL
nmap
sendmail (Or any mail software. The correct binary should be specified in php.ini)

DNS Tools and Packages

named-checkzone
rndc
zonesigner
dnssec-dsfromkey

Install 6connect ProVision Software

The local installation process is as follows:

⚠ Scripts must be run in the exact order listed.

1. Install all the packages, extensions, and perform configuration listed above and the Source Guardian extension.
    a. To install the Source Guardian extension:
    Download the correct Source Guardian loader for your OS/php version from: http://www.sourceguardian.com/ixeds/
    Place the file in your php extension directory as specified in your php.ini
    Add extension=ixed.x.x.y.y to your php.ini
2. Move the tar file in 6connect web root.
    a. tar -xof productionBuild-4.0.3.tar
    This will place all the new files into your web root directory.
3. Set the directory permissions for all use data directories:
    a. Run script from the command line as root: "configDir.sh"
4. Check for all installed modules and license info:
    a. Run script from web browser: "configTest.php"
5. Configure the database info in globals.php, install the default database and initial user:
    a. Run script from web browser: "configBootstrap.php"
6. Carefully note the login credentials provided before continuing.
7. Set the secure directory, create keys, and write this info to globals.php:
    a. Run script from the command line as root: "configSecureKeys.sh"
8. Log in and use!

6connect Local Software Upgrades

- Upgrading Local Installs of 6connect Provision

Upgrading Local Installs of 6connect Provision

Upgrades after 4.1.20 and up

You must be running at least 4.1.20 to follow any of the upgrade methods listed below. If you are not yet at this version, upgrade to 4.1.20 using the old upgrade process first, and then continue using the new upgrade process or contact support@6connect.com or any questions or to schedule an upgrade to the latest version.

There are now 3 different methods to run upgrades.

Old Method (See Upgrades prior to 4.1.19 for detailed instructions)

Download the latest 6connect tar file from https://cloud.6connect.com/Download/Latest/

Extract in web root.

Run the upgrade scripts located in upgrade/scripts in order of version number via php <upgrade-script.php> -v

Command Line

In upgrade/scripts run 'php upgrade.php -h' to get the help and full usage of upgrade.php. This script will automatically get the latest tar file, create a backup, and run all the necessary upgrades between the current and latest version. The most common usage of upgrade will look like this 'php upgrade.php -v -b </path/to/store/backup>'

GUI

In the 6connect tool, navigate to Admin. If there is a new version available, an Upgrade button will be available. Click on the Upgrade Now button to go to the upgrade page. It will automatically download the latest version available, run all upgrade scripts, and create a log of the upgrade process.

Upgrades prior and up to 4.1.19

IMPORTANT NOTE FOR 4.1.15 - The configDir.sh script must be run as root after the 4.1.15 tar file is unpacked and before running upgrade-4.1.15.php.
1. Create a database backup.
```
mysqldump -u <user> -p<pass> <6connect database name> > /tmp/6connectDBBackup.<date>.sql
```

2. Create a directory backup. Even if you have offsite backup's with 6connect enabled, perform this step to ensure the most current data is saved.
```
tar -cvf 6connectFileBackup.<date>.tar /path/to/webroot
```

3. Move the tar file in 6connect web root.
```
tar -xof productionBuild-4.1.4.tar
```
This will place all the new files into your web root directory.

4. Run database upgrades, located in ./dev.
The simple rule of thumb is to run every database upgrade from the version after yours, to the version you want to get to. Here is the short cut list:
If upgrading from 4.1.0 or higher:
```
php upgrade-4.1.3.php -v
php upgrade-4.1.4.php -v
php upgrade-4.1.5.php -v
php upgrade-4.1.6.php -v
php upgrade-4.1.7.php -v
php upgrade-4.1.8.php -v
php upgrade-4.1.9.php -v
php upgrade-4.1.10.php -v
php upgrade-4.1.11.php -v
php upgrade-4.1.12.php -v
php upgrade-4.1.13.php -v
php upgrade-4.1.14.php -v
configDir.sh <web user> (after tar 4.1.15 tar file unpacked)
php upgrade-4.1.15.php -v
php upgrade-4.1.16.php -v
php upgrade-4.1.17.php -v
php upgrade-4.1.18.php -v
php upgrade-4.1.19.php -v
```

If upgrading from 3.9.3:
Contact 6connect Support - support@6connect.com

5. Check directory/file permissions for the following and make sure they read/write for the web user:
archive
keys
scans
zones
data/globals.php
images/custom

configDir.sh can be run to correct any permissions issues.

Check the imports directory for read/write permission in the configured php session dir.

6. Go to http://<web root>/configTest.php. If there are any configuration errors listed, they must be corrected.

7. Login and use!

ProVision Getting Started

Welcome to ProVision!

Our Getting Started documents provide an overview of concepts to orient you to working in ProVision. Below are some of the resources available. If you need setup assistance or additional information, you can contact our support team at support@6connect.com.

ProVision Getting Started

Resource Concepts - The Resource Management System is a key component of ProVision. This system supports a variety of hierarchies and metadata - understanding how these pieces can be used is important prior to importing data or setting up the application.

Workflow Concepts - ProVision has two distinct interfaces depending on the user level and task. It is important to understand how these interfaces work together from the centralized data. This is important for user on-boarding and training of internal operations staff, developers or engineering teams.

UI Element Legend - ProVision has some UI elements that you should be familiar with for easy day to day operation.

ProVision User Guide

The user guide gives you an overview on the standard UI functions of ProVision and installed Modules.

ProVision Admin Guide

The Admin Guide provides an overview of administrative functions of the different functional areas of ProVision.

ProVision Developer Tools

The Developer Tools section has details on our API and related information - including code samples.

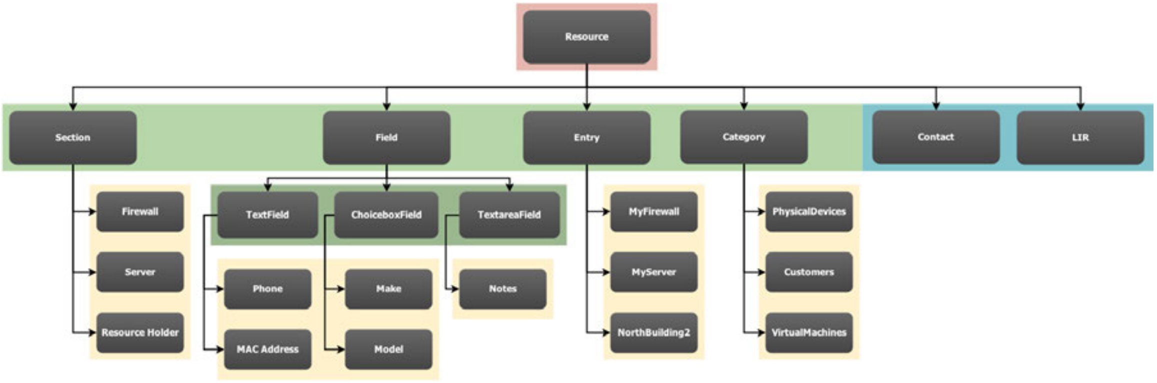
Additional Resources

You can also browse the Tutorials and FAQ, if you have any questions, please contact our support team at support@6connect.com.

Resource Concepts

Overview

In Provision, the Resource System (RS) is an expression of object-oriented programming. In this context, the term “resource” is equivalent to the term “object”, where an object is an instance of a class. Traditionally in OOP, there is an Object class that is the root of the class hierarchy. In the RS, the Resource class is the root class. Every class in the system has Resource as a superclass and all resource objects implement the methods of that class.



The diagram above shows examples of resource sub-types. The items on a green or blue background are types of resources; they each have their own corresponding Class. An item on a yellow background is an example of an object that could have been instantiated from the class (resource type) that it's part of.

Additional Information:

- Classes
- Database Layout
- The Asset System

Classes

Classes

> "A class--the basic building block of an object-oriented language such as Java--is a template that describes the data and behavior associated with instances of that class. When you instantiate a class you create an object that looks and feels like other instances of the same class."
>
> *Mary Campione and Kathy Walrath, The Java Tutorial: Object-Oriented Programming for the Internet, The Java Series (Reading, Mass.: Addison Wesley, 1996)*

Class Resource

```
class Resource {
    public int    $id;
    public string $name;
    public string $slug;
    public string $type;
    public int    $parent_id;
    public int    $category_id;

    protected array $attr   = array();
    protected bool  $loaded = FALSE;

    public object get_attr( string $key );
    public void   set_attr( string $key, object $value );
    public bool   loaded();
}
```

Properties

As you can see from the database layout, the public properties of the Resource class are all part of the main **resource** table. The two protected properties **attr** and **loaded** are created at runtime. There are many situations where only the core information is required. To improve performance, attribute data is ignored when it is not required. Attributes are stored in the database as longtext; non-primitive types (such as arrays) are serialized and stored as a string.

```
$attr
A key-value store of the attributes that exist in the resource_attr table.

$loaded
A boolean value which is used to indicate whether or not the attributes have been loaded.
```

Why do some attributes have names that start with an underscore?

This is the convention for storing metadata. Most attributes are for storing data that is created by the user and is available to be directly edited by the user. When we want to store system data, configuration options, or just data that isn't meant for human consumption - we store it as metadata. An attribute is identified as being metadata by the convention of starting the name/key of the attribute with an underscore character (e.g. _meta). If you are interfacing with the API, you will frequently come across metadata. You're welcome to modify the metadata of a resource (if you know what you're doing) or add metadata attributes for known metadata keys, but you shouldn't create your own attributes with keys that begin with an underscore. Future versions of ProVision will use new metadata keys without warning, and if there is a naming conflict, your data could be lost.

Examples

These examples show the different methods that can be used to find and load a Resource object. They also show different data structures that are used to represent the object.

1 - PHP

Internal code example
To help users better understand how ProVision works, some of the examples in this documentation are of internal processes. They can contain code that only works when used as part of the core system and thus is not applicable to 3rd party development. The API is currently the only way for external tools to integrate with ProVision. Any example that contains internal code should be clearly labeled. Some common characteristics of these examples are code that doesn't use the API and code written in PHP (most example code will be in JavaScript).

This example uses the ResourceQuery class to find a resource object and then prints the result. It is included to show the similarity between finding a resource via the API and what happens under the hood.

```
$params = array(
    'slug' => 'tlr'
);
$resourceQuery = new ResourceQuery();
$resource = $resourceQuery->query($params);

var_dump($resource);
/*
array (size=1)
  0 =>
    object(Resource)[27]
      protected 'id' => string '1' (length=1)
      protected 'name' => string 'TLR' (length=3)
      protected 'slug' => string 'tlr' (length=3)
      protected 'type' => string 'resource' (length=8)
      protected 'parent_id' => null
      protected 'category_id' => null
      protected 'attr' =>
        array (size=0)
          empty
      protected 'loaded' => boolean true
*/
```

2 - API request

This is a standard API request, the request data is urlencoded and the result is JSON

/api/v1/api.php?target=resource&action=get&slug=TLR

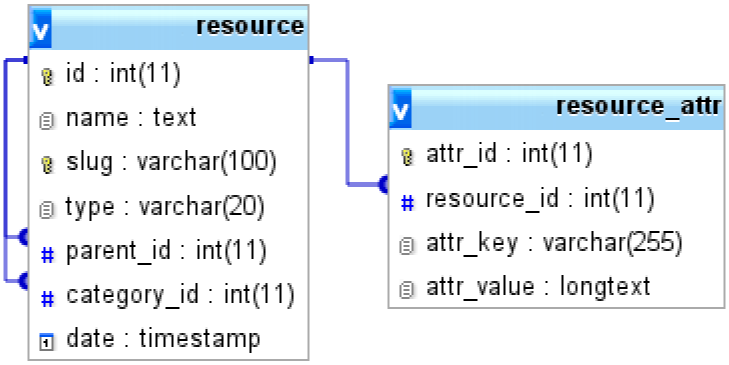
```json
{
  "success": 1,
  "message": "Search successful",
  "data": [
    {
      "id": "1",
      "name": "TLR",
      "slug": "tlr",
      "type": "resource",
      "parent_id": null,
      "category_id": null,
      "attr": {}
    }
  ]
}
```

Database Layout

Database Layout

Details of the database and tables used by the RS are not necessary and should have no bearing on usage or API based development. However, a visualization of these tables may help some users better understand how the RS works, so they are provided below.

Figure



Relations

`resource`.`category_id` -> `resource`.`id`

`resource`.`parent_id` -> `resource`.`id`

`resource_attr`.`resource_id` -> `resource`.`id`

Structure in SQL

resource

Expand source

```
--
-- Table structure for table `resource`
--
CREATE TABLE IF NOT EXISTS `resource` (
`id` int(11) NOT NULL,
  `name` text NOT NULL,
  `slug` varchar(100) NOT NULL,
  `type` varchar(20) NOT NULL,
  `parent_id` int(11) DEFAULT NULL,
  `category_id` int(11) DEFAULT NULL,
  `date` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP
) ENGINE=InnoDB  DEFAULT CHARSET=utf8 AUTO_INCREMENT=1115 ;
--
-- RELATIONS FOR TABLE `resource`:
--   `category_id`
--       `resource` -> `id`
--   `parent_id`
--       `resource` -> `id`
--
--
-- Indexes for dumped tables
--
--
-- Indexes for table `resource`
--
ALTER TABLE `resource`
 ADD PRIMARY KEY (`id`), ADD UNIQUE KEY `slug` (`slug`), ADD KEY `category_id`
(`category_id`), ADD KEY `parent_id` (`parent_id`);
--
-- AUTO_INCREMENT for dumped tables
--
--
-- AUTO_INCREMENT for table `resource`
--
ALTER TABLE `resource`
MODIFY `id` int(11) NOT NULL AUTO_INCREMENT,AUTO_INCREMENT=1115;
--
-- Constraints for dumped tables
--
--
-- Constraints for table `resource`
--
ALTER TABLE `resource`
ADD CONSTRAINT `resource_ibfk_1` FOREIGN KEY (`category_id`) REFERENCES `resource` (`id`)
ON DELETE SET NULL ON UPDATE CASCADE,
ADD CONSTRAINT `resource_ibfk_2` FOREIGN KEY (`parent_id`) REFERENCES `resource` (`id`)
ON DELETE SET NULL ON UPDATE CASCADE;
```

resource_attr

Expand source

```
--
-- Table structure for table `resource_attr`
--
CREATE TABLE IF NOT EXISTS `resource_attr` (
`attr_id` int(11) NOT NULL,
  `resource_id` int(11) NOT NULL,
  `attr_key` varchar(255) NOT NULL,
  `attr_value` longtext NOT NULL
) ENGINE=InnoDB  DEFAULT CHARSET=utf8 AUTO_INCREMENT=6744 ;
--
-- RELATIONS FOR TABLE `resource_attr`:
--   `resource_id`
--       `resource` -> `id`
--
--
-- Indexes for dumped tables
--
--
-- Indexes for table `resource_attr`
--
ALTER TABLE `resource_attr`
 ADD PRIMARY KEY (`attr_id`), ADD KEY `item_id` (`resource_id`);
--
-- AUTO_INCREMENT for dumped tables
--
--
-- AUTO_INCREMENT for table `resource_attr`
--
ALTER TABLE `resource_attr`
MODIFY `attr_id` int(11) NOT NULL AUTO_INCREMENT,AUTO_INCREMENT=6744;
--
-- Constraints for dumped tables
--
--
-- Constraints for table `resource_attr`
--
ALTER TABLE `resource_attr`
ADD CONSTRAINT `resource_attr_ibfk_1` FOREIGN KEY (`resource_id`) REFERENCES `resource`
(`id`) ON DELETE CASCADE ON UPDATE CASCADE;
```

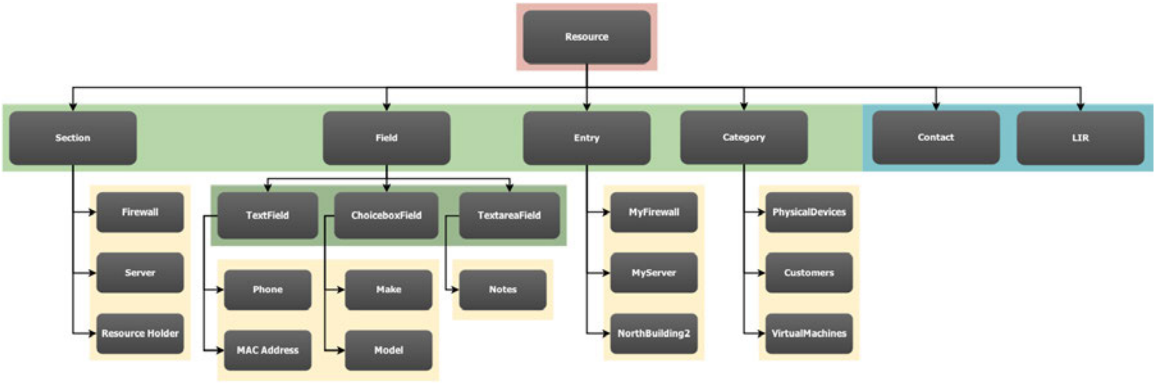
The Asset System

Prerequisites

Some knowledge of object orientated programming (OOP) is recommend to understand the following description of the Asset System. If you are unfamiliar with OOP concepts, I would recommend reading a tutorial such as this one (http://docs.oracle.com/javase/tutorial/java/concepts/index.html) provided by Oracle or this one (http://msdn.microsoft.com/en-us/library/ca22fyhc(v=vs.90).aspx) provided by Microsoft, to help you understand terms like class, object, instantiate, property, method, and others.

Overview

The asset system is a content management system (CMS) that is built as an extension to the resource system. It's the main use of the resource system, and to many, the terms "asset system" and "resource system" can seem synonymous. In the diagram below, the Resource class is at the top in red. The child-classes that make up the asset system are in green. Yellow is used for examples of objects (not classes) that could/would have been instantiated from their Class. And the items in blue are examples of resource child-classes (resource types) that exist outside of the asset system.



Introduction

When writing software, the developer creates classes. A class is like a blueprint for objects. The class defines the properties and methods that the future objects will have, and like blueprints, multiple objects can be created from a single class. The Resource Class is a class, and each resource "type" (e.g. Section, Field, Contact, ect.) has a class, something which has been written in core code and cannot be changed by the user. The purpose of the asset system is to reproduce this fundamental low-level class-object system in such a way that the user can create their own classes, properties, methods, and objects without needing to dive into the code.

Components

Section

Sections are like classes, they are the templates/blueprints of the asset system. To create the structure of the blueprint, the user assigns fields (i.e. properties) and sometimes gadgets (i.e. methods) to the section.

Entry

Entries are the objects of the asset system. An entry cannot be created without a section to use as its blueprint. Creating an entry from a section is like instantiating an object from a class.

Field

Fields are the properties of the class. At time of writing, Field is the only asset-resource class that has it's own child-classes; this is to accommodate the different types of fields. For example, when creating a class *Car*, the developer might give the *Car* class the property *String color*. In a similar fashion, a user of the Asset System could create a Section called *Truck*, a TextField called *color*, and then assign that textfield to the section. When the user goes to create an entry from the section *Truck*, they'll be given the option to include a text value for the field *color*.

Fields also have a use beyond acting as properties for classes. The field object (in this case *color*) is a resource object in it's own right. This means it can be modified independently of the sections that have assigned it and the entries that are using it. For example, a field which shows a dropdown box of several options could be modified to include more options; any entry which is using that field would automatically receive those new changes. Or consider a simple textfield object called "MAC Address" that is used by several sections and entries. If that field was modified to include a filter that checks the input for a valid MAC string, any entry using that field would get those improved validation checks.

Also, because the same field object can be assigned to multiple sections, it's easier to find entries by their values because they're all using the exact same field object. The alternative would have to be a blind text search to try and find different objects but with contextually similar values, and that method is notoriously unreliable.**This is why it's encouraged to assign the same field object to different sections as opposed to just making new fields each time.**

Fields are like what you might call class properties or class variables, but they've also got a lot more functionality available for when you need it.

Category

Categories are just an organisational tool. There is a clearly defined relationship between Sections, Entries, and Fields, but Categories exist on their own. If you look on the Classes page, you'll see that every Resource has the same 6 fundamental properties and 3 of them are ID values. The first is the ID that belongs to the resource itself, the second is the ID of the resource's parent, and the third is the ID of the Category that the resource belongs to (if any). There isn't a strict hierarchy here, how you use categories is entirely up to you. You can create categories, child categories, and careful plan exactly how you want the resources in your system to be organised. Or you can ignore the whole thing completely and just let every resource have the default category of "uncategorized." Many user find that the ability to create hierarchal parent-child relationships with entries, and then filter down results even further by Section, leaves the use of Categories unnecessary. But if you want to use them, it's there.

Gadgets

Gadgets are not resources, which is why they're not included in the chart at the top of the page. Gadgets are self contained applications and are limited to only using HTML, CSS, and JavaScript. All they know about the page that they're loaded on is the ID of the resource. However, because gadgets can interact with the API via JavaScript/AJAX, they're the perfect way to add new features to the asset system in a maintainable and modular way. At it's core, the asset system just allows users to create entries and then modify their text based attributes through a simple form. The ability for gadgets (such as the IPAM-Gadget) to interact with the API, is what makes the asset system so powerful.

Currently, the only gadgets that can be assigned to sections are gadgets that have been created by 6Connect. However our API is robust enough that almost anything you can do through ProVision could be recreated in the form of an isolated gadget. And because they're just made from html and javascript, it shouldn't be too strenuous for anyone to write a gadget of their own. If you want to create your own gadgets, I would recommend emailing us first with an outline of what you're trying to do. Then my recommended procedure would be to first create it as a standalone HTML/Javascript webpage that connects to our API (you may need to disable cross domain request security in your browser to make the AJAX connections work). Once you have your standalone page working, the process to turn that into an embeddable gadget is trivial.

Note: Gadgets are initialized as AngularJS applications. Both the AngularJS and jQuery libraries will be loaded on the page and available to use, but it is highly recommend to make the entire gadget in the form of an AngularJS app. But as noted above, it's best to contact us first so we can help you in the right direction.

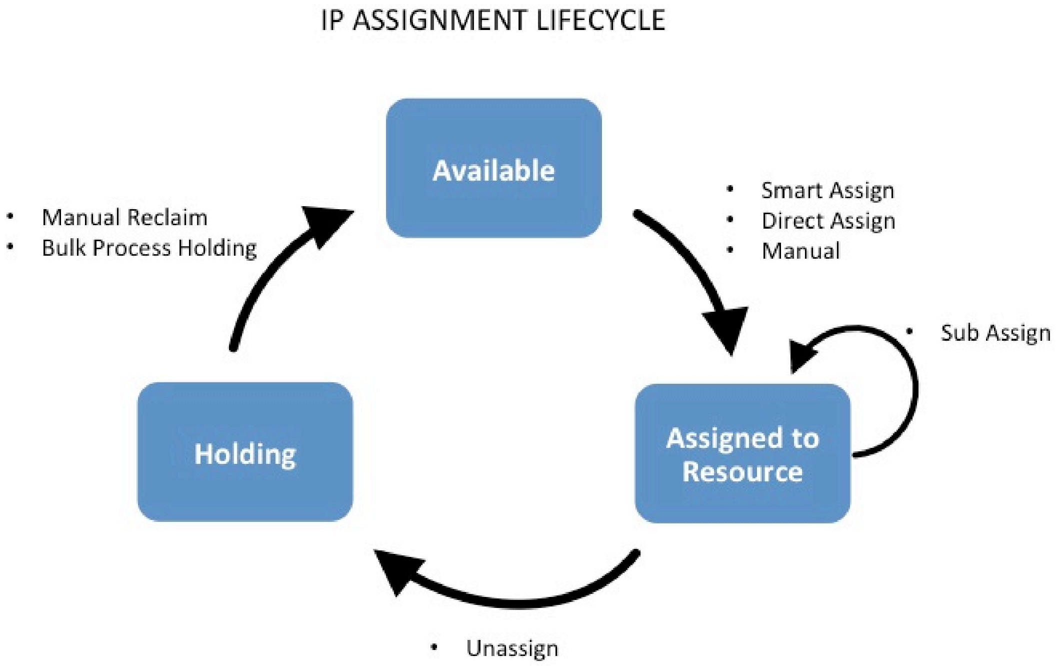
Workflow Concepts

Workflow Concepts

- Workflow Concepts
    - IP Assignment Lifecycle
    - IP Management

IP Assignment Lifecycle

In ProVision, the IP assignment lifecycle starts with an available block. When assigning the block to a resource, there are multiple methods that may be used: Smart Assign, Direct Assign, or Manual Assign. Once assigned to a Resource, blocks can be further subassigned via the same methods. When a block is unassigned, it proceeds into the Holding Tank, where blocks are held until either a set time has elapsed, or until they are manually reclaimed to 'available' status.



For more information on performing tasks in this IP Assignment Lifecycle, see the following documentation sections:

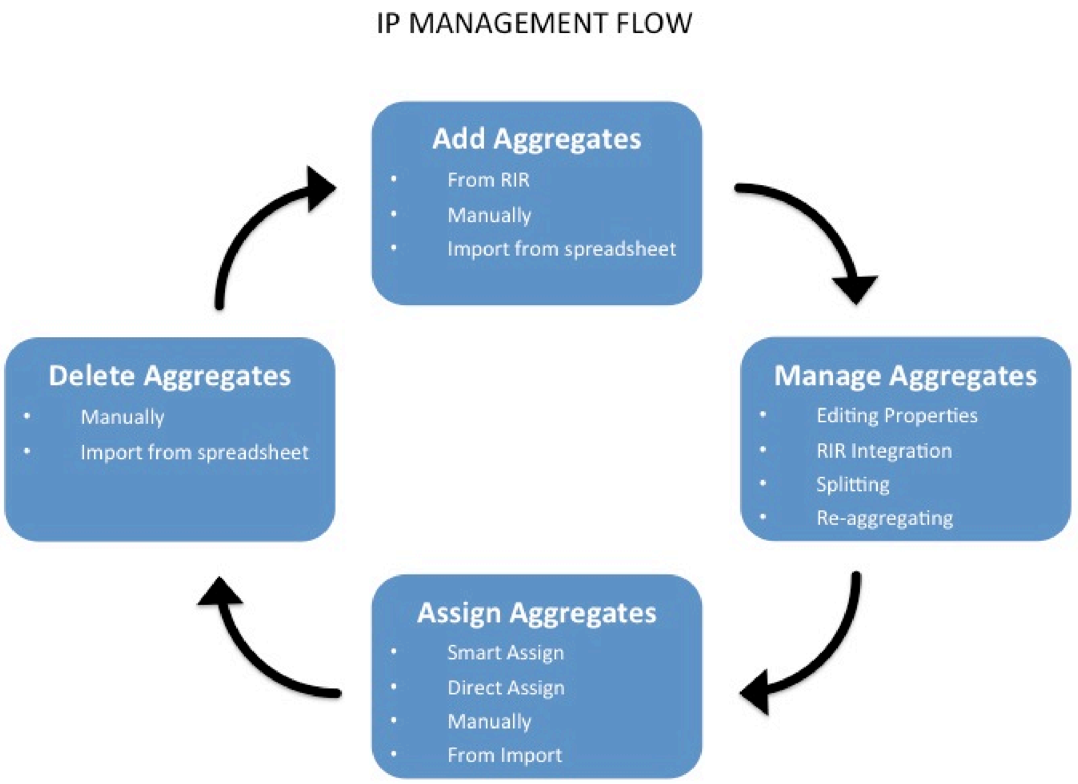
Working with IP Blocks

IPAM Administration

IP Management

IP Management is comprised of four basic functions: adding aggregates into ProVision, managing those aggregate blocks, assigning them to a resource, and deleting the aggregates.

ProVision provides multiple ways for you to achieve each step, depending on your needs. For example, if your organization currently uses spreadsheet data to track aggregates, ProVision provides tools that can import your existing spreadsheets for bulk updates, saving you time. Need to just quickly assign a single IP? Direct Assign will allow you to do so with just a few clicks.



For more information on performing tasks in this IP Management Flow, see the following documentation sections:

Working with IP Blocks

IPAM Administration

Importing Your Data

Import Aggregate Blocks

UI Element Legend

Common Icons

While working in ProVision, you will come across a number of icons regularly used to denote status, or with which you can interact to perform tasks. Here is a brief legend to help orient you to the most common icons you'll encounter.

Interactive Icons:

🔧 Action Menu (Wrench Icon):

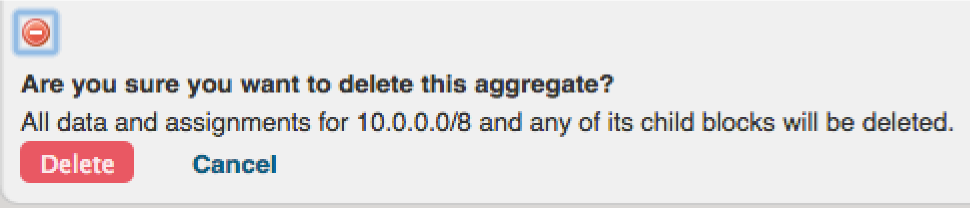
The Action Menu is used throughout ProVision to perform actions on individual items. Clicking on the wrench will bring up a menu of tasks specific to that item, such as "Edit", "View", "Delete", "Reassign", and so on.

⊕ **"Add" Button**

Clicking on the Add button will open a menu to add a new entry to the page, such as adding an aggregate or adding a zone.

⊖ **Red "No Entry" Button**

In its interactive state, the red "No Entry" button may be used in ProVision to delete an entry. Clicking on the button will expand a menu with delete confirmation options.



Are you sure you want to delete this aggregate?

All data and assignments for 10.0.0.0/8 and any of its child blocks will be deleted.

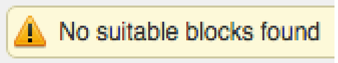
Status Icons:

✓ **Green Check:**

The green check indicates a successful result or enabled option. In Peering, it indicates that the entry is a current Peer.

⚠ **Yellow "Warning" Exclamation:**

Indicates an unsuccessful result followed by a description.



No suitable blocks found

⛔ **Red "No Entry" Button (Status):**

In Peering, the red "No Entry" status indicates a peer that has been marked "Not Qualified".

ProVision User Guide

User Guide

The ProVision User Guide provides information on features accessible in the standard user tabs within ProVision. For more detailed information on features accessible with Admin permissions, see the ProVision Admin Guide.

Table of contents

The Dashboard

The Dashboard

The Dashboard is your first stop when logging into 6connect Provision, giving you a quick graphical status overview as well as convenient links for reference and support.

Overview:

IP Charts:

Illustrates the percentage of assigned vs unassigned hosts for 1918 / IPv4 / IPv6 space out of the total available hosts in ProVision viewable by the user.

Status:

General status information on whether backup is enabled, number of user / admin accounts, ProVision version number, and a 'Coming Soon' link to the future releases roadmap in the the documentation.

Contact Us:

Need help, have a question, or would like to provide suggestions on improvements? Contact us through the provided links.

Resource IP Assignments:

Bar charts illustrating the top 5 Resources that have the most assignments, with the % being the number of assignments for that resource over the total available IPs available in ProVision (that are viewable by the user).

Help and Support:

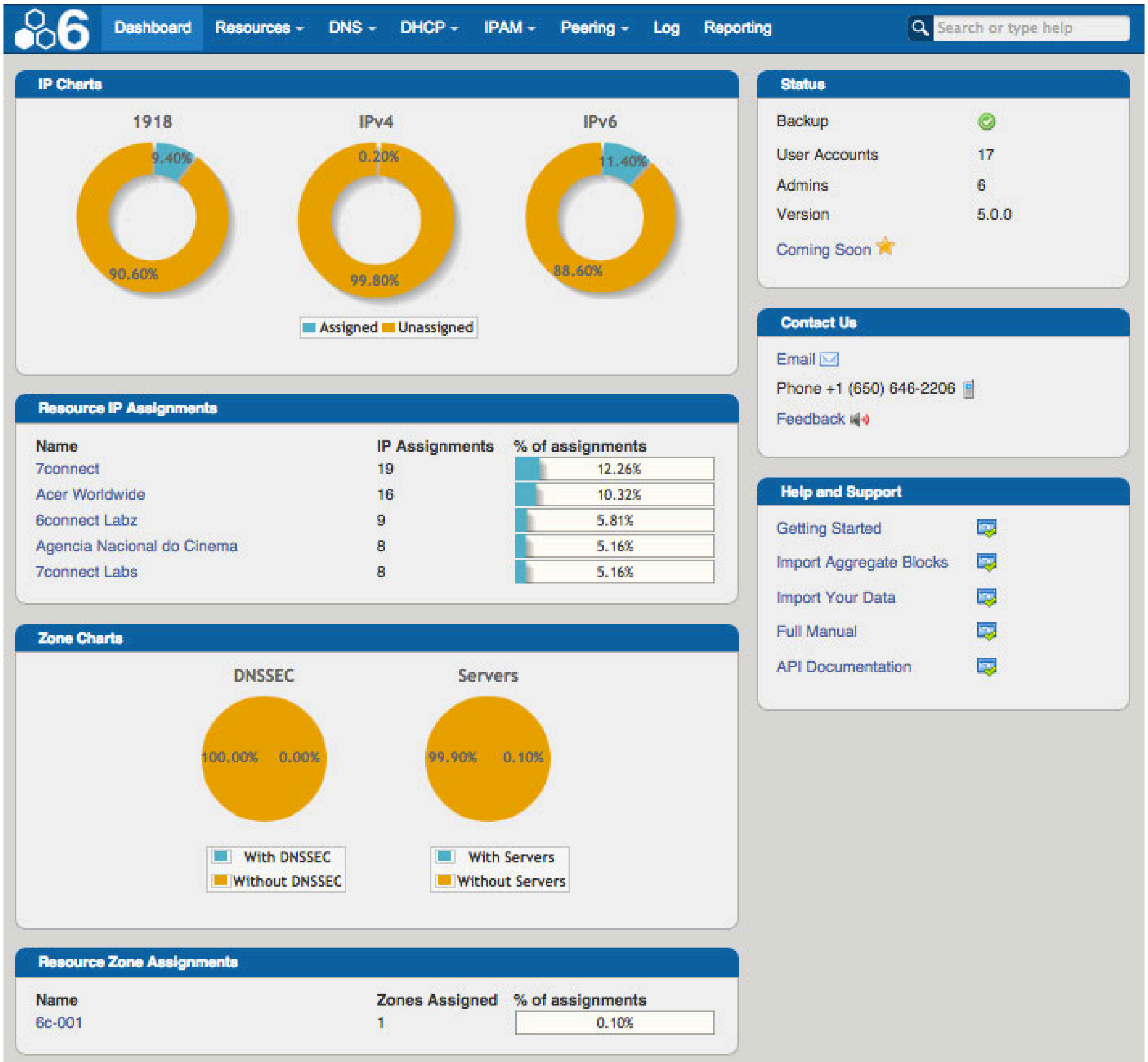
Handy links to commonly referenced documentation sections.

Zone Charts:

Pie charts of Zones with/without DNSSEC, and Zones with/without servers.

Resource Zone Assignments:

Bar charts illustrating the top 5 Zones that have the most assignments, with the % being the number of assignments for that Zone over the total available in ProVision (that are viewable by the user).



Status

Backup	✓
User Accounts	17
Admins	6
Version	5.0.0

Coming Soon ★

Contact Us

Email ✉

Phone +1 (650) 646-2206

Feedback

Help and Support

- Getting Started
- Import Aggregate Blocks
- Import Your Data
- Full Manual
- API Documentation

Resource IP Assignments

Name	IP Assignments	% of assignments
7connect	19	12.26%
Acer Worldwide	16	10.32%
6connect Labz	9	5.81%
Agencia Nacional do Cinema	8	5.16%
7connect Labs	8	5.16%

Resource Zone Assignments

Name	Zones Assigned	% of assignments
6c-001	1	0.10%

Working with Resources

Resources

What is a Resource?

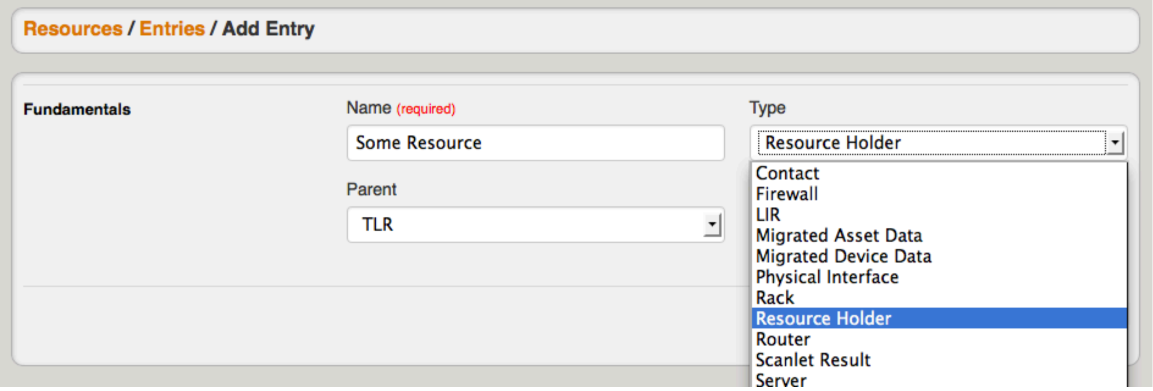
The "Resource" system is tied to the Permissions structure. What this means is that you get granular control on a resource level and can create groups around a single resource or even groups of resources. Since Resources can inherit permissions from others - it can be an easy way to categorize generic objects.

WARNING!
There are key Resources that are used by the System that should not be deleted. We have put in some safeguards in the UI, but the API can delete these resources if prompted. The resources that you should not remove are "Holding" and "Reverse". The "Available" Resource can be renamed - simply not deleted.

How to Work with Resources?

The Resource is an entity that users can assign Network Resources to (IP blocks, hosts, DNS zones, etc.). You can also create hierarchies between resources which allows you to leverage permissions to control who can view and interact with any given resource and its assigned elements. Please note that you can also have Resources that do NOT have anything assigned to them regarding Network Resources. The result of this flexible architecture is that you can work with Resources in three ways:

- **Resource Entries:** These are the actual Resource names. When you click the "Add Entry" button you can customize various elements of the entry and assign the Parent Resource, Type and Category from their respective dropdown menus. This will pull up the field set for the Type and allow you to enter the data for the given Entry.


Resources / Entries / Add Entry

Fundamentals

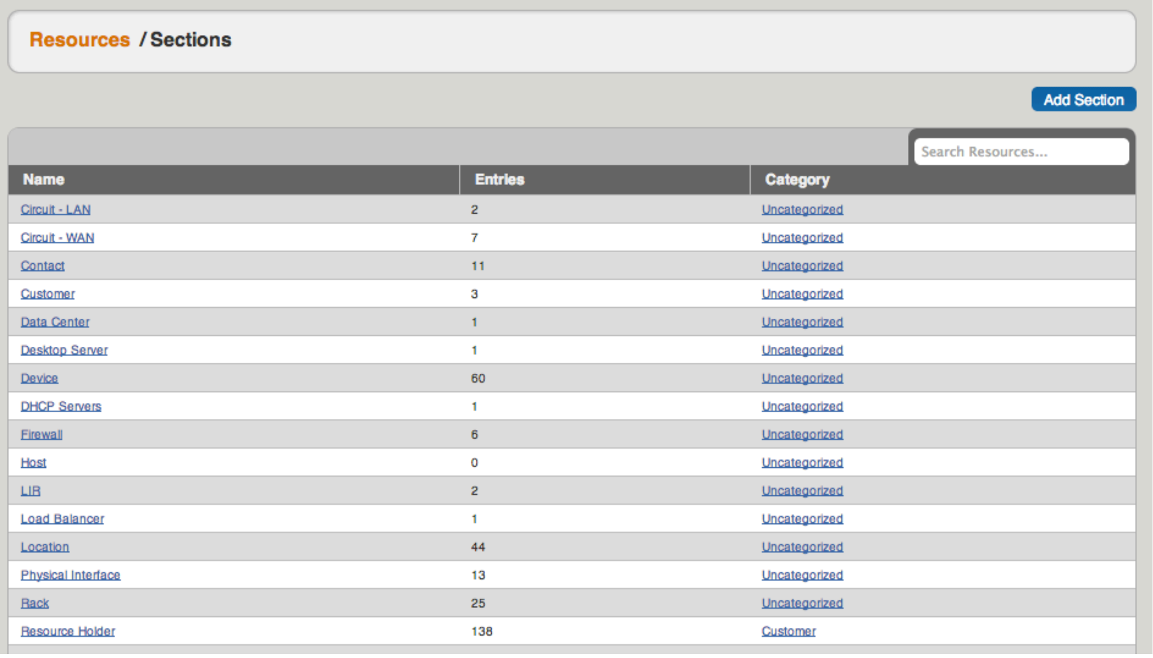
Name (required): Some Resource

Parent: TLR

Type: Resource Holder

- **Resource Sections:** These can be anything from "customers" to "firewalls" to "cross-connects". Since you can customize the fields for these elements, and assign them to a Parent Section, you have flexibility in organizing the data. Check out Customizing Sections and

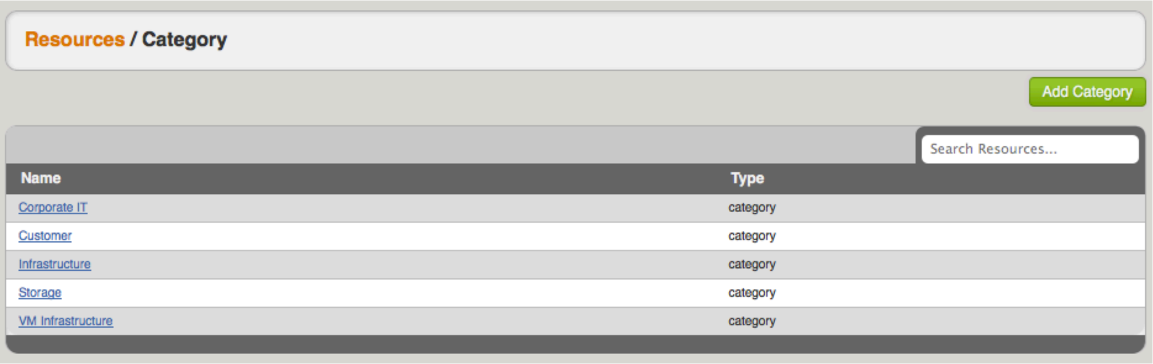
Customizing Fields for more details on how to fit these elements to your business.



Resources / Sections

Name	Entries	Category
Circuit - LAN	2	Uncategorized
Circuit - WAN	7	Uncategorized
Contact	11	Uncategorized
Customer	3	Uncategorized
Data Center	1	Uncategorized
Desktop Server	1	Uncategorized
Device	60	Uncategorized
DHCP Servers	1	Uncategorized
Firewall	6	Uncategorized
Host	0	Uncategorized
LIR	2	Uncategorized
Load Balancer	1	Uncategorized
Location	44	Uncategorized
Physical Interface	13	Uncategorized
Rack	25	Uncategorized
Resource Holder	138	Customer

- **Resource Categories:** Categories can be used to create some filtered views for given Resources and Sections. For example, you can create a Section called "Resource Holder" and then assign a Category "Customer". Then you can view a list of Resources that have been assigned to Category "Customer". In the same way, you could also assign a Section called "Router" under the Parent Resource "Corporate Datacenter" and then assign a Category "Infrastructure".



Resources / Category

Name	Type
Corporate IT	category
Customer	category
Infrastructure	category
Storage	category
VM Infrastructure	category

Want to customize Sections? Check out Customizing Sections and Customizing Fields for more details!

Some examples:

1) Service Provider

2) Managed Service Provider

3) Datacenter/Colocation Provider

4) Enterprise

Learn more about working with Resources through the following links:

- Customizing Sections
- Customizing Fields
- Gadgets
  - XML Specifications

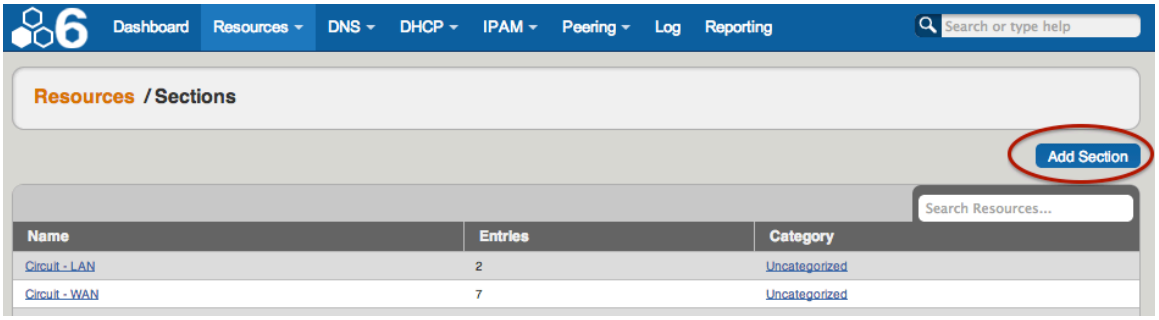
Customizing Sections

Customizing Sections

You can create as many Sections as you wish (Firewall, Server, VM, Virtual Interface, etc.) and customize the fields that you care about for each Section. For example, you may not need to track the console port for your virtual firewall, so you would simply not use that field for the "Virtual Firewall" Section. This way you can still track the console port for your physical firewalls like normal.

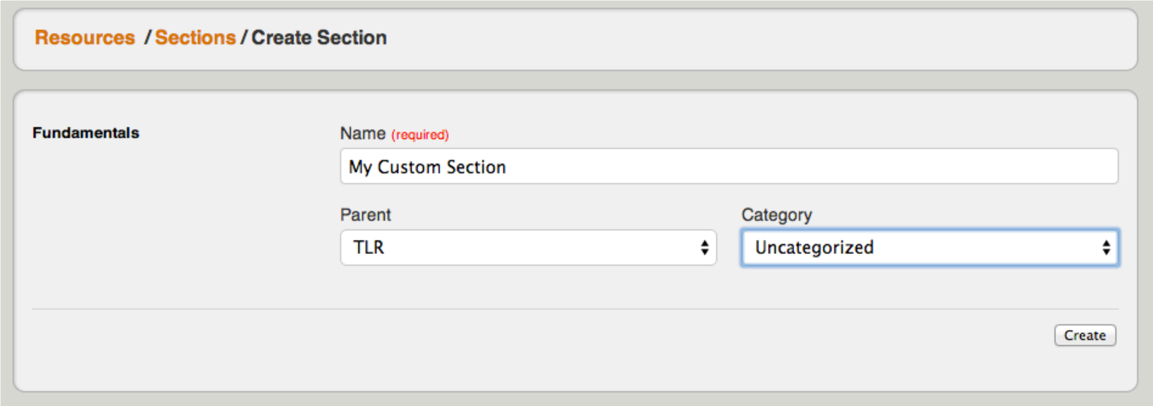
Step 1: Create a New Section

Click "Add Section" from the **Sections** sub-tab under the **Resources** Tab



Name	Entries	Category
Circuit - LAN	2	Uncategorized
Circuit - WAN	7	Uncategorized

Create a new Section by specifying a Name, Parent, and Category



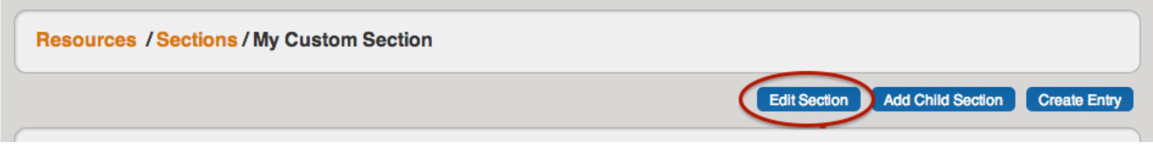
Name (required): My Custom Section

Parent: TLR

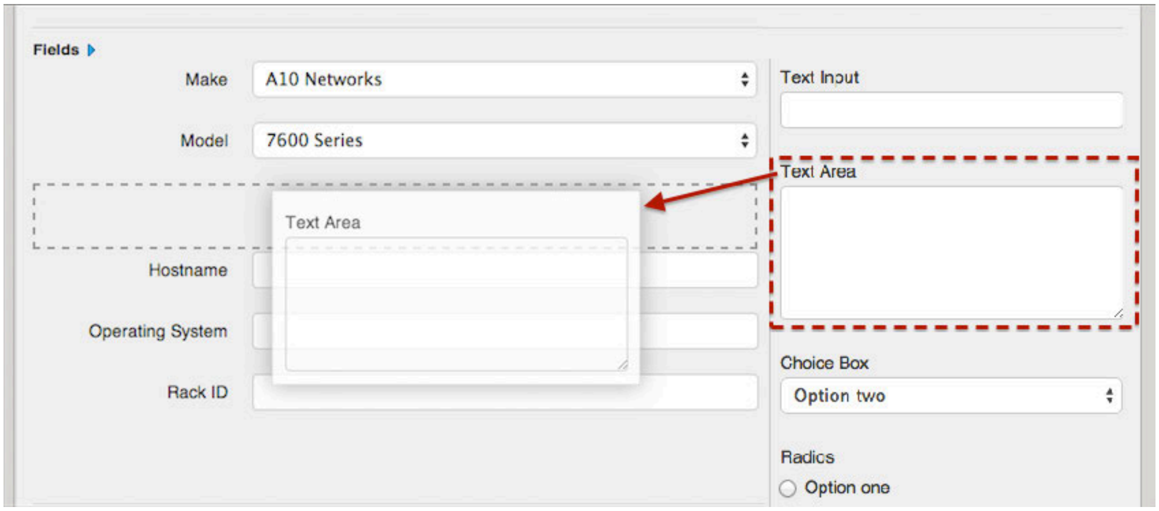
Category: Uncategorized

Step 2: Add a Custom Field to a Section

Manage existing fields and add custom fields for the selected Section by clicking **"**Edit Section"



Add existing or Customizing Fields for your Section. You can add new Customizing Fields of different types (text, dropdown, text area) by dragging and dropping the fields as well as use any existing fields that are available. See the Customizing Fields page for more details.



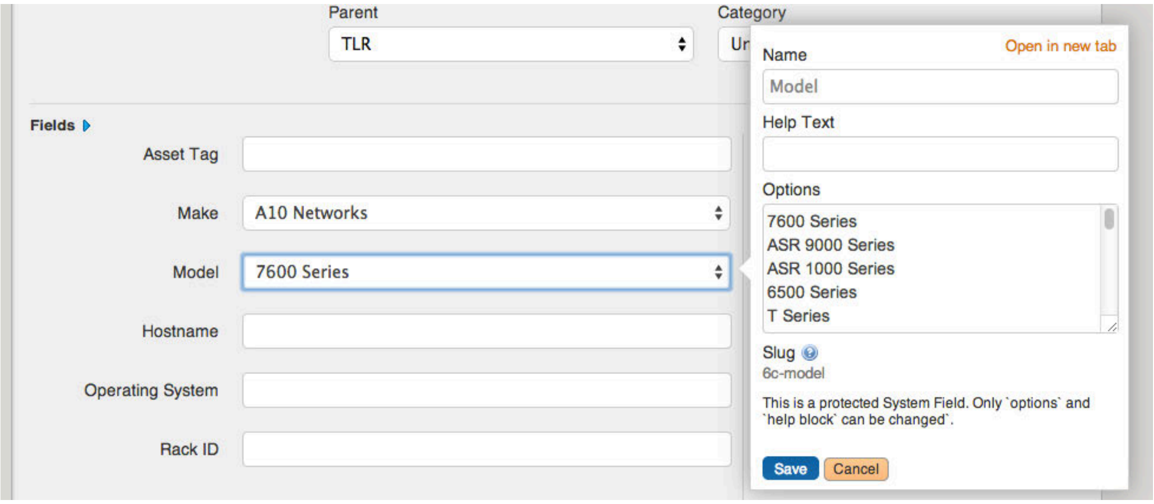
Make: A10 Networks

Model: 7600 Series

Choice Box: Option two

Step 3: Edit Customize Field Data

Select the field name and you will get an editing window to modify the parameters of the field. Custom fields may be renamed and have other attributes updated, whereas protected system fields may have noted restrictions.



Parent: TLR

Make: A10 Networks

Model: 7600 Series

Name: Model

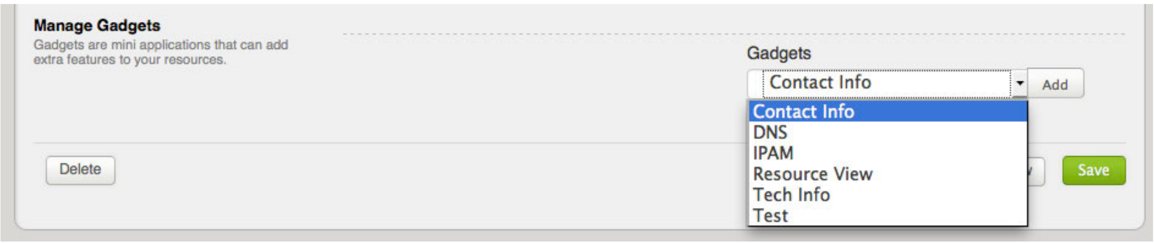
Options:
7600 Series
ASR 9000 Series
ASR 1000 Series
6500 Series
T Series

Slug: 6c-model

This is a protected System Field. Only `options` and `help block` can be changed`.

Step 4: Add Gadgets to your Section

You will notice on this customization screen, you also have an area for Gadgets. Gadgets are areas of additional functionality that can be added to the UI of a given Resource. Simply select the Gadget(s) you want to show for that section, hit "Add", then organize in the order you wish to view. Once added to the Section, Gadgets will be visible for all Resources of that Section.



Gadgets are mini applications that can add extra features to your resources.

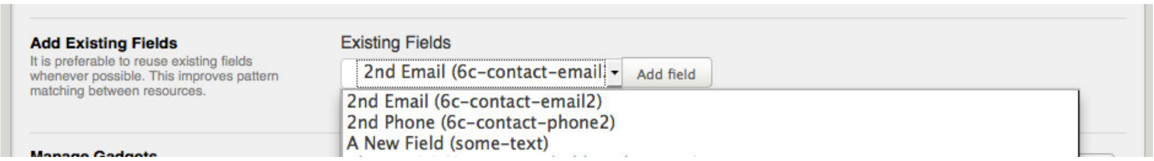
Gadgets: Contact Info

Customizing Fields

Working with Fields

Creating Fields

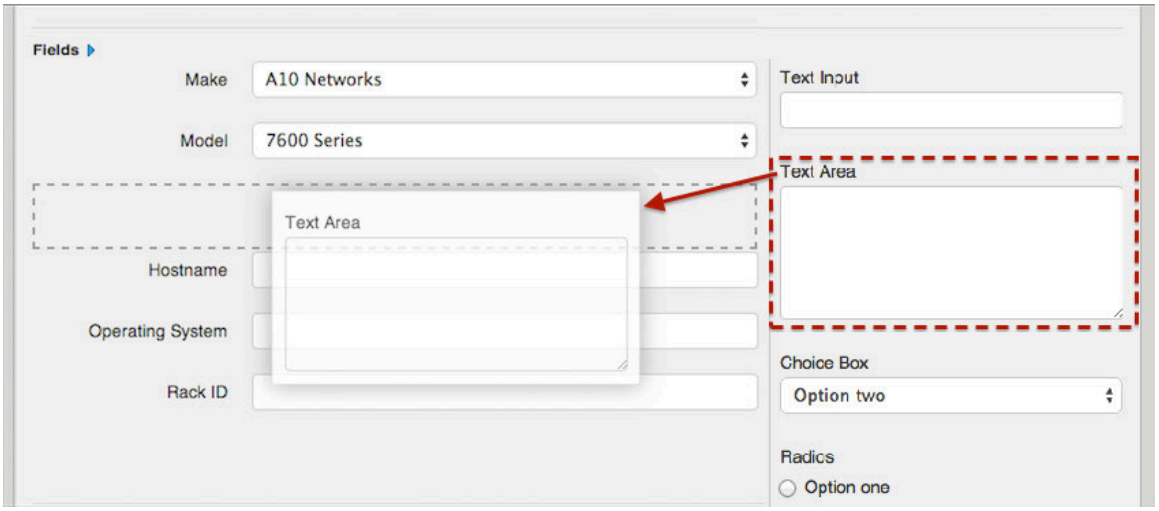
To add an existing field to a Section, select the field name from the dropdown menu and click on the "Add Field" button.



Add Existing Fields
It is preferable to reuse existing fields whenever possible. This improves pattern matching between resources.

Existing Fields: 2nd Email (6c-contact-email
2nd Email (6c-contact-email2)
2nd Phone (6c-contact-phone2)
A New Field (some-text)

To add a new custom field to a Section, simply click on the custom field type name (Text Input, Text Area, Choice Box, etc), then drag the field over to the field list and release in the desired location. Edit the field name and options as described in Editing / Removing Fields.

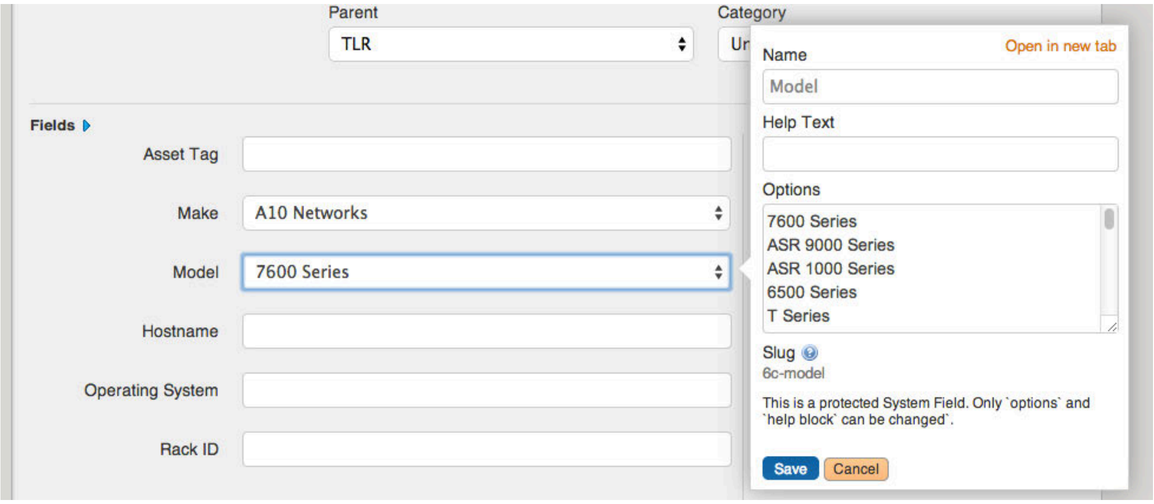


Fields
Make: A10 Networks
Model: 7600 Series
Text Area
Hostname
Operating System
Rack ID

Text Input
Text Area
Choice Box: Option two
Radios: ○ Option one

Editing/Removing Fields

Once fields are added to a Section, you can click on the field name to make additional changes to the fields. Custom fields may be renamed and have other attributes updated, whereas protected System Fields may have noted restrictions.



Parent: TLR
Category: Ur

Fields
Asset Tag
Make: A10 Networks
Model: 7600 Series
Hostname
Operating System
Rack ID

Name: Model
Help Text
Options:
7600 Series
ASR 9000 Series
ASR 1000 Series
6500 Series
T Series
Slug: 6c-model

This is a protected System Field. Only `options` and `help block` can be changed`.

To rearrange the field list order, click and hold on the field name, then drag and drop into the preferred order.

To remove a field, click and hold on the field name, then simply drag and drop the field to the right side of the screen to where the "Remove Field" prompt is visible.

Gadgets

Gadgets

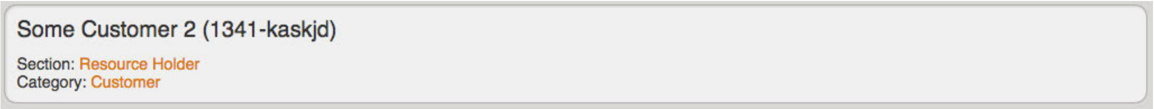
What are Gadgets?

Our gadget system is similar to the Atlassian Gadget system (and Google Gadgets). When creating or editing a Section, gadgets can be added in a way similar to how you would add or remove a field. Gadgets are best described as self contained webapps; widgets but with more power. Gadgets can have their own fields, HTML templates, and even accompanying scripts and stylesheets. They can interface with the API to display simple information such as the Type of the Resource, or they can perform much more complex functions as demonstrated with the IPAM gadget in the following section.

Available Gadgets

Resource View

This visual element is used on the Resource Holder Section type. The Resource view displays and provides links for the Section and Category for the Resource.

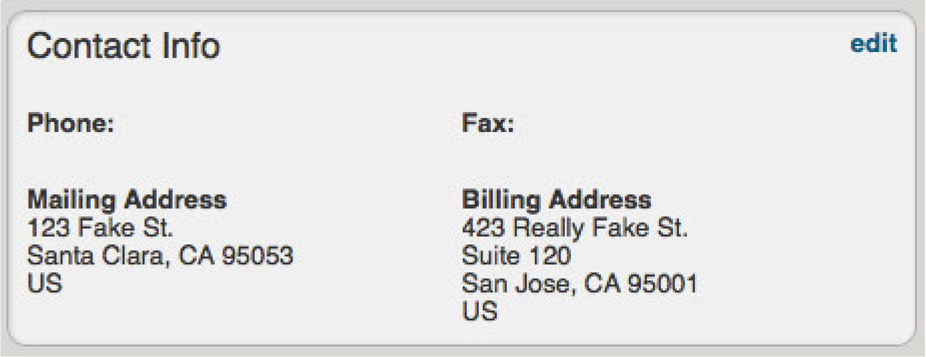


Some Customer 2 (1341-kaskjd)

Section: Resource Holder
Category: Customer

Contact Info

This visual element is used on the Resource Holder Section type. In the Contact Info Gadget, you can track information such as mailing / billing addresses, phone number, and fax number for that Resource.



Contact Info

Phone:

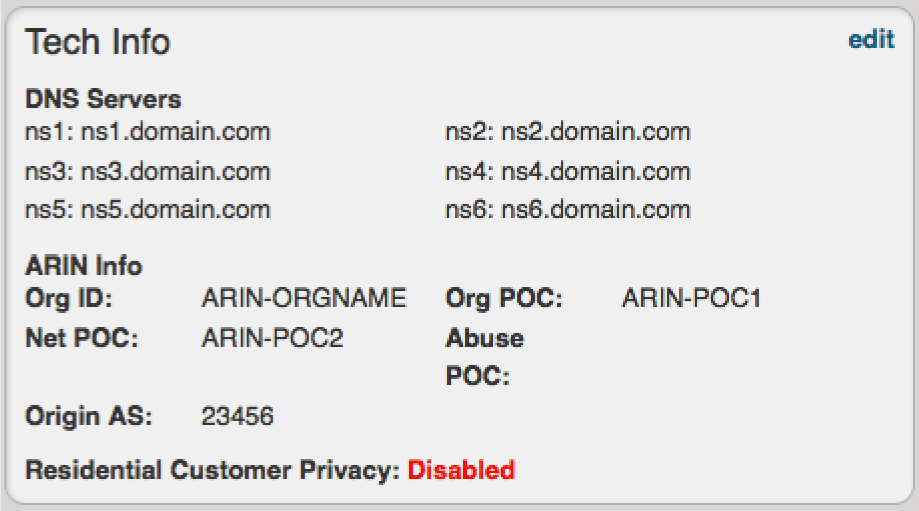
Fax:

Mailing Address
123 Fake St.
Santa Clara, CA 95053
US

Billing Address
423 Really Fake St.
Suite 120
San Jose, CA 95001
US

Tech Info

This visual element is used on the Resource Holder Section type. This Gadget allows you to list DNS servers, ARIN information, and enable/disable customer privacy.



Tech Info

DNS Servers

ns1: ns1.domain.com
ns2: ns2.domain.com
ns3: ns3.domain.com
ns4: ns4.domain.com
ns5: ns5.domain.com
ns6: ns6.domain.com

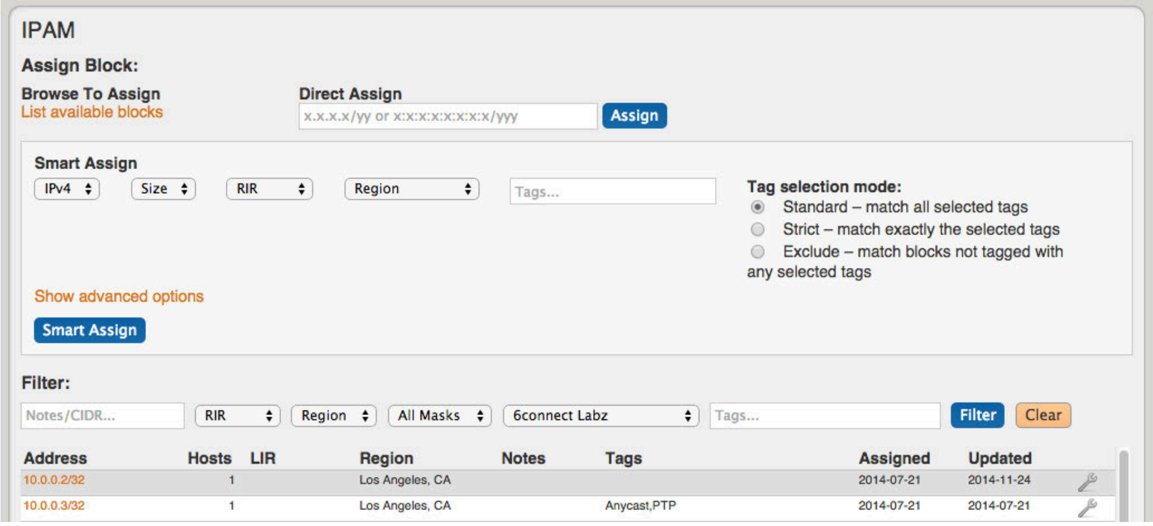
ARIN Info

Org ID: ARIN-ORGNAME
Org POC: ARIN-POC1
Net POC: ARIN-POC2
Abuse POC:
Origin AS: 23456

Residential Customer Privacy: Disabled

IPAM

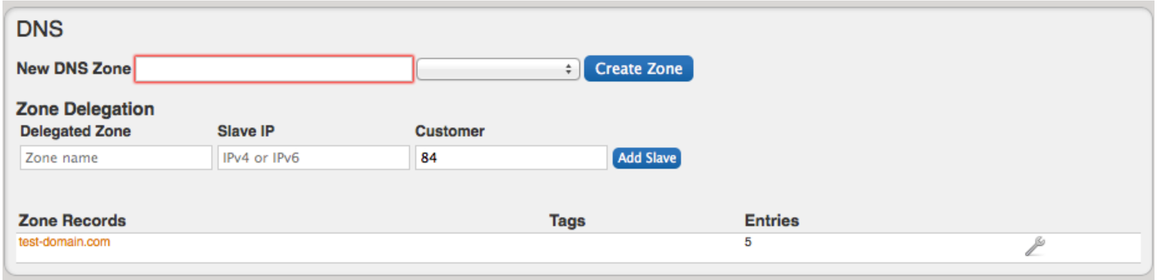
This visual element is used on the Resource Holder Section type. IPAM Gadget allows you to view, assign, and manage blocks for that resource. For more information on assigning and managing blocks, see Working with IP Blocks - Assigning IP Space.



Address	Hosts	LIR	Region	Notes	Tags	Assigned	Updated
10.0.0.2/32	1		Los Angeles, CA			2014-07-21	2014-11-24
10.0.0.3/32	1		Los Angeles, CA		Anycast,PTP	2014-07-21	2014-07-21

DNS

This visual element is used on the Resource Holder Section type. The DNS Gadget allows you to add new Zones as well as view and manage existing zones. For more information on DNS functions and managing zones, refer to the documentation for the DNS Tab.



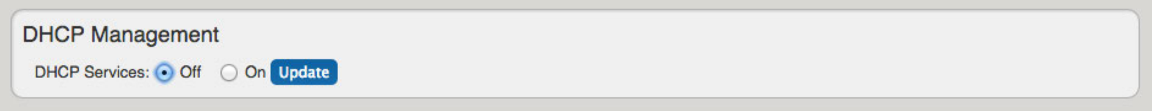
Customer: 84

Zone Records	Tags	Entries
test-domain.com		5

DHCP

This visual element is used on the Server Section type.

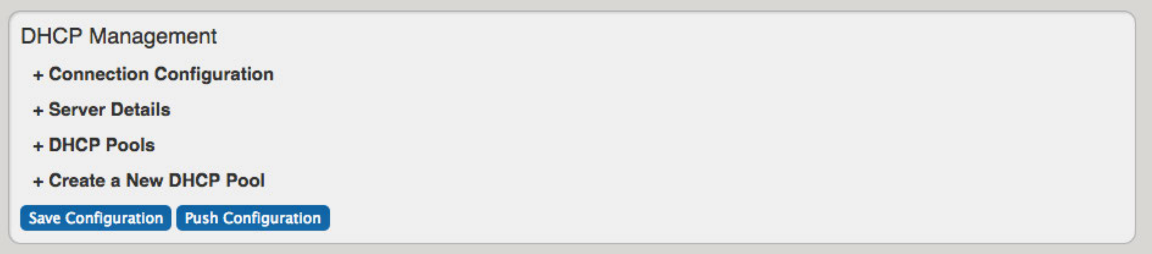
The DHCP Management Gadget in the "Off" configuration:



DHCP Management

DHCP Services: ● Off ○ On

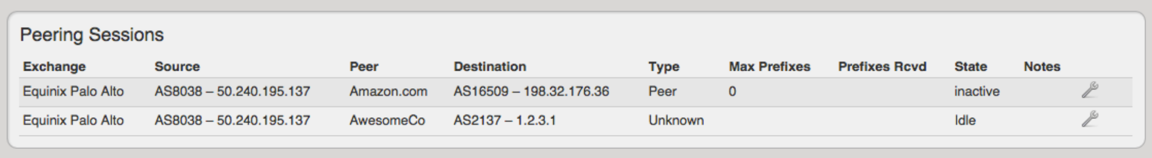
The DHCP Management Gadget in the "On" configuration:



DHCP Management

Peering Session

This visual element is used on the Router Section type. In Peering Sessions Gadget, by clicking on the Action Menu (wrench icon) you can perform basic session edit functions such as Edit, Config Manager, Email, Admin Up/ Down, and Delete. For additional information on Peering, see Peering v2.

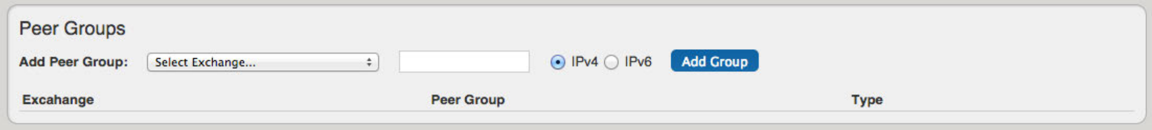


Peering Sessions

Exchange	Source	Peer	Destination	Type	Max Prefixes	Prefixes Rcvd	State	Notes
Equinix Palo Alto	AS8038 – 50.240.195.137	Amazon.com	AS16509 – 198.32.176.36	Peer	0		inactive	
Equinix Palo Alto	AS8038 – 50.240.195.137	AwesomeCo	AS2137 – 1.2.3.1	Unknown			Idle	

Peer Groups

The Peer Group Gadget allows you to add peer groups for IPv4 and IPv6 for a selected exchange from a router's Resource Entry page.



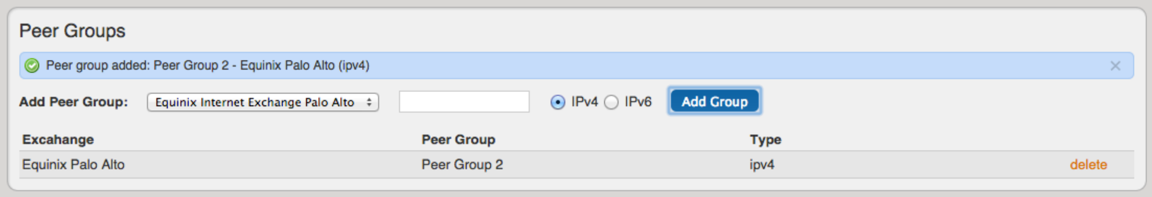
Peer Groups

Add Peer Group: Select Exchange... ● IPv4 ○ IPv6

Excahange	Peer Group	Type

To do this, simply select the exchange, type in a Peer Group name in the text box, select IPv4 or IPv6, the click "Add Group".

Peer Groups added from this gadget will be then be available to select in the "Add Session" dialog box in the **Peering** tab.



Peer Groups

Peer group added: Peer Group 2 - Equinix Palo Alto (ipv4)

Add Peer Group: Equinix Internet Exchange Palo Alto ● IPv4 ○ IPv6

Excahange	Peer Group	Type	
Equinix Palo Alto	Peer Group 2	ipv4	delete

Note

Peer groups listed in the Gadget are for ProVision only and should reflect groups that exist on the router.

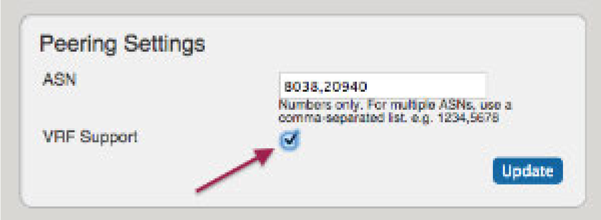
Adding or deleting peer groups from the Gadget will not add or delete them on the router.

For additional information on Peering, see Peering v2.

Peering VRF

The Peering VRF Gadget allows you to add VRFs from a router's Resource Entry page.

Enabling "VRF Support" in the Admin home page under "Peering Settings" will automatically add the VRF gadget to the router Section.



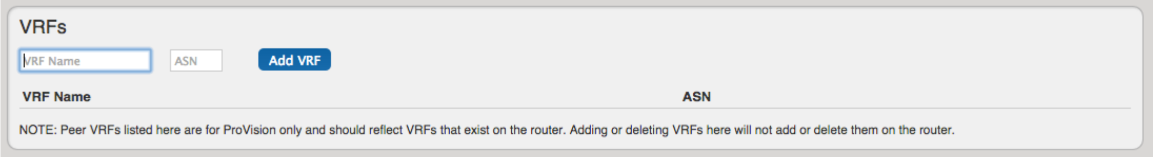
Peering Settings

ASN: 8038,20940

Numbers only. For multiple ASNs, use a comma-separated list. e.g. 1234,5678

VRF Support ☑

The VRF gadget will then be accessible in a router's Resource Entry page.

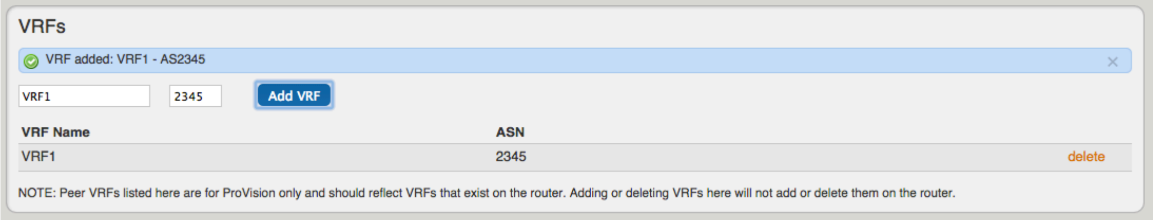


VRFs

VRF Name	ASN

NOTE: Peer VRFs listed here are for ProVision only and should reflect VRFs that exist on the router. Adding or deleting VRFs here will not add or delete them on the router.

To add a VRF, type the VRF name and ASN, the hit "Add VRF".



VRFs

VRF added: VRF1 - AS2345

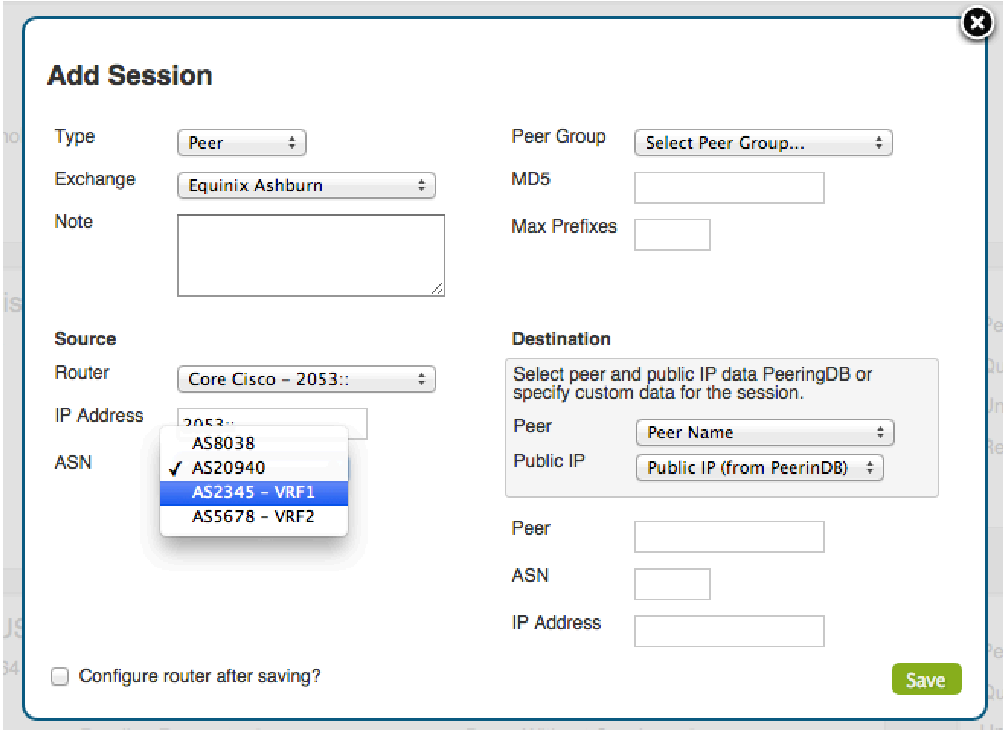
VRF1 2345

VRF Name	ASN	
VRF1	2345	delete

NOTE: Peer VRFs listed here are for ProVision only and should reflect VRFs that exist on the router. Adding or deleting VRFs here will not add or delete them on the router.

To delete a VRF, click on "delete" next to the VRF entry in the gadget.

Once VRFs are set up for a router, the source ASNs for the associated VRFs will appear in the Source ASN dropdown when adding or editing a session for that router from the **Peering** tab.



Add Session

Type: Peer

Exchange: Equinix Ashburn

Note

Peer Group: Select Peer Group...

MD5

Max Prefixes

Source

Router: Core Cisco - 2053::

IP Address: 2053::

ASN:
- AS8038
- ✓ AS20940
- AS2345 - VRF1
- AS5678 - VRF2

Destination

Select peer and public IP data PeeringDB or specify custom data for the session.

Peer: Peer Name

Public IP: Public IP (from PeerinDB)

Peer

ASN

IP Address

☐ Configure router after saving?

⚠ Peering VRF currently only supports Cisco routers.

Creating your own Gadgets

6connect provides XML specifications for users interested in creating their own gadgets for ProVision. See the XML Specifications section linked below for more information.

> ⓘ User created gadgets are not supported at this time and the specification below could change without notice. If you want to make your own gadget, please get in touch so we can help you

- XML Specifications

XML Specifications

XML Specifications

THIS IS AN EXPERIMENTAL FEATURE

User created gadgets are not supported at this time and the specification below could change without notice. If you want to make your own gadget, please get in touch so we can help you.

XML Specification

The XML gadget specification is based on the Atlassian Gadgets.

Implemented Tags

The implemented tags and corresponding attributes are:

- ModulePrefs
  Description
    - title
    - width - "full" or "half" are the only options for now
- ContentSources
    - type - "file" uses the file given in src, "html" uses the content in the tag (eg. <Content type="html">This is the content</Content>)
    - src - relative filename or url
- Source
  Fields
    - type - "css" or "javascript"
    - src - relative filename or url
- Field
    - slug

Example

```
<?xml version="1.0" encoding="UTF-8" ?>
<Module>
    <ModulePrefs title="Contact Info" width="half" />
    <Description>This gadget adds a field editor for fields related to contact info
(phone, address, ect).</Description>
    <Content type="file" src="template.html" />
    <Sources>
       <Source type="javascript" src="script.js" />
    </Sources>
    <Fields>
       <Field slug="6c-resourceholder-phone-main" />
       <Field slug="6c-resourceholder-phone-fax" />
    </Fields>
</Module>
```

Fields

If a gadget uses fields, you can optionally add the slug of the field in this section to hide it from the main field list.

This can be very useful and make your Resource Types easier to work with. If the fields are not hidden, this can lead to long lists of redundant data in multiple places and can cause confusion. However, all viewing and editing of the field will have to be done through the gadget. If your gadget uses a field in a read-only manner, then you should **not** add it to the gadget's manifest because that would prevent users from editing the field data through the standard edit page.

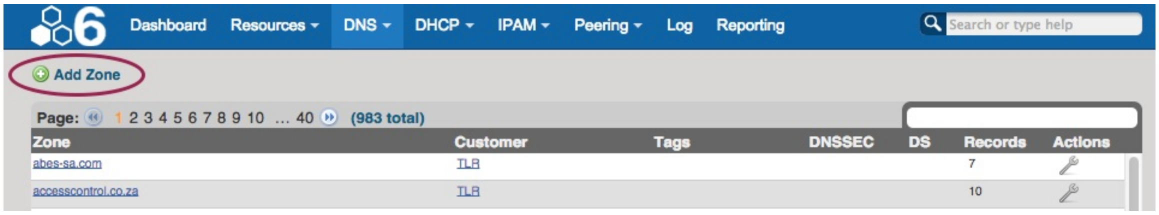
DNS Tab

DNS

The DNS tab allows you to add new Zones as well as view and manage existing zones.

Navigating to the DNS Tab

Clicking on the main DNS Tab, then on "Add Zone" will bring up the following UI.

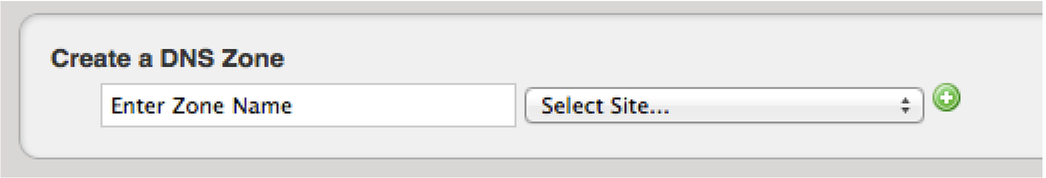


Page: 1 2 3 4 5 6 7 8 9 10 … 40 (983 total)

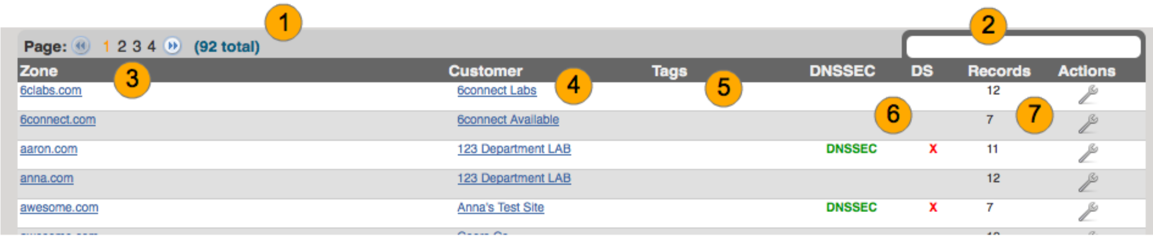
Zone	Customer	Tags	DNSSEC	DS	Records	Actions
abes-sa.com	TLB				7	
accesscontrol.co.za	TLB				10	

Creating/Adding Zones

To create a zone, enter the name of the zone and select the Resource you want to assign the zone to. Click on the green plus sign to be taken to the newly created zone file. There you can edit the zone, assign views, etc.



DNS Tab User Interface



Page: 1 2 3 4 (92 total)

Zone	Customer	Tags	DNSSEC	DS	Records	Actions
6clabs.com	6connect Labs				12	
6connect.com	6connect Available				7	
aaron.com	123 Department LAB		DNSSEC	X	11	
anna.com	123 Department LAB				12	
awesome.com	Anna's Test Site		DNSSEC	X	7	

1) **Paging** - this allows for easier browsing of large lists of DNS zones

2) **Filtering** - this text box allows the user to enter in criteria to filter the list of zones

3) The **Zone** list is a click-able list of zone names - if clicked, the user will be directed to the DNS zone editing page

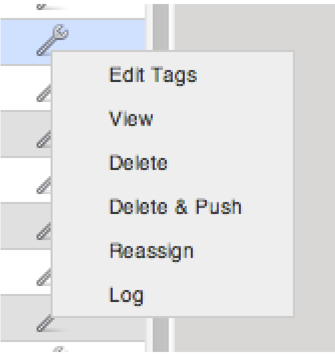
4) The **Customer** list is a click-able list of Resource names that the zone is assigned to

5) The **Tags** column lists the tags associated with the zone

6) The **DNSSEC** column will show green if the zone has been signed and pushed successfully, the "X" column will provide a status to acknowledge that the zone was verified by an authenticated DNS server

7) The **Records** value is the number of zone records in the given zone

DNS Zone Action Menu



The Action menu provides a list of options that the user can select for any given zone.

1) **Edit Tags:** This allows to assign tag values to a zone for easier filtering. This a free form field and not the same as the IPAM Tags

2) **View:** Brings you to the View/Edit screen for the zone

3) **Delete:** Deletes the zone from ProVision and removes the entry in ProVision conf file on the remote server(s) (the user will also receive a prompt to confirm they wish to complete the action)

4) **Delete & Push**: Deleted the zone from ProVision, removes the entry in ProVision conf file on the remote server(s) **AND** deletes the individual zone file from the remote server(s) (the user will also receive a prompt to confirm they wish to complete the action)

5) **Reassign:** Brings up a screen to assign the zone to a new Resource

6) **Log:** Brings the user to the Log Tab with the results filtered for the specific zone

Editing DNS Zones

Editing a Zone Record

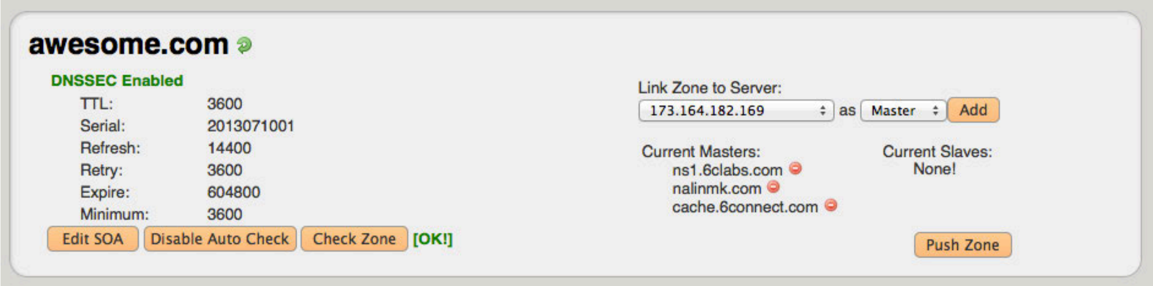
There are two ways to edit a DNS zone:

1. Click on the "Edit Zone" icon. This will take you directly to the Zone Editing screen.
2. Click on the zone name. At the Zone Detail View screen, you can click on the "Edit this zone" hyperlink.

1) Zone Management:

This area is at the top of the screen and provides direct access to confirm zone file changes. By clicking the "Check Zone" button, we automatically confirm that your zone is verified and highlight any problem entries. Once verified, you have the option to Push the Zone to the specified server(s) selected.

***Note: When zones are written the serial number is incremented and DNSSEC refreshed (if enabled)**



awesome.com

DNSSEC Enabled

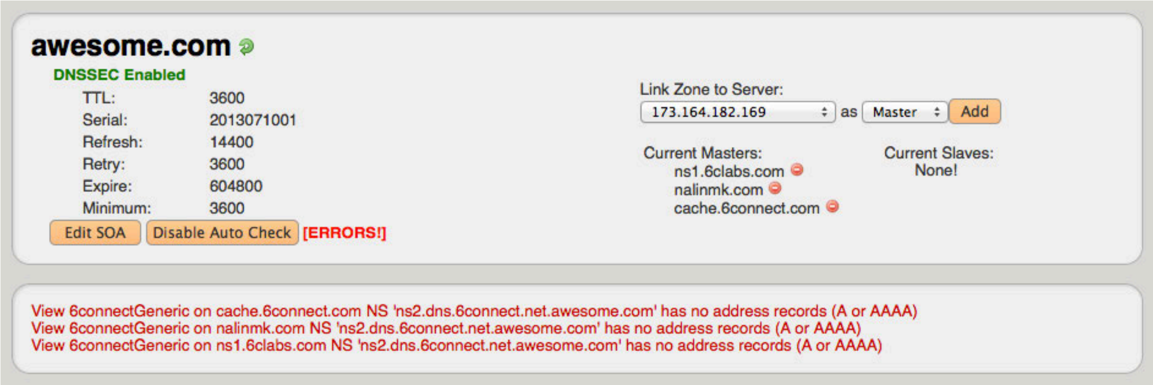
TTL: 3600
Serial: 2013071001
Refresh: 14400
Retry: 3600
Expire: 604800
Minimum: 3600

Link Zone to Server: 173.164.182.169 as Master

Current Masters:
ns1.6clabs.com
nalinmk.com
cache.6connect.com

Current Slaves:
None!

Figure 1: Normal zone with no errors



awesome.com

DNSSEC Enabled

TTL: 3600
Serial: 2013071001
Refresh: 14400
Retry: 3600
Expire: 604800
Minimum: 3600

Link Zone to Server: 173.164.182.169 as Master

Current Masters:
ns1.6clabs.com
nalinmk.com
cache.6connect.com

Current Slaves:
None!

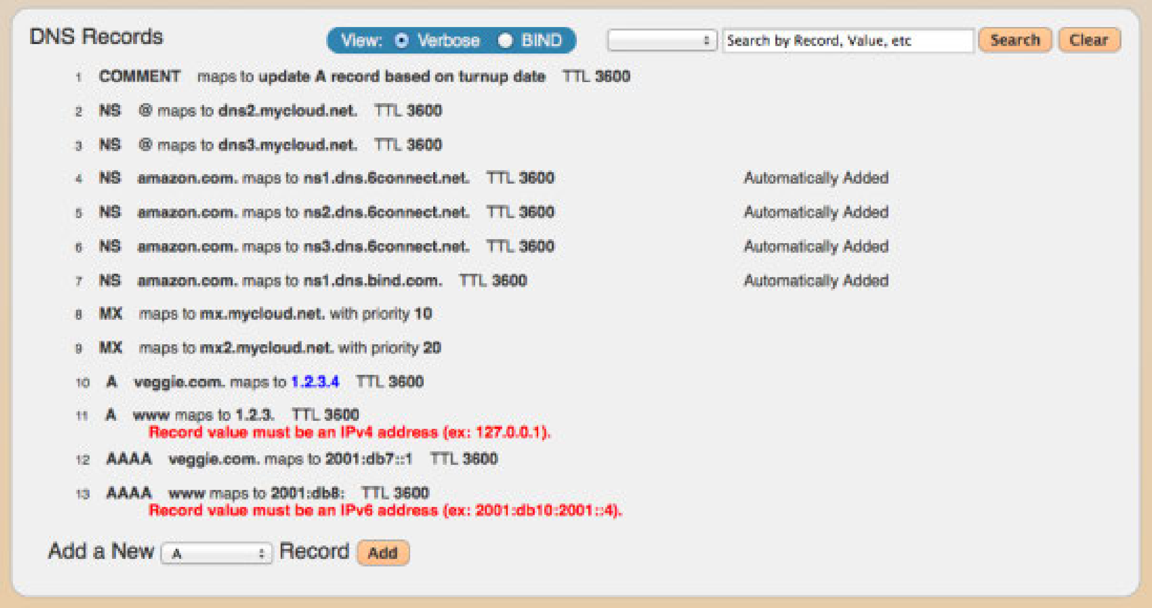
View 6connectGeneric on cache.6connect.com NS 'ns2.dns.6connect.net.awesome.com' has no address records (A or AAAA)
View 6connectGeneric on nalinmk.com NS 'ns2.dns.6connect.net.awesome.com' has no address records (A or AAAA)
View 6connectGeneric on ns1.6clabs.com NS 'ns2.dns.6connect.net.awesome.com' has no address records (A or AAAA)

Figure 2: Zone with Errors

If errors are detected, the relevant zone record entries will be highlighted to show the error condition and the user will be prompted to fix them before being able to push the zone. The validation is for RFC compliance.

2) DNS Zone Record Data:

You have two modes for viewing/editing Zone Record Data. The **Verbose** view and a **BIND** view allow for varying levels of comfort with DNS editing tools. The **Search** window also allows the user to filter the list by using multiple parameters.



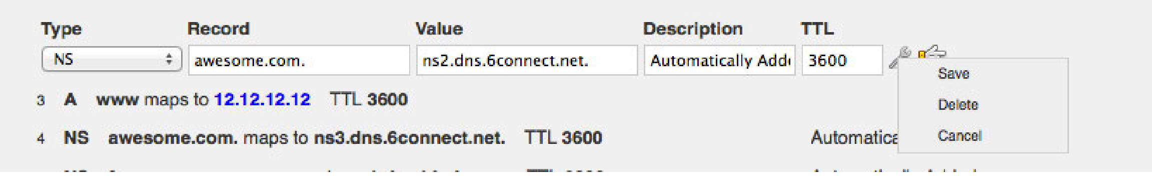
1 COMMENT maps to **update A record based on turnup date** TTL **3600**
2 NS @ maps to **dns2.mycloud.net.** TTL **3600**
3 NS @ maps to **dns3.mycloud.net.** TTL **3600**
4 NS **amazon.com.** maps to **ns1.dns.6connect.net.** TTL **3600** Automatically Added
5 NS **amazon.com.** maps to **ns2.dns.6connect.net.** TTL **3600** Automatically Added
6 NS **amazon.com.** maps to **ns3.dns.6connect.net.** TTL **3600** Automatically Added
7 NS **amazon.com.** maps to **ns1.dns.bind.com.** TTL **3600** Automatically Added
8 MX maps to **mx.mycloud.net.** with priority **10**
9 MX maps to **mx2.mycloud.net.** with priority **20**
10 A **veggie.com.** maps to **1.2.3.4** TTL **3600**
11 A **www** maps to **1.2.3.** TTL **3600**
Record value must be an IPv4 address (ex: 127.0.0.1).
12 AAAA **veggie.com.** maps to **2001:db7::1** TTL **3600**
13 AAAA **www** maps to **2001:db8:** TTL **3600**
Record value must be an IPv6 address (ex: 2001:db10:2001::4).

To Edit a Zone Record, simply double-click on it the entry and make any required edits. Use the "Wrench" icon for the action context menu to:

1) **Save** your changes to the zone records

2) **Delete** the zone record

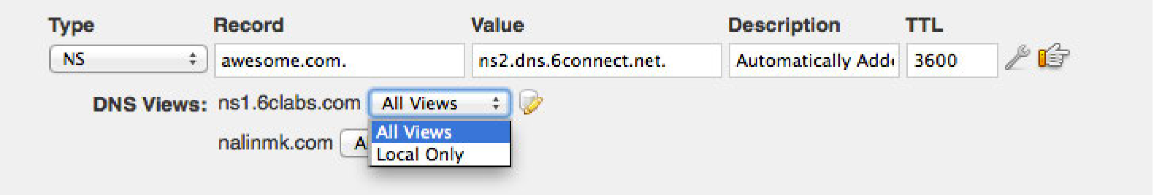
3) **Cancel** your edits to the zone record



Type	Record	Value	Description	TTL
NS	awesome.com.	ns2.dns.6connect.net.	Automatically Add	3600

3 A **www** maps to **12.12.12.12** TTL **3600**
4 NS **awesome.com.** maps to **ns3.dns.6connect.net.** TTL **3600** Automatica

Configuring Views per DNS Zone
If Views are enabled on the DNS server assigned to this zone, you will also have the "Glove" icon that will bring up a view assignment menu. You will be able to select the View(s) that you wish to apply to the zone record here.



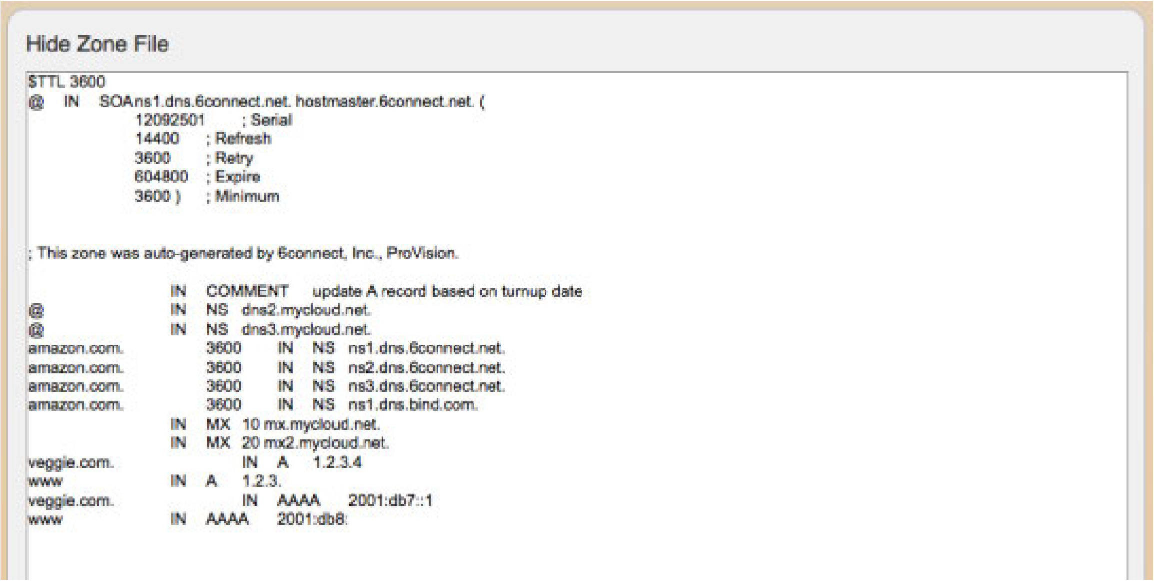
Type	Record	Value	Description	TTL
NS	awesome.com.	ns2.dns.6connect.net.	Automatically Add	3600

DNS Views: ns1.6clabs.com All Views
nalinmk.com A

For more information on setting up Split Horizon/Views support - go here.

3) Show DNS Zone:

This view gives you a "CLI type" view of the zone file. If views are enabled, you will see those zone files as well. Please note that this is a read only screen.



Hide Zone File

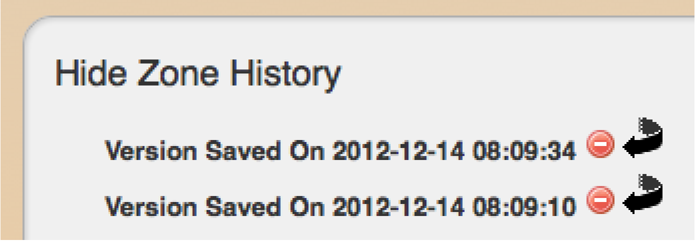
```
$TTL 3600
@    IN    SOAns1.dns.6connect.net. hostmaster.6connect.net. (
                 12092501       ; Serial
                 14400      ; Refresh
                 3600       ; Retry
                 604800     ; Expire
                 3600 )     ; Minimum


; This zone was auto-generated by 6connect, Inc., ProVision.

                      IN    COMMENT    update A record based on turnup date
@                     IN    NS   dns2.mycloud.net.
@                     IN    NS   dns3.mycloud.net.
amazon.com.                 3600     IN    NS   ns1.dns.6connect.net.
amazon.com.                 3600     IN    NS   ns2.dns.6connect.net.
amazon.com.                 3600     IN    NS   ns3.dns.6connect.net.
amazon.com.                 3600     IN    NS   ns1.dns.bind.com.
                      IN    MX   10 mx.mycloud.net.
                      IN    MX   20 mx2.mycloud.net.
veggie.com.                      IN    A     1.2.3.4
www                   IN    A     1.2.3.
veggie.com.                      IN    AAAA     2001:db7::1
www                   IN    AAAA     2001:db8:
```

4) Show DS Records:

This section displays the DS keys generated for the particular zone.

5) Show Zone History:

The feature allows you to revert/reload previous zone versions. Note that the zone has to actually be pushed for the Zone History area to show up on the screen.



Hide Zone History

Version Saved On 2012-12-14 08:09:34

Version Saved On 2012-12-14 08:09:10

DHCP Tab

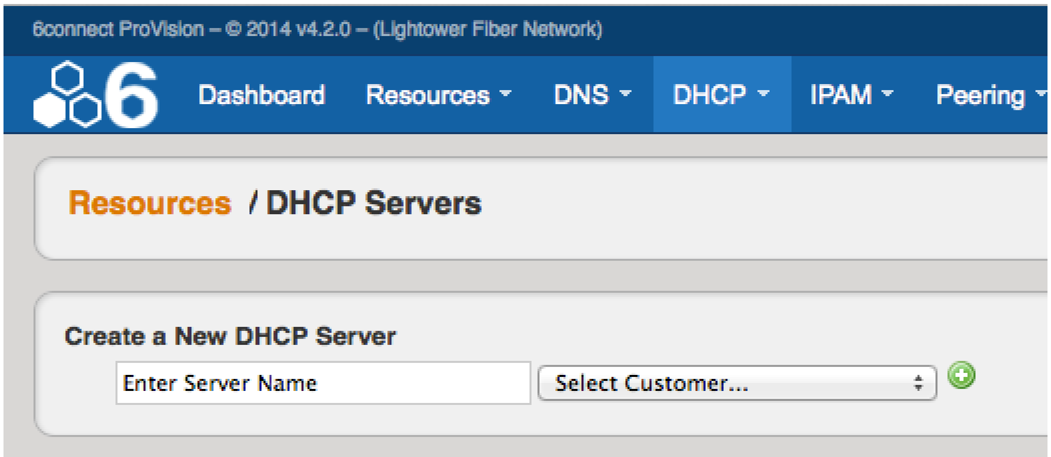
DHCP

- DHCP
    - Adding DHCP Servers
    - Defining DHCP Scopes
    - Managing DHCP Server Configurations
        - Connection Configuration
        - Server Details
        - DHCP Pools
        - Create a New DHCP Pool - Subnets
        - Create a New DHCP Pool - Host
        - Saving/Pushing DHCP Server Configurations
    - Permissions

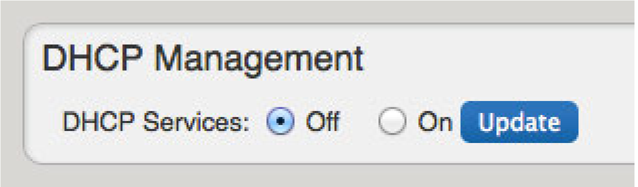
Adding DHCP Servers

DHCP Server Configuration is tied into the Resource Manager. To add a DHCP Server to ProVision, you can use the "Create a New DHCP Server" dialog area from the **DHCP** Tab.

Type the server name, then under "Select Customer", choose the resource to which the DHCP server belongs. This creates a hierarchical relationship, with the server as a child resource under the selected parent.



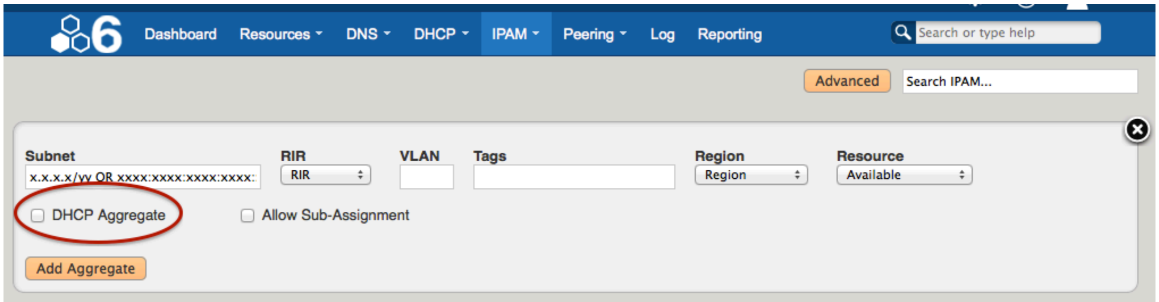
If the DHCP Gadget is attached to the Resource Section, you can also use the DHCP toggle function to enable this functionality.



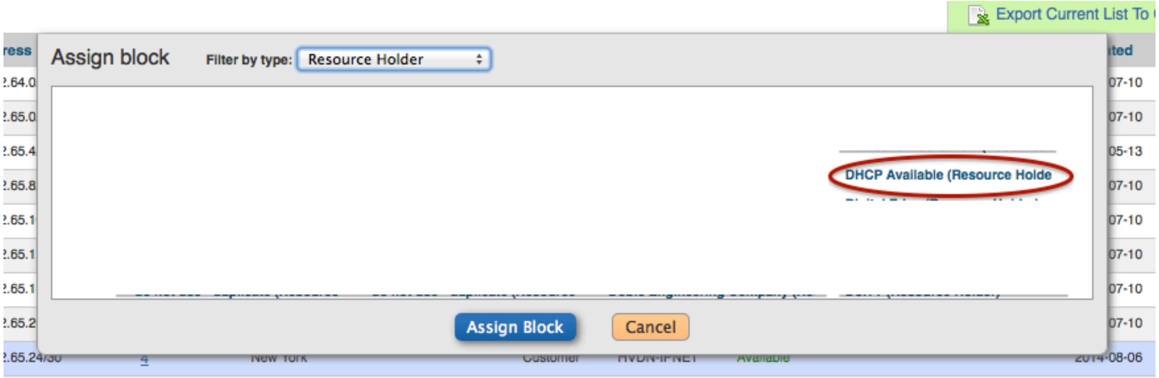
Defining DHCP Scopes

In order to use DHCP functions and add DHCP Pools, the IP blocks need to be defined in the IPAM section by using "Add Aggregate" to create a DHCP specific aggregate.

Under the **IPAM** tab, select "Add Aggregate", fill in the aggregate information, and select the "DHCP Aggregate" checkbox option as outlined below. This will ensure the block is automatically added to the DHCP Available Resource, and thus usable when building DHCP Server Configurations and defining DHCP Pools.



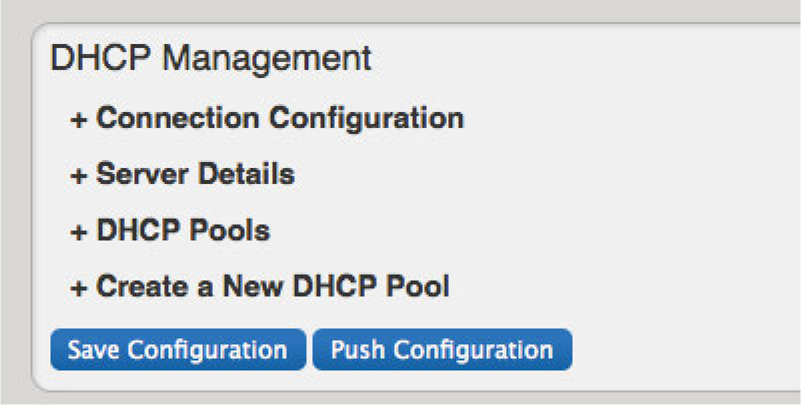
If you would like to use an existing aggregate or part of an existing aggregate, you simply need to "assign" the block (via the Action Menu) to the Resource Holder "DHCP Available" as shown below.



Once the IP block is assigned to DHCP Available, it will be available to assign to a DHCP Pool via the DHCP Gadget.

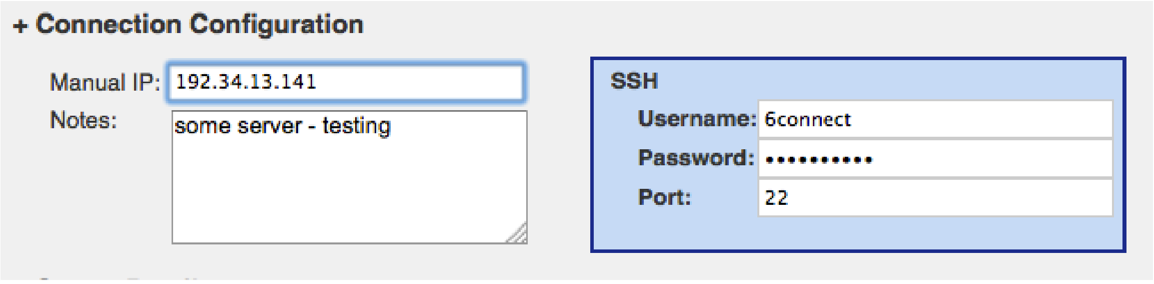
Managing DHCP Server Configurations

Once DHCP functions are enabled for a Resource Section, you will be able to manage configurations per Resource as expected by expanding the relevant areas.



Connection Configuration

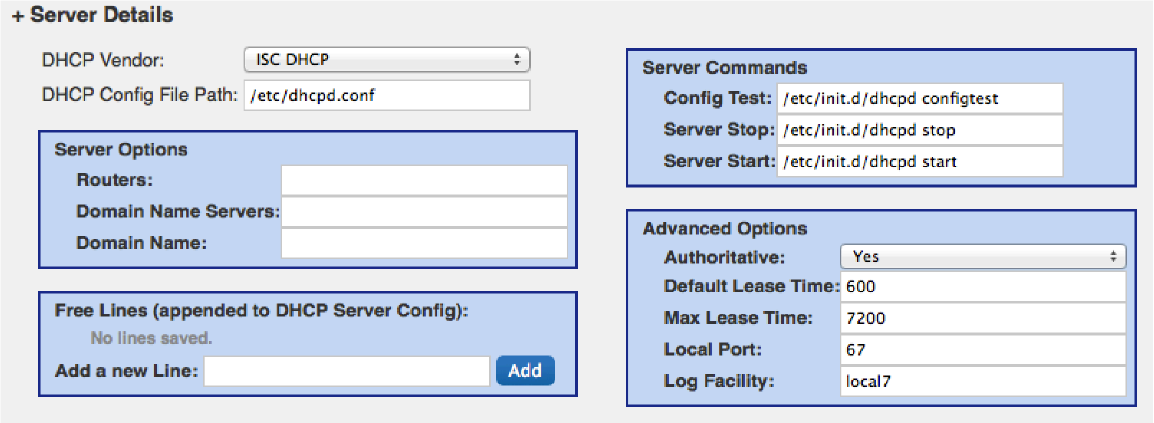
In this gadget area, this is where you enter in the information that will be used for ProVision to communicate to the DHCP Server.



Manual IP: 192.34.13.141
Notes: some server - testing
Username: 6connect
Password: ••••••••••
Port: 22

Server Details

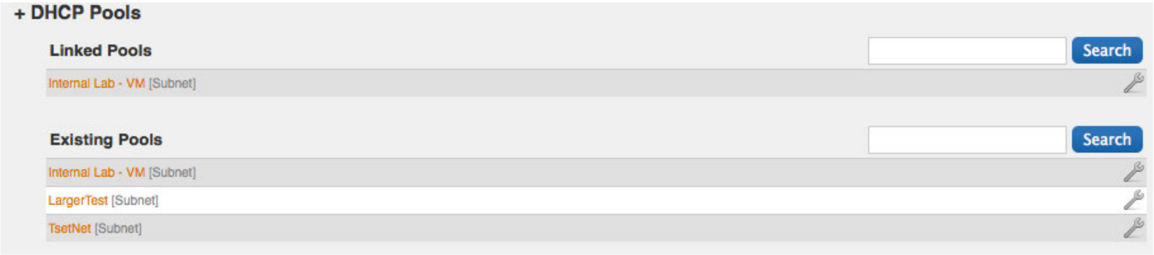
Server details and advanced options may be entered under this portion of the gadget.



DHCP Vendor: ISC DHCP
DHCP Config File Path: /etc/dhcpd.conf
Routers:
Domain Name Servers:
Domain Name:
Free Lines (appended to DHCP Server Config):
No lines saved.
Add a new Line:
Config Test: /etc/init.d/dhcpd configtest
Server Stop: /etc/init.d/dhcpd stop
Server Start: /etc/init.d/dhcpd start
Authoritative: Yes
Default Lease Time: 600
Max Lease Time: 7200
Local Port: 67
Log Facility: local7

DHCP Pools

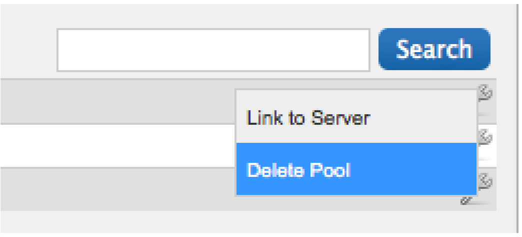
In this area, the admin can specify what DHCP Pools are linked to the DHCP server. This includes any host reservations as well as DHCP Pools as defined in the next section.



Linked Pools
Internal Lab - VM [Subnet]

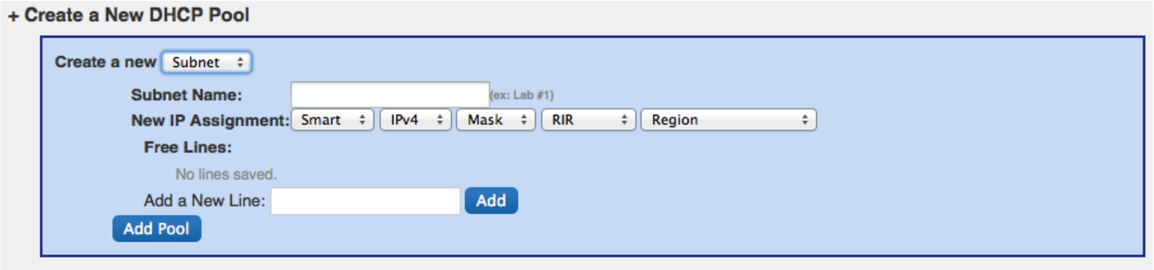
Existing Pools
Internal Lab - VM [Subnet]
LargerTest [Subnet]
TsetNet [Subnet]

Use the Action menu to make changes to Linked or Existing Pools.



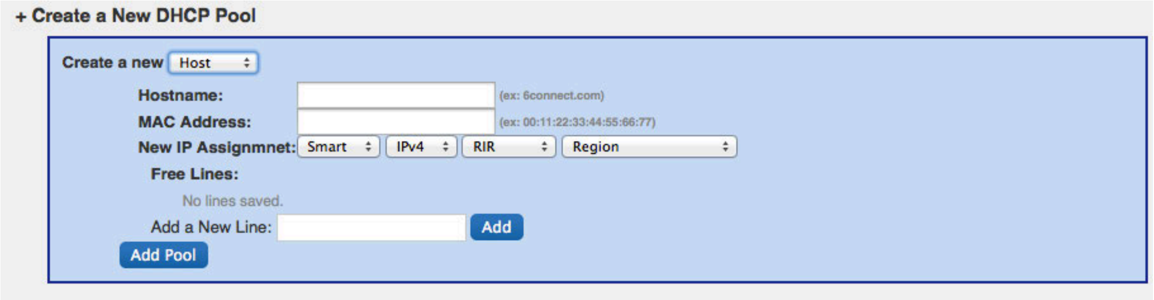
Create a New DHCP Pool - Subnets

When Assigning a Subnet (via dropdown) the IP Assignment selection will pull the data from the DHCP Available blocks that you defined earlier. You can use either a Smart or Direct assignment depending on your preference.



Create a New DHCP Pool - Host

When reserving Hostname/MAC data, change the Dropdown to "Host". This will also give you an option to assign from an existing DHCP block, or a specific IP address.



Saving/Pushing DHCP Server Configurations

It is recommended that you save your configuration after changes. When you Push a Configuration the configuration is automatically saved.

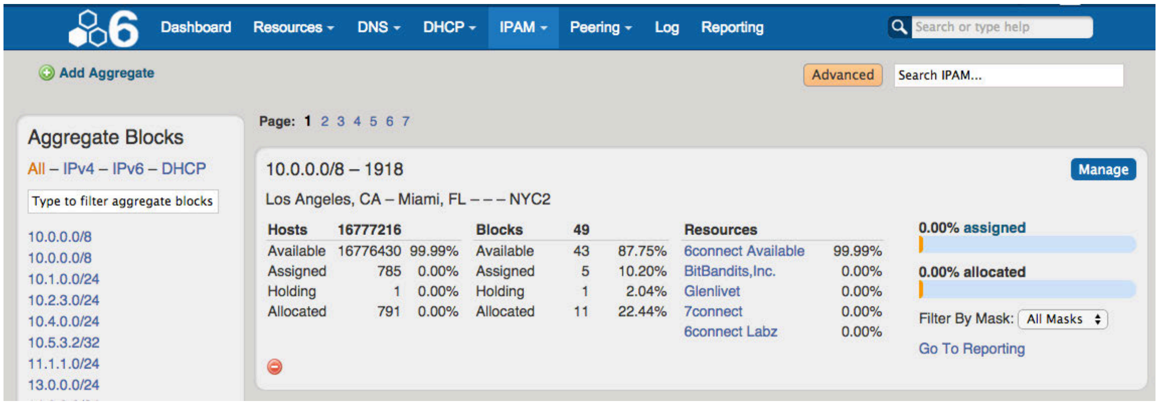
Permissions

DHCP Management integrates with ProVision's resource and permissions hierarchy, as well as the IP Management system. Individual DHCP servers can be assigned via Resource Permissions to different internal user groups, to be managed by only the appropriate parties.

IPAM Tab

IPAM

The IPAM tab provides a listing of aggregate blocks and tools to add and manage aggregates.



10.0.0.0/8
10.0.0.0/8
10.1.0.0/24
10.2.3.0/24
10.4.0.0/24
10.5.3.2/32
11.1.1.0/24
13.0.0.0/24

10.0.0.0/8 – 1918

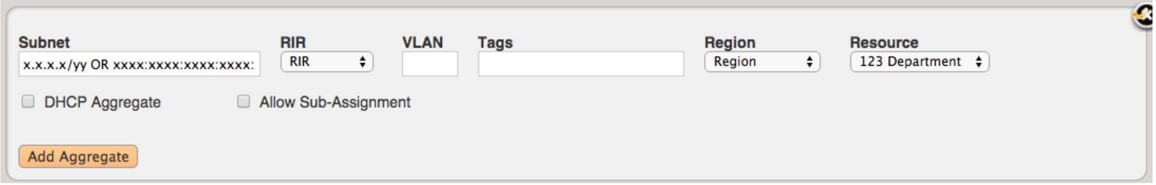
Los Angeles, CA – Miami, FL – – – NYC2

Hosts	16777216		Blocks	49		Resources	
Available	16776430	99.99%	Available	43	87.75%	6connect Available	99.99%
Assigned	785	0.00%	Assigned	5	10.20%	BitBandits,Inc.	0.00%
Holding	1	0.00%	Holding	1	2.04%	Glenlivet	0.00%
Allocated	791	0.00%	Allocated	11	22.44%	7connect	0.00%
						6connect Labz	0.00%

UI Elements:

Add Aggregate:

Opens a menu to add an aggregate block with options for RIR, VLAN, Tags, Region, Resource, and enabling Sub-Assignments / DHCP Aggregate.



Subnet	RIR	VLAN	Tags	Region	Resource
x.x.x.x/yy OR xxxx:xxxx:xxxx:xxxx:	RIR			Region	123 Department

☐ DHCP Aggregate ☐ Allow Sub-Assignment

"Advanced" Button":

Opens the IPAM Manage screen for all blocks. See Working with IP Blocks - Architecting IP Address Blocks for more information on working in IPAM Manage.

Aggregate Blocks List:

Provides a searchable listing of all aggregate blocks in the left sidebar. Selecting "All / IPv4 / IPv6 / DHCP" will filter the visible aggregates in the center of the page.

Top Level Aggregate Box:

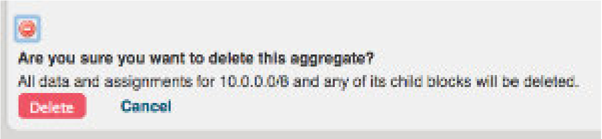
Provides detailed information on that aggregate, including percentage breakdowns and the top 5 Resources assigned under that aggregate.

"Manage" opens the IPAM Manage screen for blocks under that aggregate. See Working with IP Blocks - Architecting IP Address Blocks for more information on working in IPAM Manage.

"Filter by Mask" provides a way to further filter percent assigned and percent allocated by mask.

"Go To Reporting" provides a shortcut to the Reporting tab.

The red icon provides the option to delete the aggregate.



Are you sure you want to delete this aggregate?

All data and assignments for 10.0.0.0/8 and any of its child blocks will be deleted.

Working with IP Blocks

For additional information on performing IPAM tasks and working with blocks, see the following section:

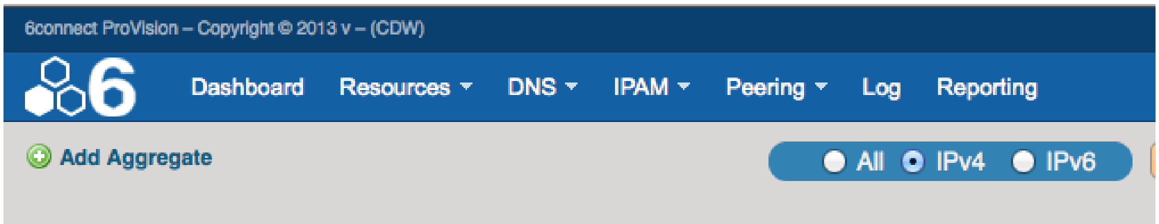
- Working with IP Blocks

Working with IP Blocks

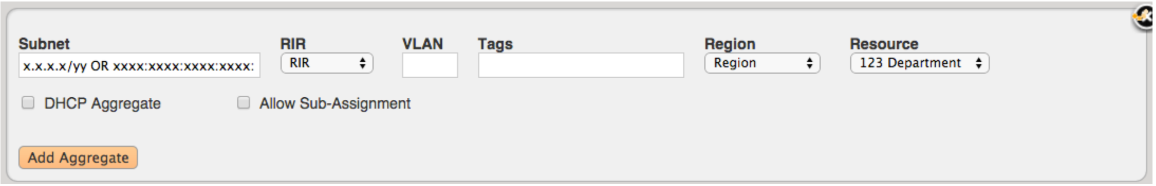
Working with IP Blocks

Adding/Deleting IP Address Aggregates

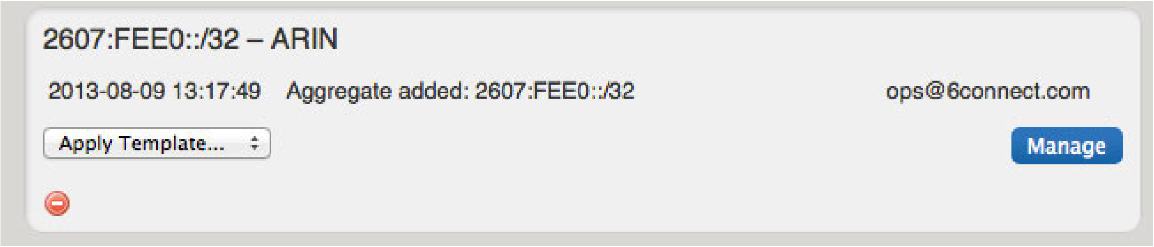
On the standard IPAM page there is an option to "Add Aggregate". Click on the green "Add" icon.



Once clicked, you get a more detailed screen to add an aggregate block.



When a block is added, you will be able to see it on the IPAM page.



2607:FEE0::/32 – ARIN

2013-08-09 13:17:49 Aggregate added: 2607:FEE0::/32 ops@6connect.com

To delete the aggregate - press the red icon and you will have the option delete the aggregate.

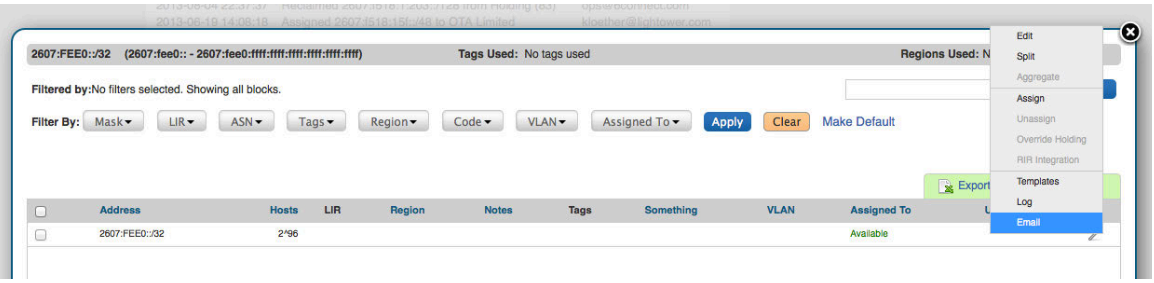
Requirements to Delete an IP Aggregate
In order to delete an IP Aggregate, all resources need to be "unassigned". Once they are unassigned from their respective resources, the "Apply Template" drop down will permit the function "Aggregate" which will bring the IP block back to it's original size.

Once the block is back to it's original size and there are no subnets assigned, the IP Aggregate can be deleted.

Architecting IP Address Blocks

Splitting/Aggregating blocks manually

To split a block manually - you can use the functions from the Manage screen for any aggregate



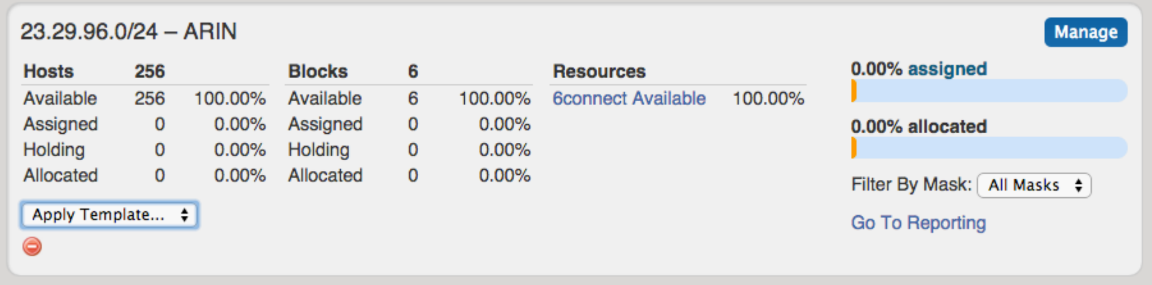
2607:FEE0::/32 **(2607:fee0:: - 2607:fee0:ffff:ffff:ffff:ffff:ffff:ffff)** **Tags Used:** No tags used **Regions Used:** N

Filtered by: No filters selected. Showing all blocks.

☐	Address	Hosts	LIR	Region	Notes	Tags	Something	VLAN	Assigned To
☐	2607:FEE0::/32	2^96							Available

Splitting/Aggregating blocks with Templates

When you first import a block, you can select the template to use from the main IPAM page.

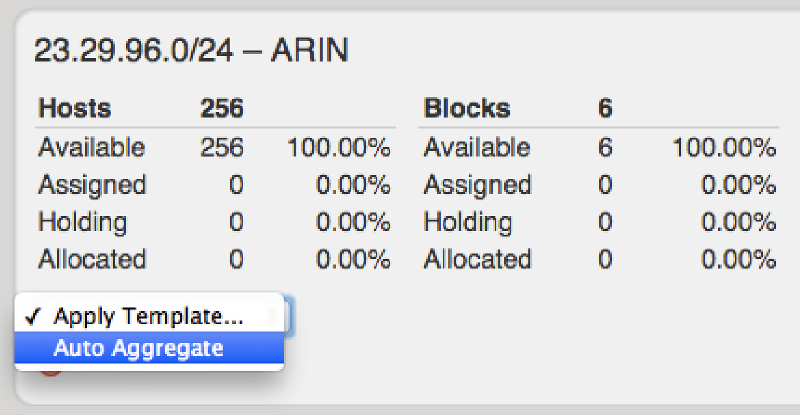


23.29.96.0/24 – ARIN

Hosts	256		Blocks	6		Resources	
Available	256	100.00%	Available	6	100.00%	6connect Available	100.00%
Assigned	0	0.00%	Assigned	0	0.00%		
Holding	0	0.00%	Holding	0	0.00%		
Allocated	0	0.00%	Allocated	0	0.00%		

0.00% assigned

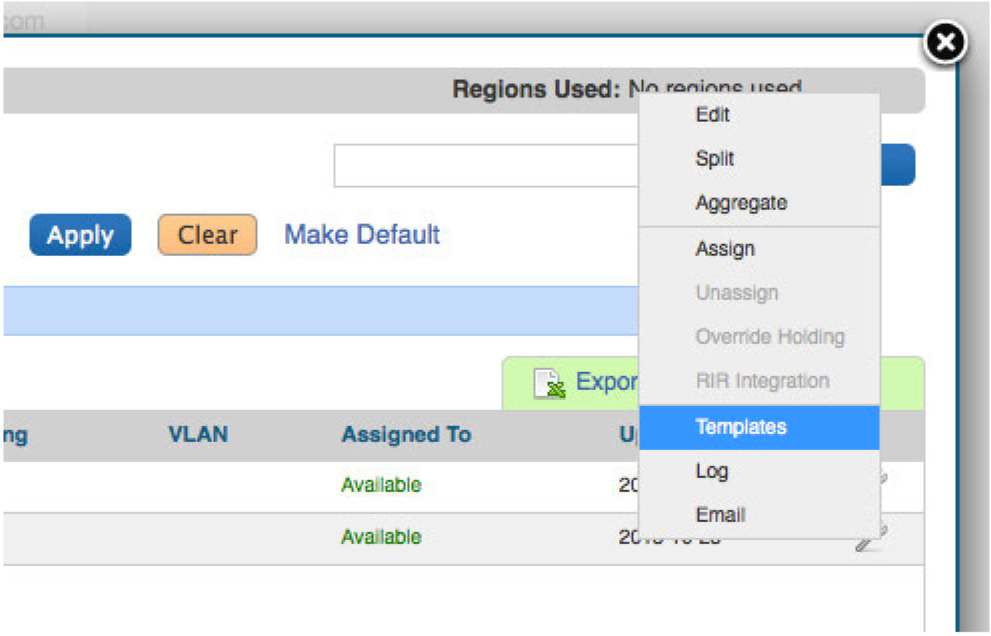
0.00% allocated



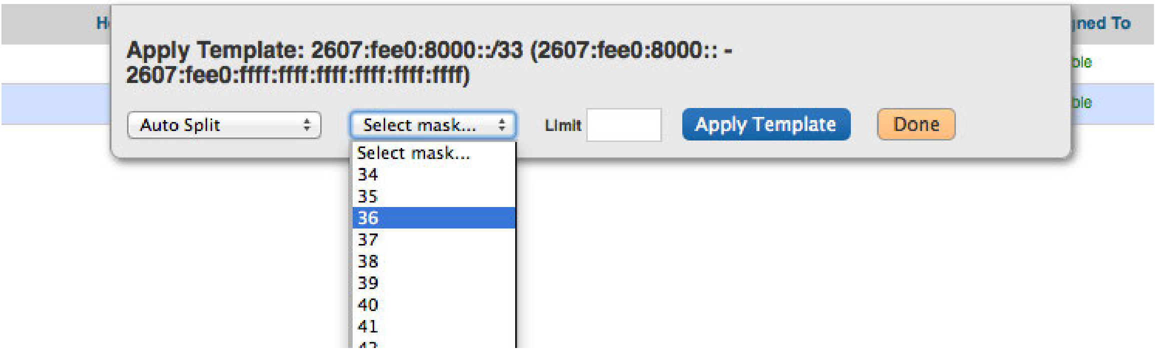
23.29.96.0/24 – ARIN

Hosts	256		Blocks	6	
Available	256	100.00%	Available	6	100.00%
Assigned	0	0.00%	Assigned	0	0.00%
Holding	0	0.00%	Holding	0	0.00%
Allocated	0	0.00%	Allocated	0	0.00%

You can also use the "Templates" option from the Action Menu on the IPAM Manage screen for the specific block.



Then, select the auto split parameters from there, and hit "Apply Template".


Apply Template: 2607:fee0:8000::/33 (2607:fee0:8000:: - 2607:fee0:ffff:ffff:ffff:ffff:ffff:ffff)

Auto Split

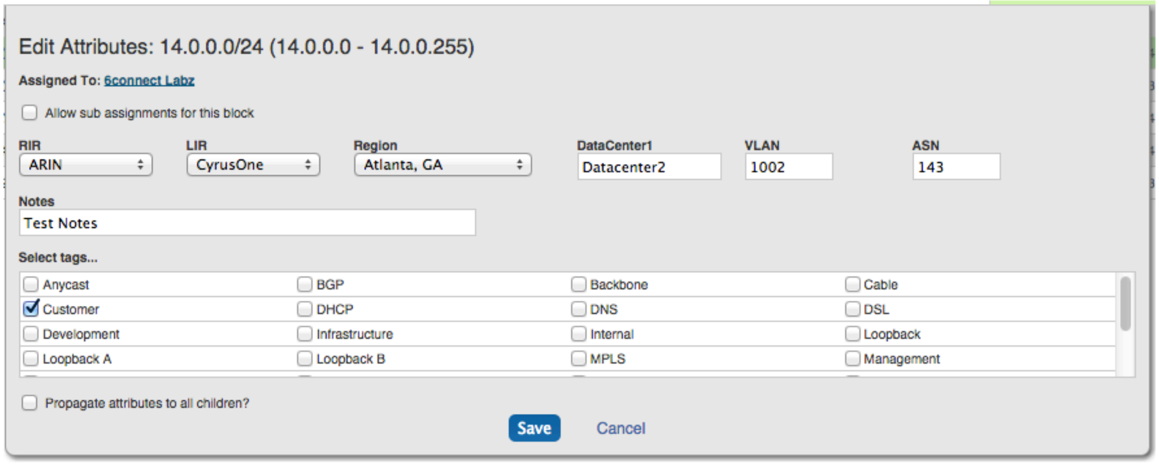
Select mask...

Limit

IP Block parameters and Editing Attributes

When you have your IP blocks laid out, you can then modify their attributes, split them further, assign them, etc. Select the "Edit" option from the Action Menu for a given block to get the Edit Attributes menu.

From here you can set a variety of attributes for a given block. These values are also customizable from the Admin screen - **IPAM Admin**. For more information on IPAM management , see IPAM Administration and IPAM Parameters.


Edit Attributes: 14.0.0.0/24 (14.0.0.0 - 14.0.0.255)

Assigned To: 6connect Labz

☐ Allow sub assignments for this block

RIR	LIR	Region	DataCenter1	VLAN	ASN
ARIN	CyrusOne	Atlanta, GA	Datacenter2	1002	143

Notes: Test Notes

Select tags...

☐ Anycast	☐ BGP	☐ Backbone	☐ Cable
☑ Customer	☐ DHCP	☐ DNS	☐ DSL
☐ Development	☐ Infrastructure	☐ Internal	☐ Loopback
☐ Loopback A	☐ Loopback B	☐ MPLS	☐ Management

☐ Propagate attributes to all children?

Edit Attributes Overview:

Allow Subassignments: When editing a block that has been assigned, checking this box allows for further subassignments, indicated by a blue arrow next to the assignment in the Manage screen.Note: Subassign status cannot be changed if a block has children.

RIR / LIR / Region: Select the information from the drop down menus. LIR and Regions can be customized in the IPAM Admin section of ProVision - see IPAM Administration and IPAM Parameters.

Generic Code (Here, DataCenter1): This is a customizable text field that can be used to track information specific to your needs. It can be filtered in the IPAM Manage screen. The header, display, and enabling settings for this field are set under IPAM Configuration in the IPAM Administration section.

VLAN: Numerical VLAN information for the block. Settings to enable this field are set under IPAM Configuration in the IPAM Administration section.

ASN: ASN information for the block.

Notes: Freeform text field for additional information you wish to capture.

Tags: Tags can be set under Edit Tags in the IPAM Administration section.

Propagate Attributes to Children: Select this box when editing a parent block to carry through attribute changes to all children of that block. To view parent blocks, simply ensure that top level or all masks are selected in the Filter menu in the IPAM Manage screen.

Note: The VLAN of a child cannot be different from that of its parent, so for mutil-level situations (Parent -> Child -> Grandchild), VLAN should be updated at the top tier parent level.

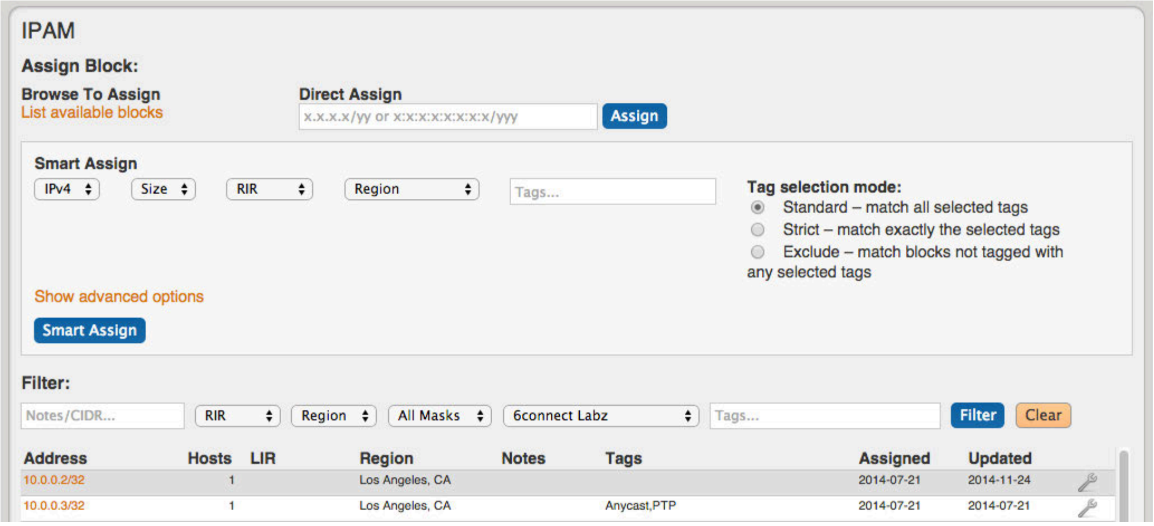
After editing the desired attributes for the block, simply hit "Save".

Assigning IP Space

There are two areas where you can assign IP Space: in the IPAM Gadget for the particular Resource, or through IPAM Manage for manually assigning a block to a resource. The IPAM Gadget allows for more detailed assignment options including Browse to Assign, Direct Assign, and Smart Assign with advanced options, and is the primary tool for space assignment.

Assigning Space from the IPAM Gadget

The IPAM Gadget is accessed from a Resource Entry page, once enabled for the Section (to add Gadgets, see Customizing Sections and Add Gadgets to your Section).



Address	Hosts	LIR	Region	Notes	Tags	Assigned	Updated
10.0.0.2/32	1		Los Angeles, CA			2014-07-21	2014-11-24
10.0.0.3/32	1		Los Angeles, CA		Anycast,PTP	2014-07-21	2014-07-21

You have three options for assigning IP space using the IPAM Gadget:

Browse to Assign

This brings up a list of IP aggregates where you can select the block to assign.

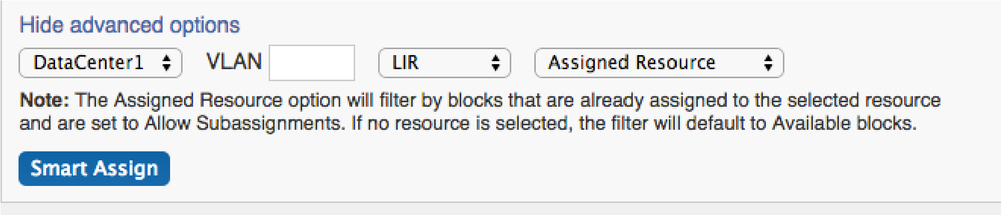
Direct Assign

This field allows you to manually enter an IP block to assign. Enter an IPv4 or IPv6 block, and then click "Assign".

Smart Assign

This series of dropdowns allows you to specify the parameters for the type of IP block you want to assign, as well as tag selection modes. Then it will look at the IPAM blocks that match your criteria to find the correct IP assignment based on availability and relevant parameters.

Additional advanced Smart Assign options are available under "Advanced Options", including VLAN and LIR.

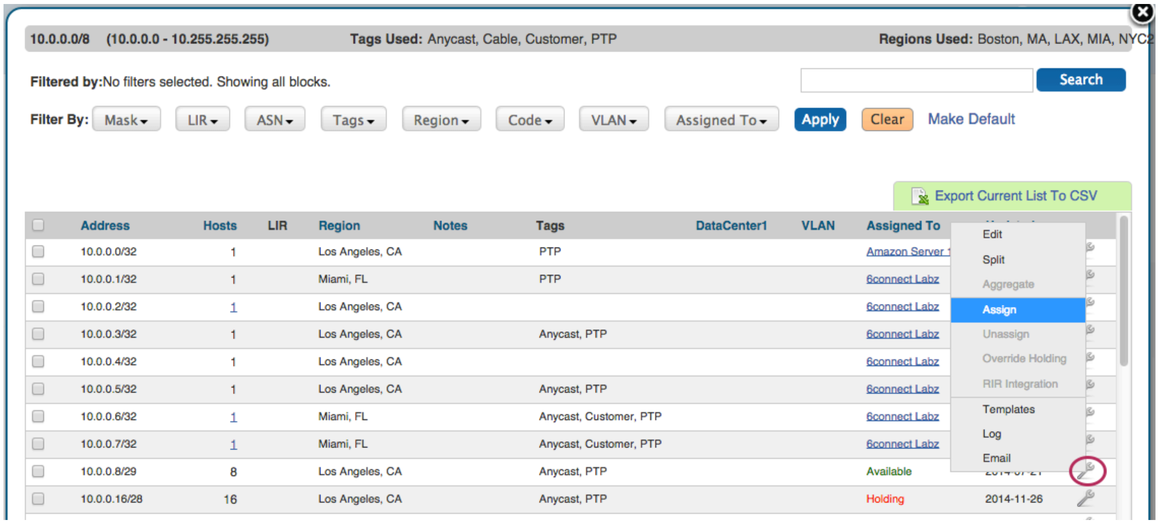


Note: The Assigned Resource option will filter by blocks that are already assigned to the selected resource and are set to Allow Subassignments. If no resource is selected, the filter will default to Available blocks.

Once your criteria has been set, click the "Smart Assign" button.

Manually Assigning Space from the IPAM Manager

You can also assign blocks manually using the "Assign" function from the IPAM Manager screen (accessible from the IPAM Tab). Click the Action Menu (wrench icon), then select "Assign".

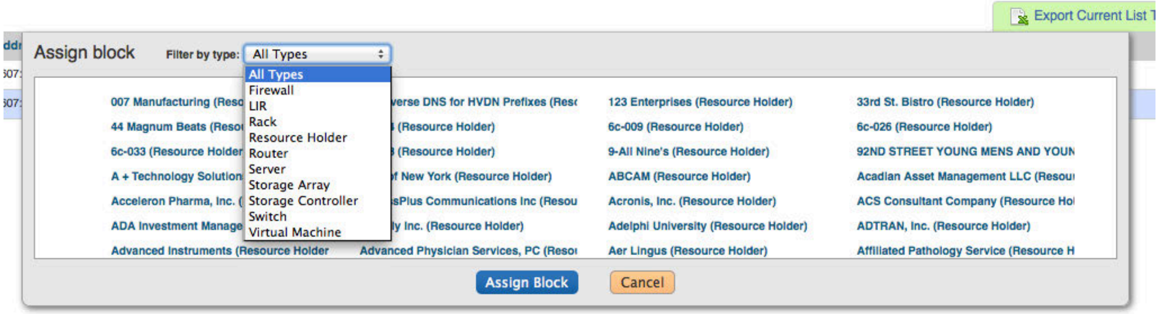


10.0.0.0/8 **(10.0.0.0 - 10.255.255.255)** **Tags Used:** Anycast, Cable, Customer, PTP **Regions Used:** Boston, MA, LAX, MIA, NYC2

Filtered by: No filters selected. Showing all blocks.

☐	Address	Hosts	LIR	Region	Notes	Tags	DataCenter1	VLAN	Assigned To	
☐	10.0.0.0/32	1		Los Angeles, CA		PTP			Amazon Server 1	
☐	10.0.0.1/32	1		Miami, FL		PTP			6connect Labz	
☐	10.0.0.2/32	1		Los Angeles, CA					6connect Labz	
☐	10.0.0.3/32	1		Los Angeles, CA		Anycast, PTP			6connect Labz	
☐	10.0.0.4/32	1		Los Angeles, CA					6connect Labz	
☐	10.0.0.5/32	1		Los Angeles, CA		Anycast, PTP			6connect Labz	
☐	10.0.0.6/32	1		Miami, FL		Anycast, Customer, PTP			6connect Labz	
☐	10.0.0.7/32	1		Miami, FL		Anycast, Customer, PTP			6connect Labz	
☐	10.0.0.8/29	8		Los Angeles, CA		Anycast, PTP			Available	
☐	10.0.0.16/28	16		Los Angeles, CA		Anycast, PTP			Holding	2014-11-26

Then, select the Resource to assign the block. A filter tool is provided to narrow the list to a particular Section type.

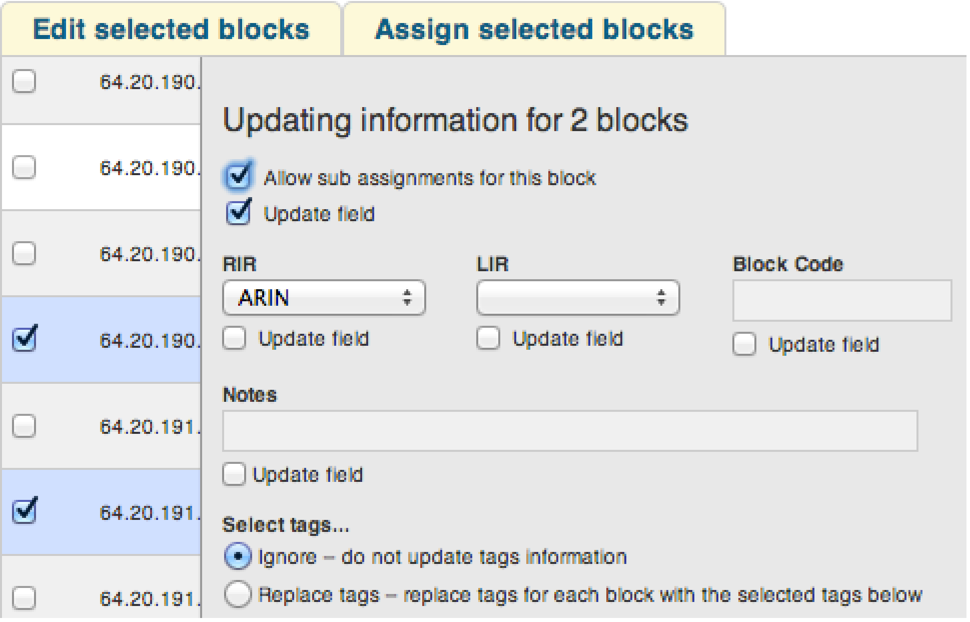

Export Current List T
Assign block
Filter by type:
All Types
All Types
Firewall
LIR
Rack
Resource Holder
Router
Server
Storage Array
Storage Controller
Switch
Virtual Machine
007 Manufacturing (Reso
44 Magnum Beats (Reso
6c-033 (Resource Holder
A + Technology Solution
Acceleron Pharma, Inc. (
ADA Investment Manage
Advanced Instruments (Resource Holder
verse DNS for HVDN Prefixes (Res
(Resource Holder)
(Resource Holder)
f New York (Resource Holder)
sPlus Communications Inc (Resou
ly Inc. (Resource Holder)
Advanced Physician Services, PC (Reso
123 Enterprises (Resource Holder)
6c-009 (Resource Holder)
9-All Nine's (Resource Holder)
ABCAM (Resource Holder)
Acronis, Inc. (Resource Holder)
Adelphi University (Resource Holder)
Aer Lingus (Resource Holder)
33rd St. Bistro (Resource Holder)
6c-026 (Resource Holder)
92ND STREET YOUNG MENS AND YOUN
Acadian Asset Management LLC (Resou
ACS Consultant Company (Resource Ho
ADTRAN, Inc. (Resource Holder)
Affiliated Pathology Service (Resource H
Assign Block
Cancel

After assigning, you can further edit the block attributes or subassign space.

Sub Assigning IP Space

To allow sub assignments, just check the "Allow sub assignments" check box under Edit. Once the allow sub assignments box is checked, the block may be further split and assigned to other resources. Split blocks may also be re-claimed to the originally assigned resource and re-aggregated. When allow sub assignments is checked, the block is counted as allocated, but not assigned - various statistics in IPAM, on the dashboard, and reporting will reflect this. Sub assignments can be useful for tracking IPs assigned to a customer with multiple subsidaries, or locations.

To allow sub assignments for multiple blocks at once, open the Manage screen for the aggregate. Then, select the desired blocks and click "Edit Selected Blocks". The Multi-block edit interface will open. In that interface, select the check boxes next to "Allow sub assignments for this block" and the "Update field" below it. Lastly, save your changes.



☐ 64.20.190.
☐ 64.20.190.
☐ 64.20.190.
☑ 64.20.190.
☐ 64.20.191.
☑ 64.20.191.
☐ 64.20.191.

Updating information for 2 blocks

☑ Allow sub assignments for this block
☑ Update field

RIR: ARIN
☐ Update field

LIR:
☐ Update field

Block Code:
☐ Update field

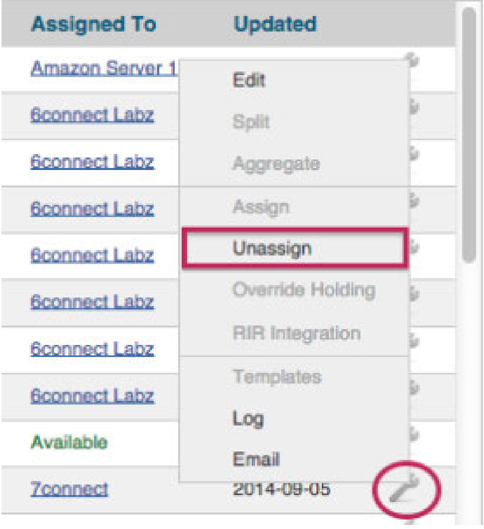
Notes:
☐ Update field

Select tags...
● Ignore – do not update tags information
○ Replace tags – replace tags for each block with the selected tags below

Unassigning IP Space

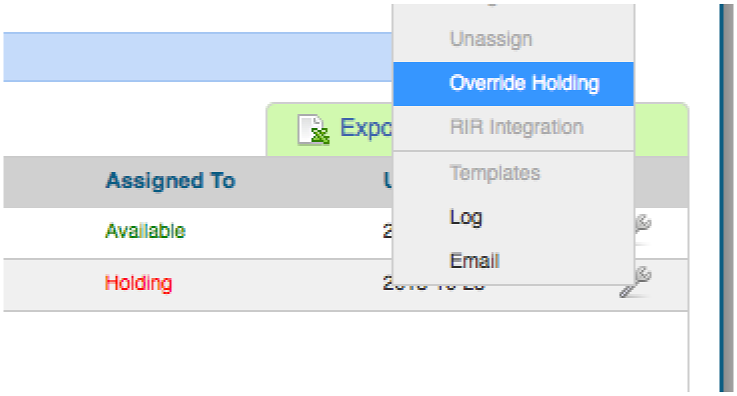
When a block is assigned, you will then have the option of unassigning the block from the resource and returning it to the Holding Tank.

To unassign the block, simply click on the Action Menu (wrench icon) for the block and select "Unassign".

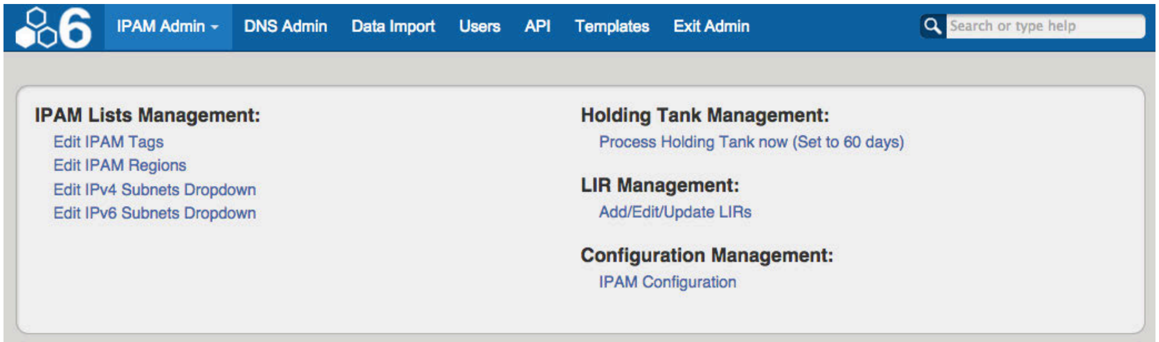


To return IP space in the Holding Tank to the Available Pool - there are two methods:

1) Manually override the holding tank



2) Process the Holding Tank via the Admin screen under **IPAM Admin** (this will only process blocks that were present for the specified number of days).



For more information on the Holding Tank, see Holding Tank Management.

Peering v2

6connect Peering

The **Peering** tab displays peering stats, allows you to add routers and sessions, and to manage communications and sessions for each exchange.

Three other sections are available via the drop down menu:

Routers - Links to the resource list of routers

Import - Import Sessions by exchange and router

Logging - View peering related logs

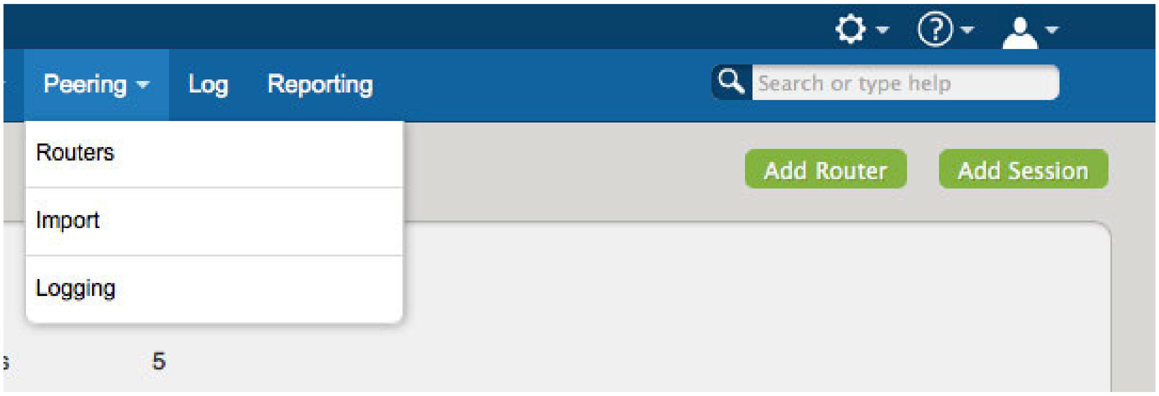


Table of contents

Peering - Common Tasks

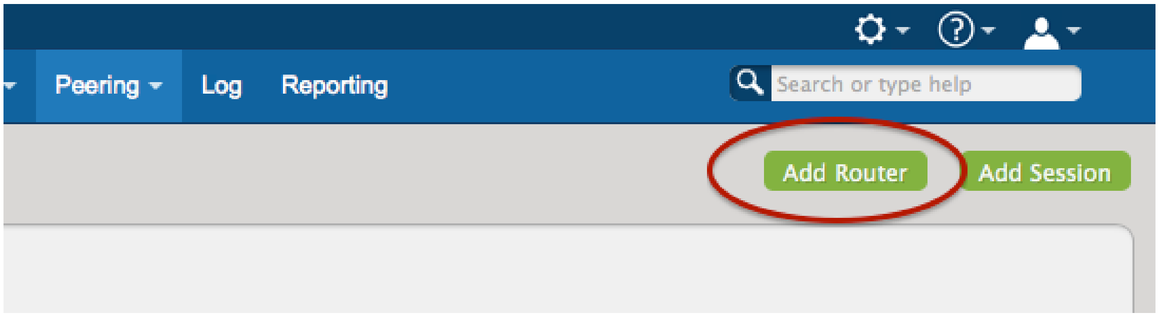
Peering Common Tasks

- Add Routers
- Add Sessions
- Import Sessions

Add Routers

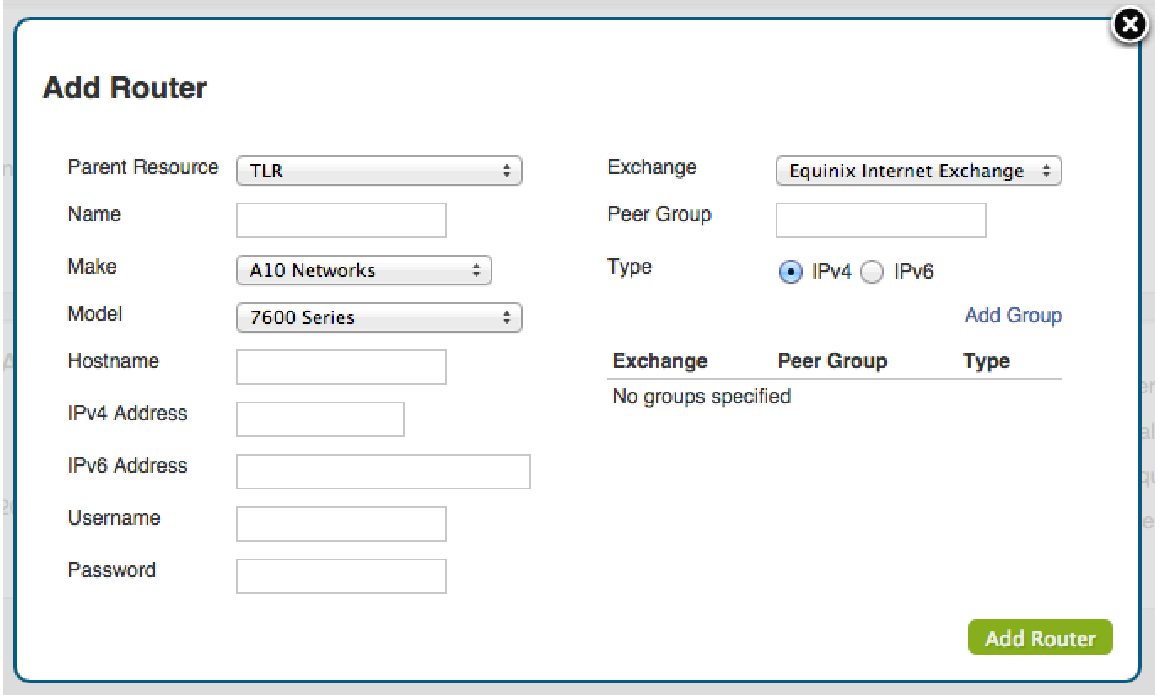
Adding Routers

Navigate to the **Peering** tab. Select "Add Router".



Enter the router information for Parent, Name, Make, Model, Addresses, Username, Password, and Exchange.

For Peer Group, type in the name of the desired Peer Group name, select whether it is IPv4 / IPv6, and click "Add Group". Lastly, click "Add Router".



Add Router

Parent Resource	TLR
Name	
Make	A10 Networks
Model	7600 Series
Hostname	
IPv4 Address	
IPv6 Address	
Username	
Password	
Exchange	Equinix Internet Exchange
Peer Group	
Type	● IPv4 ○ IPv6

Exchange	Peer Group	Type
No groups specified		

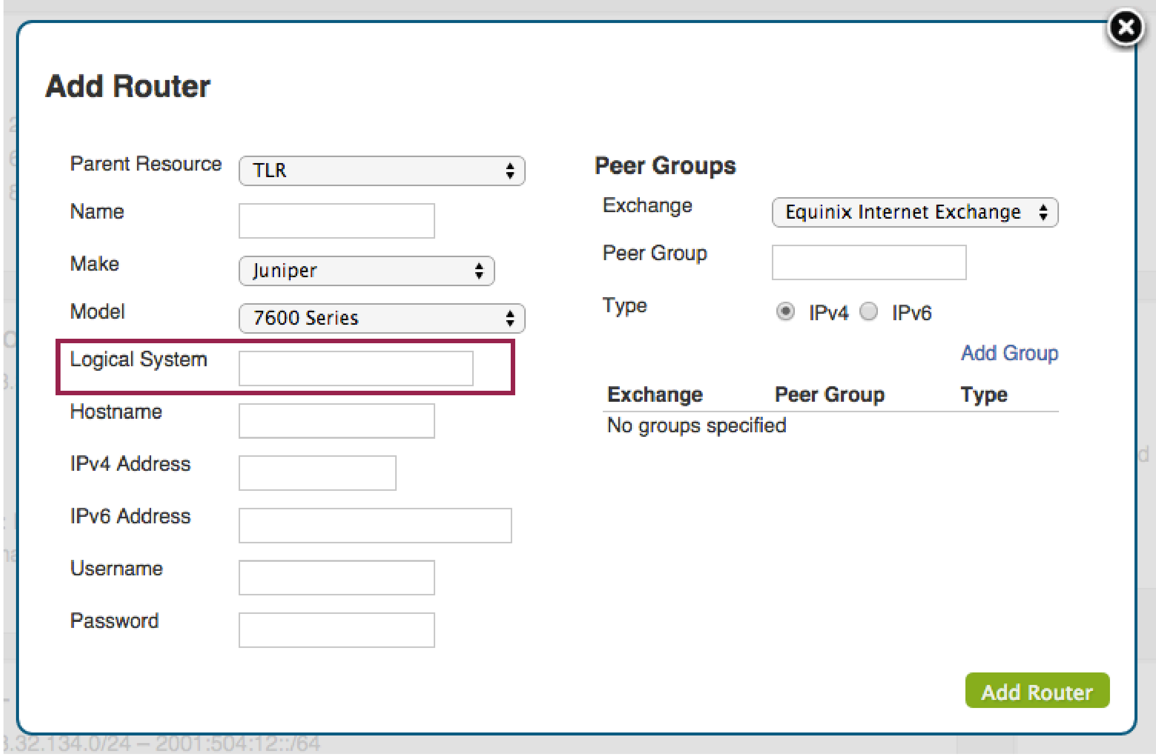
⚠ Associating the router with a peer group is necessary to link the router to a particular exchange.

Please be sure to add the Peer Group information either in the "Add Router" dialog or in the Peer Group Gadget prior to adding sessions.

Adding Juniper Routers with Logical Systems

Adding a Juniper router with Logical Systems follows the standard process listed above, with one difference - adding in the Logical Systems information.

When you select a Juniper router make/model, the Logical System text field will appear.


Add Router

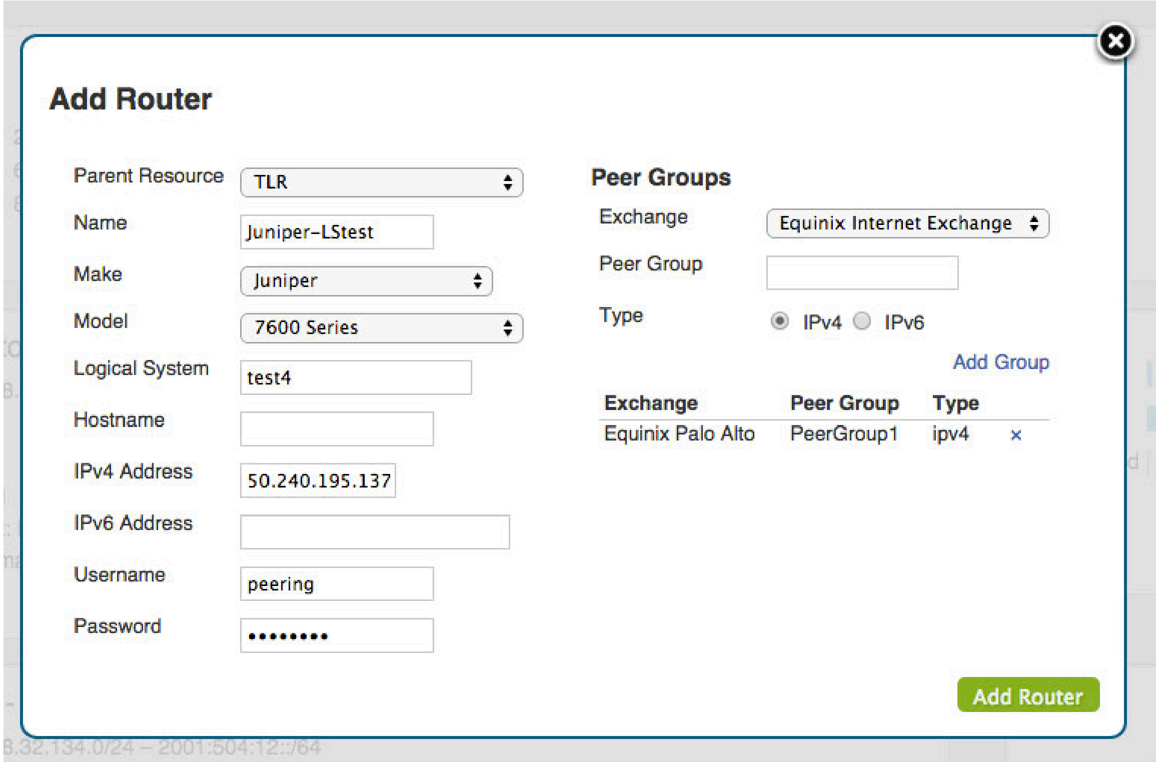
Parent Resource	TLR
Name	
Make	Juniper
Model	7600 Series
Logical System	
Hostname	
IPv4 Address	
IPv6 Address	
Username	
Password	

Peer Groups

Exchange	Equinix Internet Exchange
Peer Group	
Type	● IPv4 ○ IPv6

Exchange	Peer Group	Type
No groups specified		

Type the Logical Systems information for the router, then resume entering the rest of the router information and peer groups. Hit "Add Router" when complete.


Add Router

Parent Resource	TLR
Name	Juniper-LStest
Make	Juniper
Model	7600 Series
Logical System	test4
Hostname	
IPv4 Address	50.240.195.137
IPv6 Address	
Username	peering
Password	••••••••

Peer Groups

Exchange	Equinix Internet Exchange
Peer Group	
Type	● IPv4 ○ IPv6

Exchange	Peer Group	Type	
Equinix Palo Alto	PeerGroup1	ipv4	×

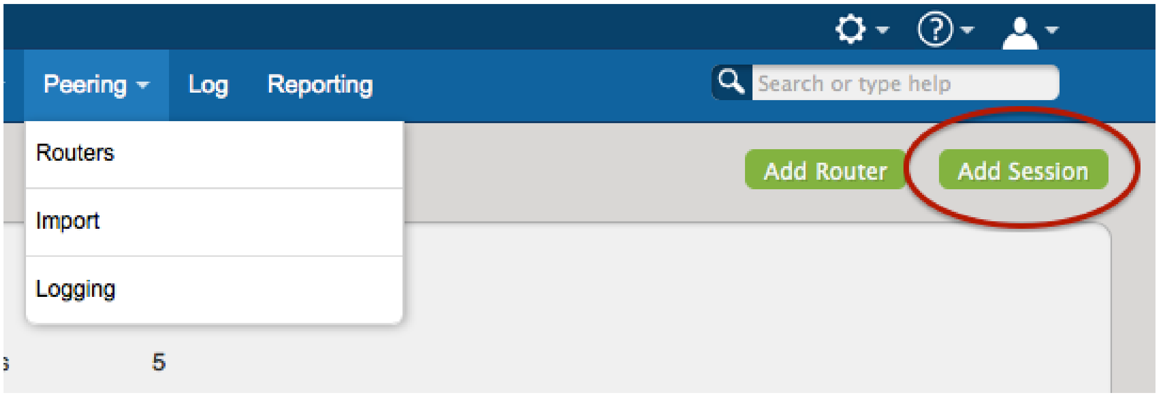
✓ **Routers with Multiple Logical Systems**

For routers with multiple associated Logical Systems, you may create duplicate router resources utilizing the same router information, but with different logical systems entries.

Add Sessions

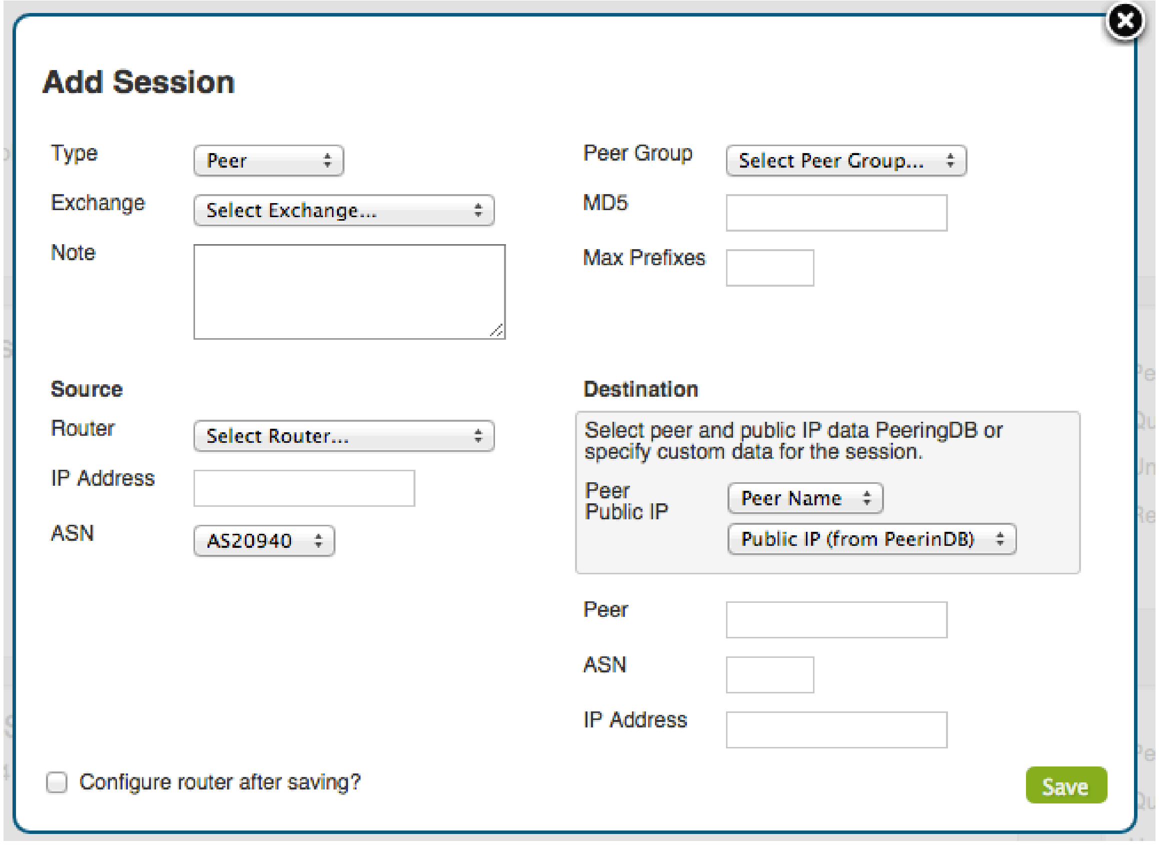
Adding a Peering Session

From the **Peering** tab, Select "Add Session".



In the Add Session form, fill out the session information including the session Type and Exchange, the Source information, Peer Group, and the Destination. Destination IP can be pulled from the public PeeringDB information, or custom data may be specified.

If you have enabled and added VRFs to a router, the source ASNs for the associated VRFs will appear in the source ASN dropdown when adding or editing a session for that router.



Add Session

Type: Peer

Exchange: Select Exchange...

Note:

Peer Group: Select Peer Group...

MD5:

Max Prefixes:

Source

Router: Select Router...

IP Address:

ASN: AS20940

Destination

Select peer and public IP data PeeringDB or specify custom data for the session.

Peer Public IP: Peer Name; Public IP (from PeerinDB)

Peer:

ASN:

IP Address:

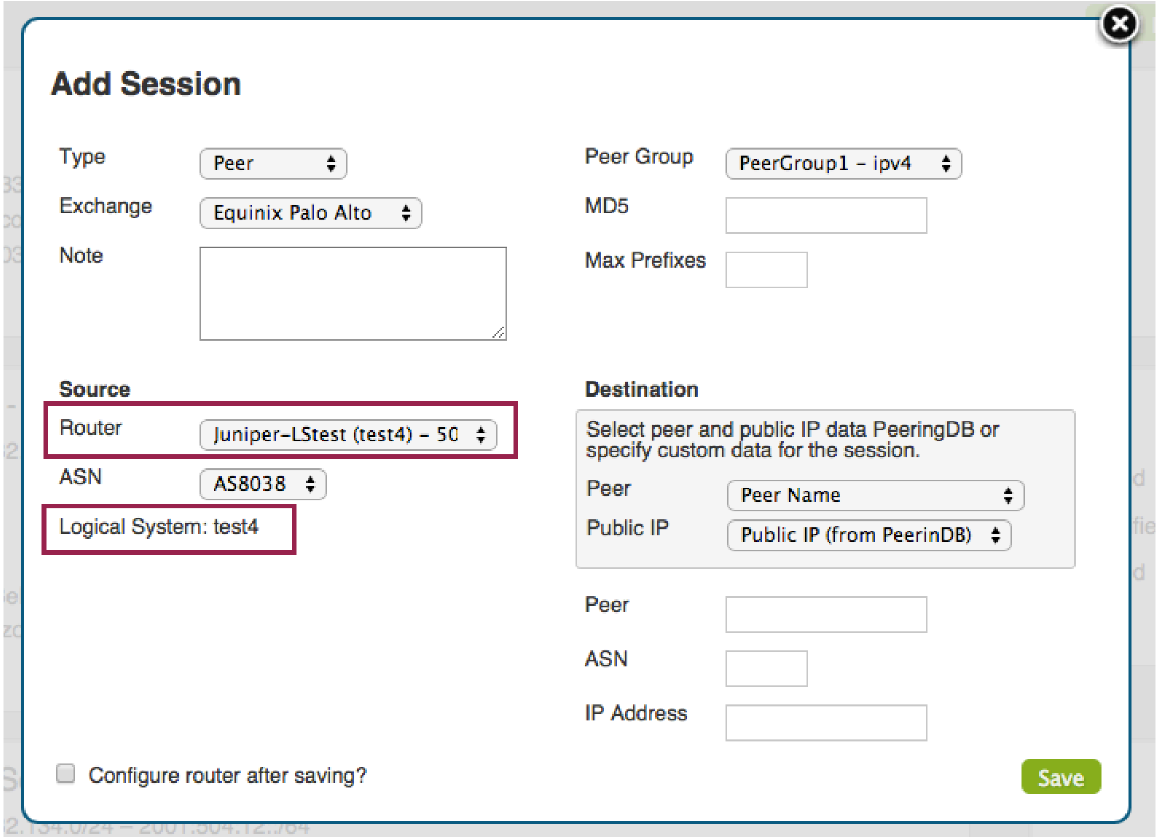
☐ Configure router after saving?

If you would like for the router to be automatically configured when adding your session, check the "Configure Router After Saving" box, then hit "Save". If left unchecked, the session can always be configured later in the Peering Manager.

Adding Sessions with Logical Systems Routers

After having added a Logical System to a router, that router + Logical System combination will be available to select in the Peering - Add Session dialog box. Look for the router name, with the Logical System info in parenthesis (e.g. "Juniper (test)").

The Peer Group associated with that router / Logical System will automatically be selected. Continue to fill in your session information, then hit "Save".



Add Session

Type: Peer

Exchange: Equinix Palo Alto

Note

Peer Group: PeerGroup1 – ipv4

MD5

Max Prefixes

Source

Router: Juniper–LStest (test4) – 50

ASN: AS8038

Logical System: test4

Destination

Select peer and public IP data PeeringDB or specify custom data for the session.

Peer: Peer Name

Public IP: Public IP (from PeerinDB)

Peer

ASN

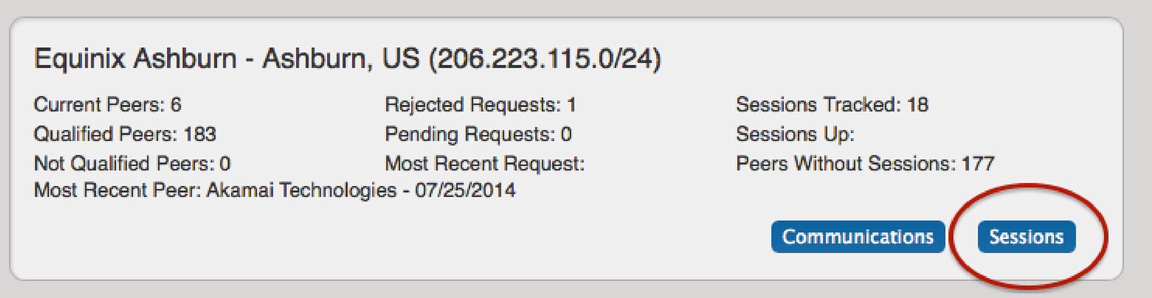
IP Address

☐ Configure router after saving?

Managing Peer Sessions

Managing Peering Sessions

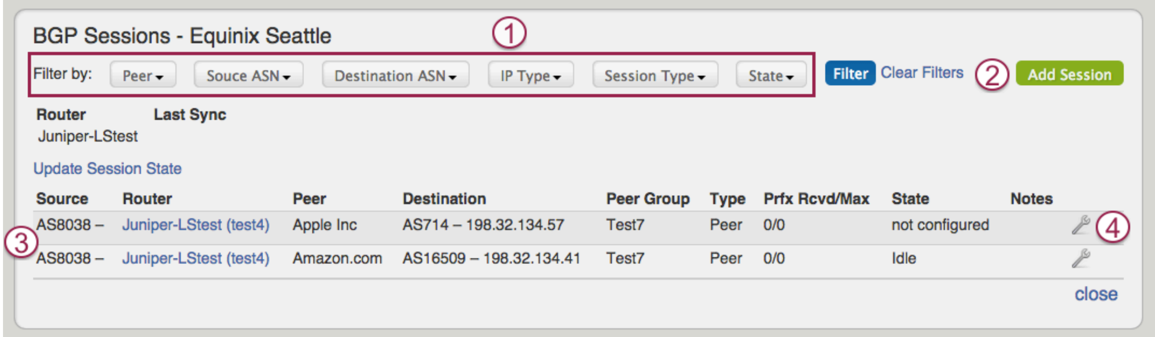
To bring up the Peering Manager, click on "Sessions" for the desired exchange in the **Peering** tab.



Equinix Ashburn - Ashburn, US (206.223.115.0/24)

Current Peers: 6
Qualified Peers: 183
Not Qualified Peers: 0
Most Recent Peer: Akamai Technologies - 07/25/2014
Rejected Requests: 1
Pending Requests: 0
Most Recent Request:
Sessions Tracked: 18
Sessions Up:
Peers Without Sessions: 177

The Peering Manager UI:



BGP Sessions - Equinix Seattle

Router	Last Sync
Juniper-LStest	

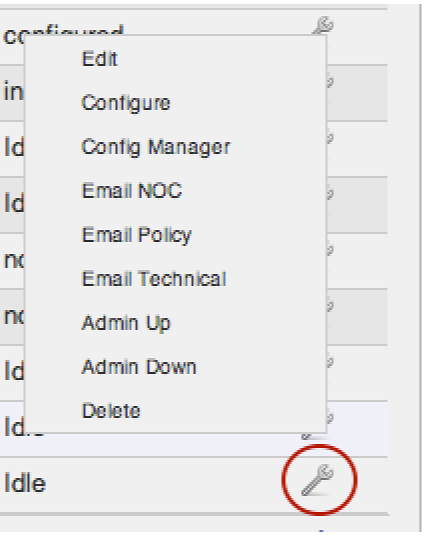
Source	Router	Peer	Destination	Peer Group	Type	Prfx Rcvd/Max	State	Notes
AS8038 –	Juniper-LStest (test4)	Apple Inc	AS714 – 198.32.134.57	Test7	Peer	0/0	not configured	
AS8038 –	Juniper-LStest (test4)	Amazon.com	AS16509 – 198.32.134.41	Test7	Peer	0/0	Idle	

1) Filter Options: The sessions list may be filtered by Peer, Source ASN, Destination ASN, IP Type, Session Type, or State. Once you've chosen the filter criteria, click on "Filter". Select "Clear Filters" to return to the full session list.

2) Add Session: A session can be added from the Peering Manager just like the Add Session at the top of the Peering page - the exchange field is simply automatically filled with the current exchange.

3) Session Information: Lists session Source, Router, Peer, Destination, Peer Group, Type, Prefixes Received / Max Prefixes, State, and Notes.

4) Edit Session (Wrench): Clicking on the wrench icon will bring up the following tools to manage your sessions:



Action Menu (Wrench Icon) Options

Edit: Edit session information such as Type, Exchange, Source, Peer Group, Prefixes, or Destination.

Configure: 1-click configure which uses default router configuration, username, and password settings.

Config Manager: The Config Manager allows for custom configuration commands and user-level username/ password to be entered prior to pushing the config. This is a one time use configuration.

Email NOC: Brings up the NOC (Network Operations Center) email template. The email template pre-populates data based on peeringdb data (To address, Subject line and Peering exchange information). You have the chance to edit the email prior to sending.

Email Policy: Brings up the policy email template. The email template pre-populates data based on peeringdb data (To address, Subject line and Peering exchange information). You have the chance to edit the email prior to sending.

Email Technical: Brings up the technical email template. The email template pre-populates data based on peeringdb data (To address, Subject line and Peering exchange information). You have the chance to edit the email prior to sending.

Admin Up: Ups a bgp session without removing it or adding it to the config.

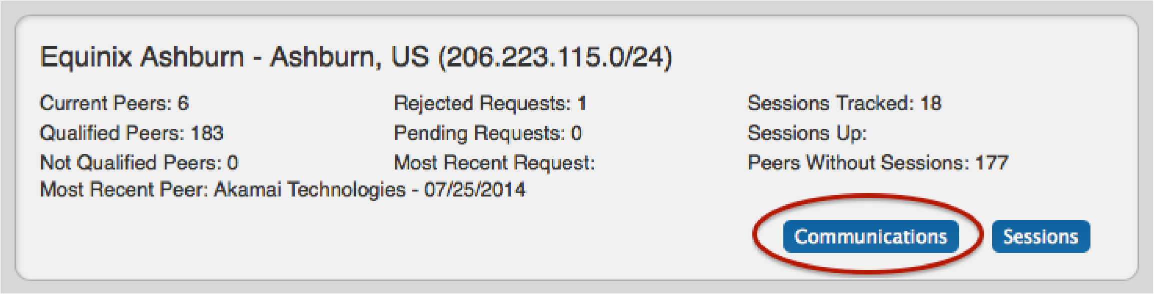
Admin Down: Downs a bgp session without removing it or adding it to the config. On Cisco, Admin Down moves the session to Idle (Admin) state, on Juniper it deactivates the session.

Delete: Sessions of type "Peer" are removed from the router when deleted in ProVision. Other sessions will only be removed from the sessions list in ProVision.

Managing Peer Communications

Communications Manager

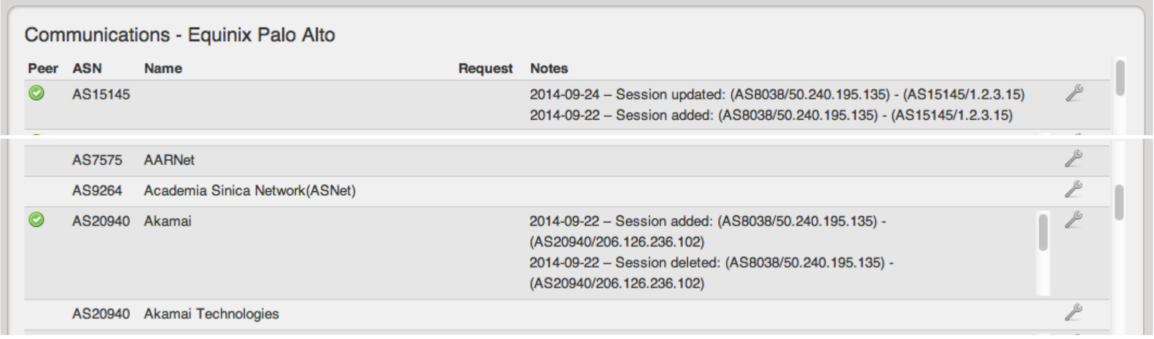
Navigate to the **Peering** tab. Select "Communications" for the desired exchange to bring up the peer communications manager.



Equinix Ashburn - Ashburn, US (206.223.115.0/24)

Current Peers: 6	Rejected Requests: 1	Sessions Tracked: 18
Qualified Peers: 183	Pending Requests: 0	Sessions Up:
Not Qualified Peers: 0	Most Recent Request:	Peers Without Sessions: 177
Most Recent Peer: Akamai Technologies - 07/25/2014		

The communications manager lists the current peer communications, allowing you to mark peering status and send out peering requests from the interface. Current peers are denoted by a green check symbol under **Peer**; peers that are not qualified will show a red 'no entry' symbol. **Request** shows the peering request status, which may be: none, sent, accepted, or rejected. Updates made to the communications status will be logged under **Notes**.

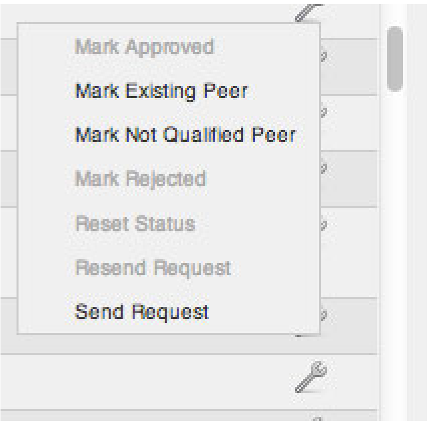


Communications - Equinix Palo Alto

Peer	ASN	Name	Request	Notes
✓	AS15145			2014-09-24 – Session updated: (AS8038/50.240.195.135) - (AS15145/1.2.3.15) 2014-09-22 – Session added: (AS8038/50.240.195.135) - (AS15145/1.2.3.15)
	AS7575	AARNet		
	AS9264	Academia Sinica Network(ASNet)		
✓	AS20940	Akamai		2014-09-22 – Session added: (AS8038/50.240.195.135) - (AS20940/206.126.236.102) 2014-09-22 – Session deleted: (AS8038/50.240.195.135) - (AS20940/206.126.236.102)
	AS20940	Akamai Technologies		

Action Menu (Wrench Icon) Options

Select the wrench icon to manage the communication status:



Mark Approved: Marks the peer as approved. Available after receiving a request response.

Mark Existing Peer: Marks a peer as an existing one and removes the email request options.

Mark Not Qualified Peer: Marks a peer as "not qualified" and removes the email request options.

Mark Rejected: Marks the peer as rejected. Available after receiving a request response.

Reset Status: Resets the status of the peer, opening up the options to mark peer as existing, not qualified, or to send email requests.

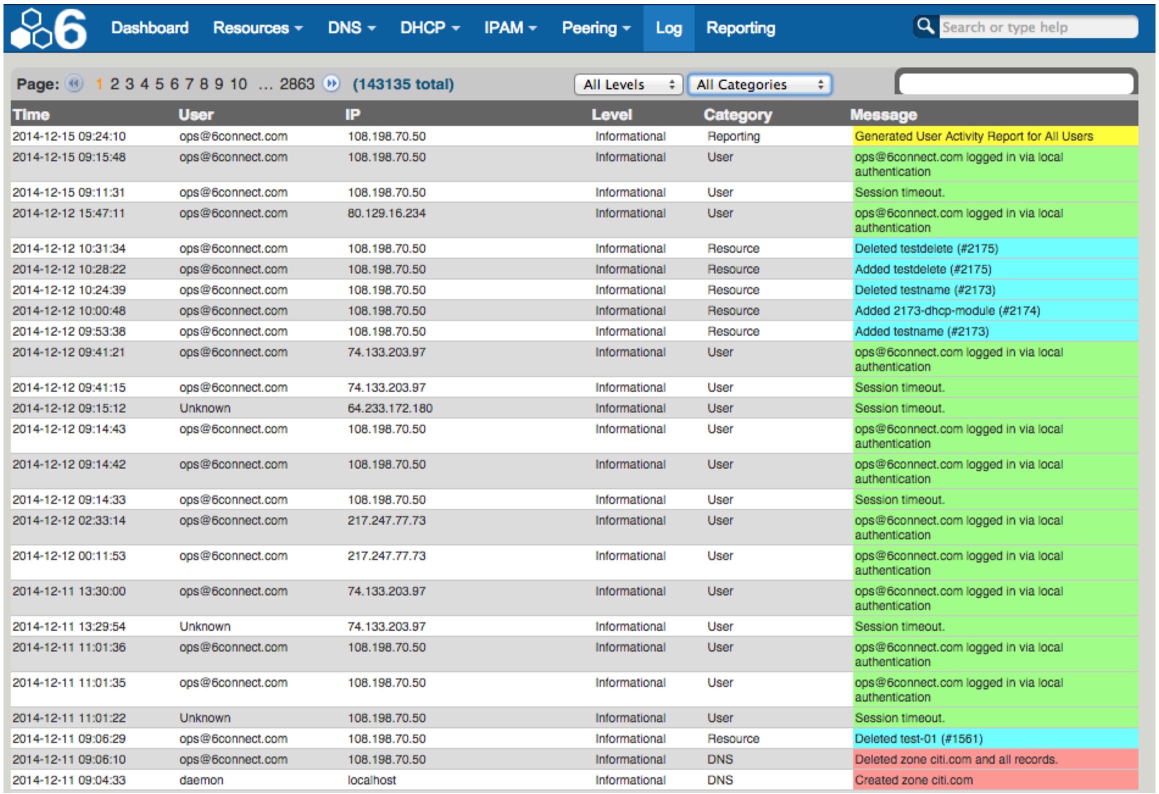
Resend Request: Resends the peering request.

Send Request: Sends an initial peering request email to the peering coordinator. The email template pre-populates data based on peeringdb data (To address, Subject line and Peering exchange information). You have the chance to edit the email prior to sending.

Log

Log

The 6connect ProVision log provides detailed information on actions performed in ProVision.

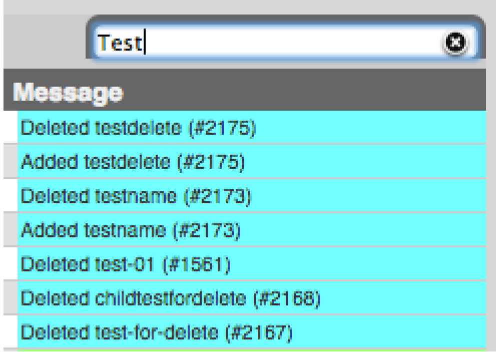


Time	User	IP	Level	Category	Message
2014-12-15 09:24:10	ops@6connect.com	108.198.70.50	Informational	Reporting	Generated User Activity Report for All Users
2014-12-15 09:15:48	ops@6connect.com	108.198.70.50	Informational	User	ops@6connect.com logged in via local authentication
2014-12-15 09:11:31	ops@6connect.com	108.198.70.50	Informational	User	Session timeout.
2014-12-12 15:47:11	ops@6connect.com	80.129.16.234	Informational	User	ops@6connect.com logged in via local authentication
2014-12-12 10:31:34	ops@6connect.com	108.198.70.50	Informational	Resource	Deleted testdelete (#2175)
2014-12-12 10:28:22	ops@6connect.com	108.198.70.50	Informational	Resource	Added testdelete (#2175)
2014-12-12 10:24:39	ops@6connect.com	108.198.70.50	Informational	Resource	Deleted testname (#2173)
2014-12-12 10:00:48	ops@6connect.com	108.198.70.50	Informational	Resource	Added 2173-dhcp-module (#2174)
2014-12-12 09:53:38	ops@6connect.com	108.198.70.50	Informational	Resource	Added testname (#2173)
2014-12-12 09:41:21	ops@6connect.com	74.133.203.97	Informational	User	ops@6connect.com logged in via local authentication
2014-12-12 09:41:15	ops@6connect.com	74.133.203.97	Informational	User	Session timeout.
2014-12-12 09:15:12	Unknown	64.233.172.180	Informational	User	Session timeout.
2014-12-12 09:14:43	ops@6connect.com	108.198.70.50	Informational	User	ops@6connect.com logged in via local authentication
2014-12-12 09:14:42	ops@6connect.com	108.198.70.50	Informational	User	ops@6connect.com logged in via local authentication
2014-12-12 09:14:33	ops@6connect.com	108.198.70.50	Informational	User	Session timeout.
2014-12-12 02:33:14	ops@6connect.com	217.247.77.73	Informational	User	ops@6connect.com logged in via local authentication
2014-12-12 00:11:53	ops@6connect.com	217.247.77.73	Informational	User	ops@6connect.com logged in via local authentication
2014-12-11 13:30:00	ops@6connect.com	74.133.203.97	Informational	User	ops@6connect.com logged in via local authentication
2014-12-11 13:29:54	Unknown	74.133.203.97	Informational	User	Session timeout.
2014-12-11 11:01:36	ops@6connect.com	108.198.70.50	Informational	User	ops@6connect.com logged in via local authentication
2014-12-11 11:01:35	ops@6connect.com	108.198.70.50	Informational	User	ops@6connect.com logged in via local authentication
2014-12-11 11:01:22	Unknown	108.198.70.50	Informational	User	Session timeout.
2014-12-11 09:06:29	ops@6connect.com	108.198.70.50	Informational	Resource	Deleted test-01 (#1561)
2014-12-11 09:06:10	ops@6connect.com	108.198.70.50	Informational	DNS	Deleted zone citi.com and all records.
2014-12-11 09:04:33	daemon	localhost	Informational	DNS	Created zone citi.com

Log Features

Search:

- Enter the search text above the Message column

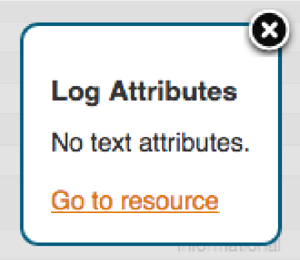


Test

Message
Deleted testdelete (#2175)
Added testdelete (#2175)
Deleted testname (#2173)
Added testname (#2173)
Deleted test-01 (#1561)
Deleted childtestfordelete (#2168)
Deleted test-for-delete (#2167)

Additional Details:

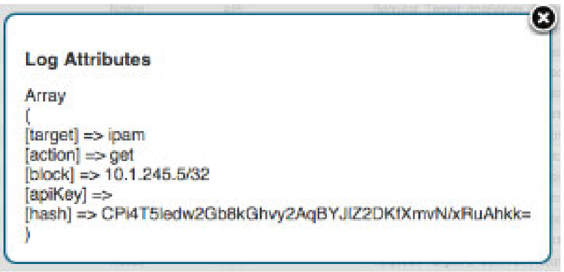
- Clicking on a Resource log item provides a link to the Resource's entry page



Log Attributes

No text attributes.

- Clicking on an API log item provides additional details about the API call

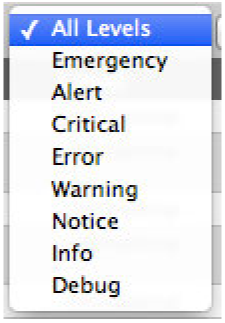


Log Attributes

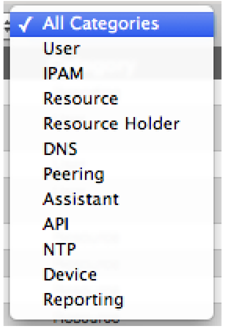
```
Array
(
[target] => ipam
[action] => get
[block] => 10.1.245.5/32
[apiKey] =>
[hash] => CPi4T5ledw2Gb8kGhvy2AqBYJlZ2DKfXmvN/xRuAhkk=
)
```

Filters:

- Filter by notification level



- Filter by category



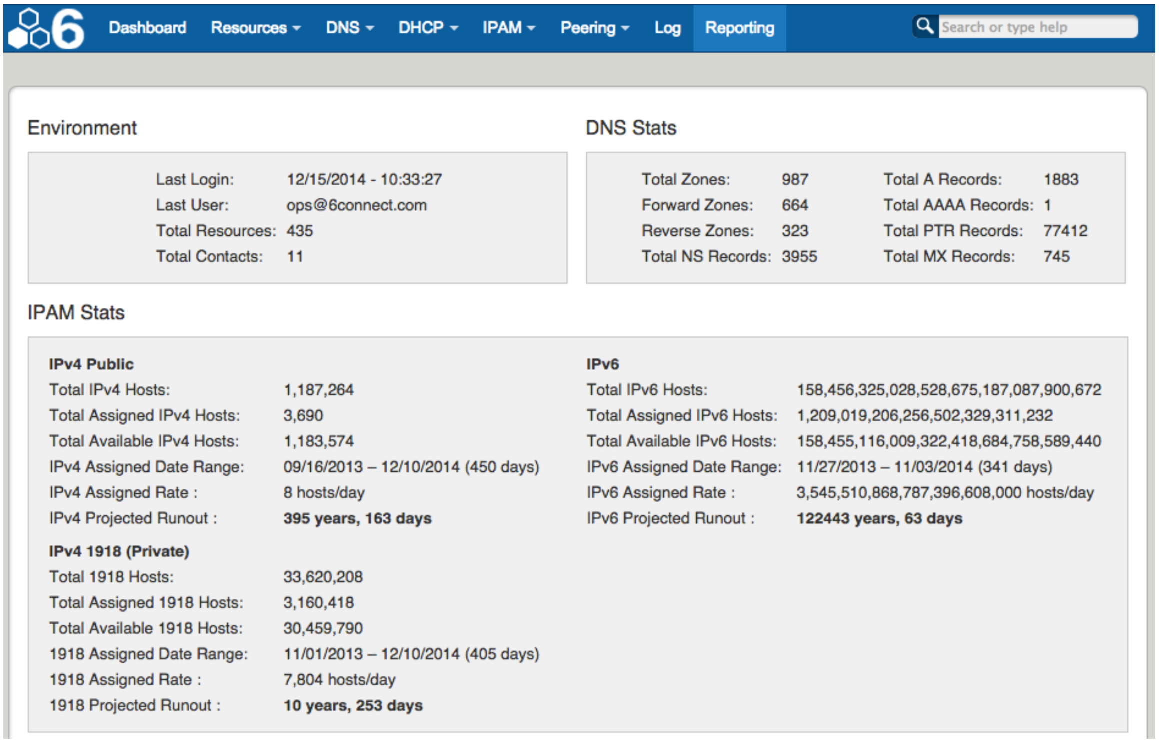
Reporting

Reporting

The ProVision Reporting tab provides an overview of program statistics, as well as a way to view and download activity information.

Stats

Items of interest provided under stats include most recent login, number of Resources, DNS zone breakdowns, IPAM hosts, and estimated IP runout time.



Environment

Last Login: 12/15/2014 - 10:33:27
Last User: ops@6connect.com
Total Resources: 435
Total Contacts: 11

DNS Stats

Total Zones: 987
Forward Zones: 664
Reverse Zones: 323
Total NS Records: 3955
Total A Records: 1883
Total AAAA Records: 1
Total PTR Records: 77412
Total MX Records: 745

IPAM Stats

IPv4 Public
Total IPv4 Hosts: 1,187,264
Total Assigned IPv4 Hosts: 3,690
Total Available IPv4 Hosts: 1,183,574
IPv4 Assigned Date Range: 09/16/2013 – 12/10/2014 (450 days)
IPv4 Assigned Rate : 8 hosts/day
IPv4 Projected Runout : **395 years, 163 days**

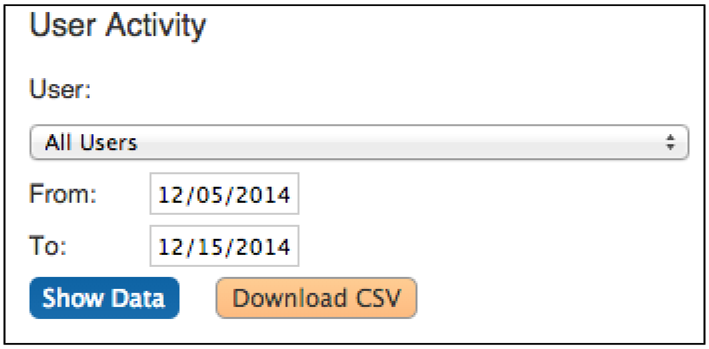
IPv4 1918 (Private)
Total 1918 Hosts: 33,620,208
Total Assigned 1918 Hosts: 3,160,418
Total Available 1918 Hosts: 30,459,790
1918 Assigned Date Range: 11/01/2013 – 12/10/2014 (405 days)
1918 Assigned Rate : 7,804 hosts/day
1918 Projected Runout : **10 years, 253 days**

IPv6
Total IPv6 Hosts: 158,456,325,028,528,675,187,087,900,672
Total Assigned IPv6 Hosts: 1,209,019,206,256,502,329,311,232
Total Available IPv6 Hosts: 158,455,116,009,322,418,684,758,589,440
IPv6 Assigned Date Range: 11/27/2013 – 11/03/2014 (341 days)
IPv6 Assigned Rate : 3,545,510,868,787,396,608,000 hosts/day
IPv6 Projected Runout : **122443 years, 63 days**

Reports

User Activity

To run a User Activity report, simply select the user from the drop down menu and a desired date range for the report. Clicking on "Show Data" will show the User, IP, Timestamp, and Action in a table at the bottom of the page. To export the data to .csv, simply select "Download CSV".

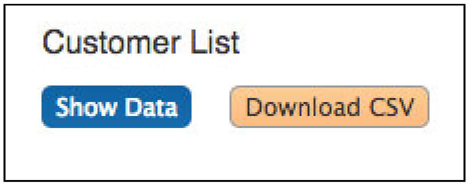


User Activity

User: All Users
From: 12/05/2014
To: 12/15/2014

Customer List

The Customer List report reflects all Resources created under the Category of "Customer". Clicking on "Show Data" will show information collected from the Contact Info and Tech Info gadgets, parent information, and IP / zone assignment counts. To export the data to .csv, simply select "Download CSV".

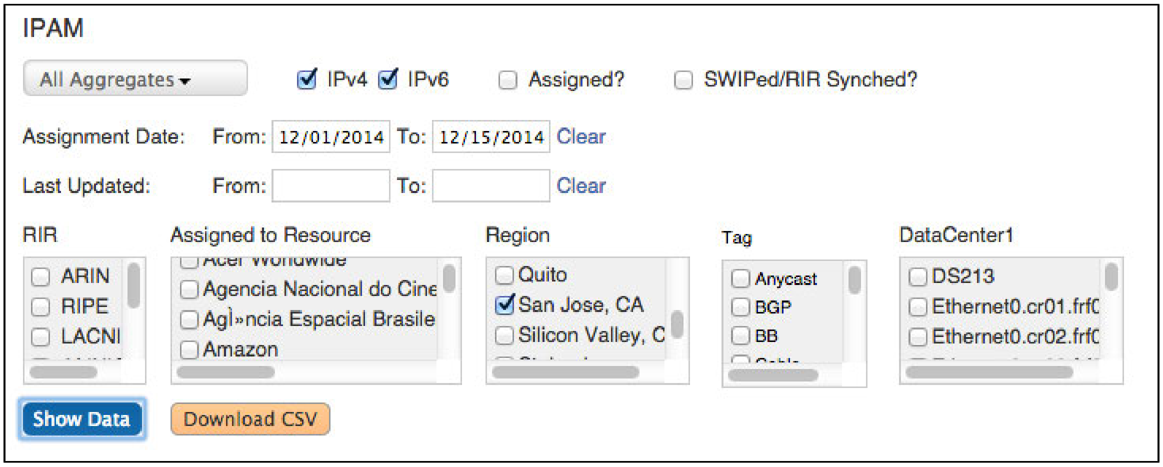


IPAM

The IPAM report is highly customizable, allowing you to view information for all aggregates or selected blocks.

Required Fields: IPv4 and/or IPv6 must be selected for the report.

Optional Fields: Assigned, SWIP status, Assignment / Update dates, RIR, Assigned to Resource, Region, Tag, and Generic Code (in this case, "Datacenter1") are all optional parameters to narrow your results.

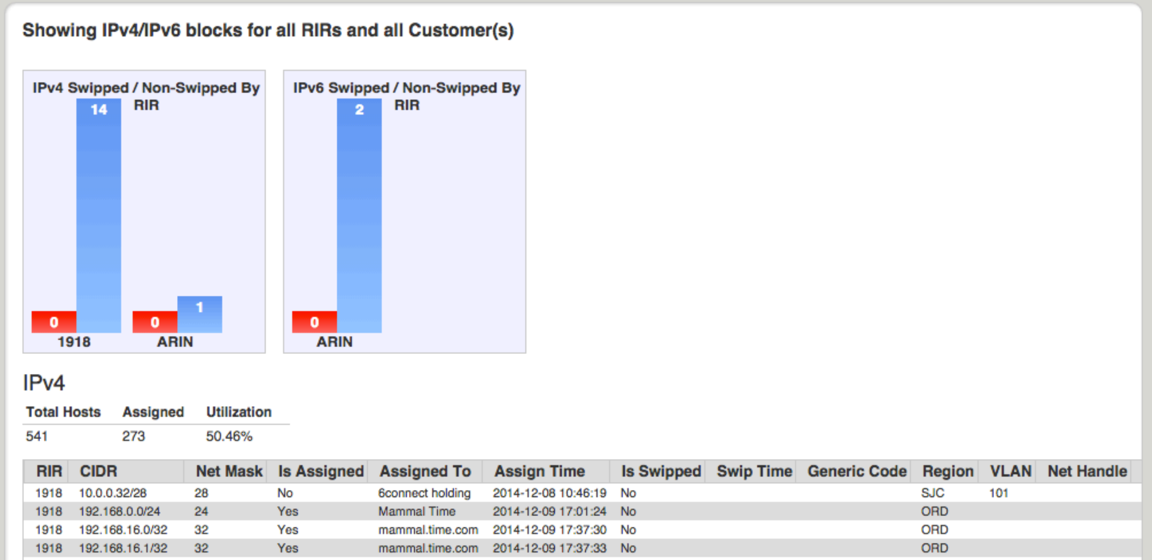

IPAM

All Aggregates ☑ IPv4 ☑ IPv6 ☐ Assigned? ☐ SWIPed/RIR Synched?

Assignment Date: From: 12/01/2014 To: 12/15/2014 Clear

Last Updated: From: To: Clear

Clicking on "Show Data" will show bar charts for Swipped/ Non-Swipped by RIR, host and utilization stats, as well as detailed block information. To export the data to .csv, simply select "Download CSV".


Showing IPv4/IPv6 blocks for all RIRs and all Customer(s)

IPv4 Swipped / Non-Swipped By RIR
0
14
1918
0
1
ARIN
IPv6 Swipped / Non-Swipped By RIR
0
2
ARIN

IPv4

Total Hosts	Assigned	Utilization
541	273	50.46%

RIR	CIDR	Net Mask	Is Assigned	Assigned To	Assign Time	Is Swipped	Swip Time	Generic Code	Region	VLAN	Net Handle
1918	10.0.0.32/28	28	No	6connect holding	2014-12-08 10:46:19	No			SJC	101	
1918	192.168.0.0/24	24	Yes	Mammal Time	2014-12-09 17:01:24	No			ORD		
1918	192.168.16.0/32	32	Yes	mammal.time.com	2014-12-09 17:37:30	No			ORD		
1918	192.168.16.1/32	32	Yes	mammal.time.com	2014-12-09 17:37:33	No			ORD		

Platform Documentation – Part 2

ProVision

Application Version 5.0.4

Covering:

- Admin Guide
- Developer Tools
- Help & Support

For additional information, please visit http://docs.6connect.com or contact 6connect at support@6connect.com

ProVision Admin Guide

Admin Guide

The ProVision Admin Guide provides information on features accessible with Admin permissions within ProVision. For more detailed information on features accessible in the standard user tabs , see the ProVision User Guide.

Table of contents

Admin Preferences

Overview

Details

dnsconfig

License Info

This section provides basic information on your 6connect license including the option to view the *EULA* and check your license status.

Application Settings

Time Zone: Supported Time zones are listed here: {EXT} http://www.php.net/manual/en/timezones.php. Default value is ('America/Los_Angeles') and can be modified at any time via the drop down menu

Company Name: Enter the preferred name for your company to be used.

Generic Name: This "short" name is used in abbreviated location for the "Customer" tab label, "Customer" and "Site" are common entries.

Peering Parameters

ASN : Enter the ASN that will be used

VRF Support: Check to enable adding the VRF gadget to the router Section. Currently, only supports Cisco routers.

Backup Parameters (local install only)

Enable mysql offsite backup : This is enabled by default. Go to the Backup section for details on this feature.

Location of mysqldump: This is the location of the mysqldump directory.

Logging Options

Log table size: This is the maximum number of records to store in the log table. Default value is 50,000,000.

Rows to remove at limit: When the value for log_table_max is reached, the number of rows to be cut from the table is the number assigned to this variable. Default value is 10,000 rows.

Local Syslog Enable: Check the box to enable syslog functionality or for local logging to the database only

Remote Log IP: Target IP address that we will send log information to

Remote Log Port: Port number for the syslog server you will send log information to

Remote Log Method: Select TCP, UDP, SSL from the dropdown for the log delivery method

Remote Log Backup IP: Target IP address for the Backup syslog server you will send log information to

Remote Log Backup Port: Port number for the Backup syslog server you will send log information to

Remote Log Backup Method: Select TCP, UDP, SSL from the dropdown for the log delivery method

Remote Log Type: Select SysLog format or JSON output

Remote Log Facility: Select the Facility - applies to syslog only

Authentication Options

Maximum Session Idle: This setting (minutes) controls how long a session can stay idle before being forced to log in again.

RADIUS authentication options (local install only) - for implementation details, go here

Radius Enable: Check this box to enable RADIUS functionality.

Radius Server Address: Set to the IP address of your radius server. If this is specified, it will force authentication over radius.

Radius Authentication Port: Set to the port for authentication. Default port is 1812

Radius Accounting Port: Set to the port for radius accounting. Default port is 1813

Radius Key: Set to the shared key of your radius server

LDAP authentication - for implementation details, go here

LDAP Enable: check the box to enable LDAP functionality.

LDAP Server Address: Set the IP address of your LDAP server.

LDAP Port: Set the port for your LDAP server

LDAP Security: Select the security method of your LDAP server - SSL, TLS or None

LDAP Auth DN/Fetch DN: These strings are used to first authentication the 6connect user and then to retrieve their permissions. The string '%LOGIN%' should be inserted in place of the user's common name both strings. (ex: cn=%LOGIN%,ou=people,dc=6connect,dc=com)

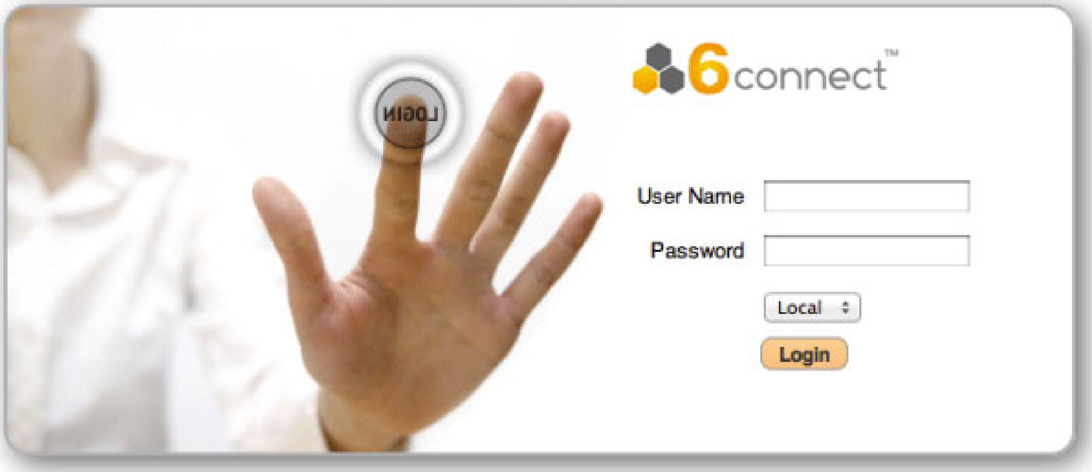
Mapping Permissions to 6connect schema: To integrate 6connect permissions with your existing directory structure then you will need the 6connect schema. It should snap in with any existing LDAP structure and allow you to assign 6connect permissions to your existing users. You can download a copy of the schema from this section.

Templates

This is where you can edit outgoing email templates for IP block assignments

Authentication Options

Authentication



Depending on the authentication method chosen by your organization, there may be a separate authentication to login or logout of the application via the drop down menu.

Change Order of Login Menu Dropdown
The drop down menu defaults to "local" - if you are using another authentication method, you can use the following to change the default ordering and improve usability.

In the file data/globals.php, add a line:

```
define('DEFAULT_LOGIN_TYPE', 'ldap');
```

Acceptable values instead of 'ldap' are 'local', 'radius' and 'ldap'.

By default, credentials are managed via the local authentication mechanism provided by 6connect. See the Users & Permissions section for more detail on the local authentication configuration.

- LDAP Authentication
- LDAP Authentication on Windows Server
- RADIUS Authentication

LDAP Authentication

LDAP Authentication

Starting in 3.6, ProVision supports LDAP authentication. To an LDAP server for authentication, you must perform the following three procedures:

- Configure the LDAP Server
- Test the LDAP Server
- Configure ProVision for LDAP Authentication

LDAP Schema - Example

```
attributetype (1.3.6.1.4.1.5023215.2.3.21 NAME 'sixConnGroup'
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )

objectclass ( 1.3.6.1.4.1.5023215.2.4.2 NAME 'sixConnectPermissionsV2'
        DESC '6Connect Permissions Object v2'
        SUP top AUXILIARY
        MUST ( sixConnGroup ) )
```

LDAP User Example

SSH into your openLDAP server and create a new 'ldif' file. Example:

```
dn: cn=JoeSmith,ou=people,dc=6connect,dc=com
cn: JoeSmith
sn: JoeSmith
objectclass: top
objectclass: person
objectclass: sixConnectPermissionsV2
sixConnGroup: "Global Admins"
sixConnGroup: "IT Engineering"
sixConnGroup: "Sales"
sixConnGroup: "Customer Admin"
userPassword: testpass
```

To create a new user, make a new ldif file and change all instances of "JoeSmith" to whatever username you wish to create and update the password. Keep all of the object class definitions as listed above. Add a sixConnGroup declaration for each ProVision user group a user is in.

After the file is created, run the following command to add the new user to LDAP server:

```
ldapadd -h [SERVER] -x -f [LDIF FILE] -D [ROOTDN] -w [ROOT PW] -v
```

Example:

```
ldapadd -h localhost -x -f 6connect.ldif -D "cn=Manager,dc=6connect,dc=com" -w secret -v
```

The user will now be active in openLDAP and can be used to login to ProVision.

Test the LDAP Server

To query the LDAP server, run the following command on any server which has openLDAP enabled:

```
ldapsearch -h [IPADDRESS] -D [DOMAIN] -w [PASSWORD] [USER]
```

Note: We have not been able to use a v6 address at with this tool, even though multiple sources say it should work.

At the end of the command where [USER] is specified, user or groups can be used (in LDAP format) to query.

Example:

```
ldapsearch -h 50.240.195.129 -D "cn=JoeSmith,ou=people,dc=6connect,dc=com" -w testpass
"cn=JoeSmith"
```

Configure ProVision for LDAP Authentication

To configure the use of LDAP authentication with ProVision, follow the steps below.

- Log into 6connect ProVision
- Go to Admin -> General Settings -> Authentication
- Click the LDAP Enable checkbox.
- Fill in the hostname or ip address, authentication port, LDAP Security, Auth DN, and Fetch DN. An example is below:

LDAP Server Address: 52.240.195.12

LDAP Port: 389 (or SSL/TLS port is 636)

LDAP Security: None

LDAP Auth DN: cn=%LOGIN%,ou=people,dc=6connect,dc=com

LDAP Fetch DN: cn=%LOGIN%

Setting default login authentication options
In the login screen, you would select the authentication method from the dropdown. If you like, you can set the default login option in the following way:

Go to the /data/globals.php and open in vi (or other editor). Add in the following text as the last line of the file (before the closing ?>)

define('DEFAULT_LOGIN_TYPE', 'radius');

Acceptable values are "local", "radius" and "ldap". If this line is not present in globals.php, the default option is "local".

Using SSL encryption
To use SSL encryption with LDAP, the ldap.conf file must be correctly configured on the ProVision server.

Typically, the LDAP configuration file is kept at "/etc/ldap/ldap.conf". Make sure the following line is present:

```
TLS_REQCERT allow
```

and restart the webserver.

LDAP Authentication on Windows Server

LDAP Authentication on Windows Server

Starting in 3.6, ProVision supports LDAP authentication (including Windows Server!). To setup an LDAP server for authentication, you must perform the following procedures:

- Configure the LDAP Server (Extend the Schema, Adding an Attribute/Schema Object)
- Test the LDAP Server
- Configure ProVision for LDAP Authentication

Configuring the LDAP functions on your Windows Server

You should confirm these steps with your LDAP admin - the purpose of this walkthrough is to provide some level of detail on how to extend LDAP functionality to support integration with an application like ProVision.

Step 1: Prepare to extend the Schema (http://technet.microsoft.com/en-us/library/cc961754.aspx)

This is not a minor operation and requires interaction with various control modification areas of Windows Server:

- If you have not modified the schema before, you will need to use the Active Directory Schema console on a DC (Domain Controller) to permit write access to the DC schema.
- Since the schema object has dedicated permissions, admins must be a member of the Schema Administrator group (Schema Admins).
- Note that the DC that is holding the Schema Master Role is the only one allowed to write to it.

Step 2: Decide on method for Installing/executing Schema Extensions (http://technet.microsoft.com/en-us/library/cc961742.aspx)

If you have already used other AD integrations, this should be straightforward. We recommend using the LDIF script method

Step 3: Add and Modify a Schema Object (http://technet.microsoft.com/en-us/library/cc961575.aspx)

To add a new attribute to the schema, you first have to create a attribute object. The you will need to complete the following steps:

- Select a name for the attribute (ProVision assumes that the name will be '**sixConnGroup**')
- Get a valid Object Identifier (OID) from an issuing authority (http://msdn.microsoft.com/en-us/library/ms677620.aspx)

Generate an Object Identifier
Microsoft has released a script that can generate an Object Identifier (OID):
https://gallery.technet.microsoft.com/scriptcenter/56b78004-40d0-41cf-b95e-6e795b2e8a06

- Document the attribute syntax
- Confirm that the attribute should be single-value
- Confirm the attribute indexing behavior
- Decide if the attribute needs to be distributed to the Global Catalog

LDAP Schema - Example

```
attributetype (1.3.6.1.4.1.5023215.2.3.21 NAME 'sixConnGroup'
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.15 )

objectclass ( 1.3.6.1.4.1.5023215.2.4.2 NAME 'sixConnectPermissionsV2'
        DESC '6Connect Permissions Object v2'
        SUP top AUXILIARY
        MUST ( sixConnGroup ) )
```

LDAP User Example

SSH into your openLDAP server and create a new 'ldif' file. Example:

```
dn: cn=JoeSmith,ou=people,dc=6connect,dc=com
cn: JoeSmith
sn: JoeSmith
objectclass: top
objectclass: person
objectclass: sixConnectPermissionsV2
sixConnGroup: "Global Admins"
sixConnGroup: "IT Engineering"
sixConnGroup: "Sales"
sixConnGroup: "Customer Admin"
userPassword: testpass
```

To create a new user, make a new ldif file and change all instances of "JoeSmith" to whatever username you wish to create and update the password. Keep all of the object class definitions as listed above. Add a sixConnGroup declaration for each ProVision user group a user is in.

After the file is created, run the following command to add the new user to LDAP server:

```
ldapadd -h [SERVER] -x -f [LDIF FILE] -D [ROOTDN] -w [ROOT PW] -v
```

Example:

```
ldapadd -h localhost -x -f 6connect.ldif -D "cn=Manager,dc=6connect,dc=com" -w secret -v
```

The user will now be active in openLDAP and can be used to login to ProVision.

Test the LDAP Server

To query the LDAP server, run the following command on any server which has openLDAP enabled:

```
ldapsearch -h [IPADDRESS] -D [DOMAIN] -w [PASSWORD] [USER]
```

Note: We have not been able to use a v6 address at with this tool, even though multiple sources say it should work.

At the end of the command where [USER] is specified, user or groups can be used (in LDAP format) to query.

Example:

```
ldapsearch -h 50.240.195.129 -D "cn=JoeSmith,ou=people,dc=6connect,dc=com" -w testpass
"cn=JoeSmith"
```

Configure ProVision for LDAP Authentication

To configure the use of LDAP authentication with ProVision, follow the steps below.

- Log into 6connect ProVision
- Go to Admin -> General Settings -> Authentication
- Click the LDAP Enable checkbox.
- Fill in the hostname or ip address, authentication port, LDAP Security, Auth DN, and Fetch DN. An example is below:

LDAP Server Address: 52.240.195.12

LDAP Port: 389 (or SSL/TLS port is 636)

LDAP Security: None

LDAP Auth DN: cn=%LOGIN%,ou=people,dc=6connect,dc=com

LDAP Fetch DN: cn=%LOGIN%

Setting default login authentication options
In the login screen, you would select the authentication method from the dropdown. If you like, you can set the default login option in the following way:

Go to the /data/globals.php and open in vi (or other editor). Add in the following text as the last line of the file (before the closing ?>)

define('DEFAULT_LOGIN_TYPE', 'radius');

Acceptable values are "local", "radius" and "ldap". If this line is not present in globals.php, the default option is "local".

Using SSL encryption
To use SSL encryption with LDAP, the ldap.conf file must be correctly configured on the ProVision server.

Typically, the LDAP configuration file is kept at "/etc/ldap/ldap.conf". Make sure the following line is present:

```
TLS_REQCERT allow
```

and restart the webserver.

RADIUS Authentication

RADIUS Authentication

Starting in 3.0, ProVision supports 6connect vendor-specific attributes (VSAs) for use with RADIUS authentication. To use these attributes, you must perform the following procedures:

- RADIUS Authentication
    - Add the 6connect VSA to the Radius Installation
    - Configure Radius Accounts
    - Test Radius Accounts
    - Configure ProVision for Radius Authentication

Add the 6connect VSA to the Radius Installation

To use the 6connect VSA, the attributes must be defined on the RADIUS server. Add the following RADIUS dictionary file to your RADIUS server and name it dictionary.6connect:

Important Note: Between version 3.9.3 and 4.0, the permissions structure for ProVision was significantly changed. Make sure you following the version specific instructions below.

ProVision 3.9.3 and prior:
Click here to expand...

3.9.3 VSA text file

```
VENDOR          6connect               36009

BEGIN-VENDOR    6connect

ATTRIBUTE       priv_admin              10      integer
#This is used to give a user administrative access to the application

ATTRIBUTE       priv_ipam_c             20      integer
#This allows a user to create IP blocks
ATTRIBUTE       priv_ipam_d             21      integer
#This allows a user to delete IP blocks
ATTRIBUTE       priv_ipam_m             22      integer
#This allows a user to modify IP blocks
ATTRIBUTE       priv_swip               23      integer
#This allows a user to SWIP IP blocks
ATTRIBUTE       priv_email              24      integer
#This allows a user to email IP block information
ATTRIBUTE       priv_ipam_v             25      integer
#This allows a user to view IP block information

ATTRIBUTE       priv_dns_c              30      integer
#This allows a user to create DNS Zones
ATTRIBUTE       priv_dns_d              31      integer
#This allows a user to delete DNS Zones
ATTRIBUTE       priv_dns_m              32      integer
#This allows a user to modify DNS Zones
ATTRIBUTE       priv_dns_v              33      integer
#This allows a user to view DNS Zones

ATTRIBUTE       priv_cust_c             40      integer
#This allows a user to create Customer records
ATTRIBUTE       priv_cust_d             41      integer
#This allows a user to delete Customer records
ATTRIBUTE       priv_cust_m             42      integer
#This allows a user to modify Customer records
ATTRIBUTE       priv_cust_v             43      integer
#This allows a user to view Customer records

ATTRIBUTE       priv_peer_c             50      integer
#This allows a user to create peering sessions
ATTRIBUTE       priv_peer_d             51      integer
#This allows a user to delete peering sessions
ATTRIBUTE       priv_peer_m             52      integer
#This allows a user to modify peering sessions
ATTRIBUTE       priv_peer_v             53      integer
#This allows a user to view peering sessions

ATTRIBUTE       priv_logs               60      integer
#This allows a user to have access to the logs tab in the application

END-VENDOR      6connect
```

ProVision 4.0 and greater:

Click here to expand...

```
VENDOR                  6connect                        36009

BEGIN-VENDOR    6connect

ATTRIBUTE               6connect_user_group             10              string
#A 6connect User Group to which this user belongs.

END-VENDOR      6connect
```

Make sure to add the following to the primary dictionary file: $INCLUDE dictionary.6connect

Configure Radius Accounts

On the Radius server, configure the user accounts that will have access to the ProVision system.

An example of a ProVision account configuration for the user file on a Freeradius system for version 3.9.3 and prior:

```
#A user with full IPAM prvileges and view only DNS privs

joe Cleartext-Password := "testing128"
   priv_admin = 1,
   priv_ipam_v = 1,
   priv_ipam_c = 1,
   priv_ipam_d = 1,
   priv_ipam_m = 1,
   priv_swip = 1,
   priv_email = 1,
   priv_dns_v = 1
```

An example of a ProVision account configuration for the user file on a Freeradius system for version 4.0 and greater:

Example: To add a new radius user, edit the 'users' file found at /etc/raddb/users and add a block like:

Setting up a RADIUS account

```
bobber  Cleartext-Password := "hello"
        6connect_user_group = "Global Admins,Group 2,Group 1,Group Nonexistent"
```

Note on RADIUS attributes
There are many Radius attributes, but '6connect_user_group' is the one used by 6connect ProVision and it is just a comma-separated list of all the group names that the user belongs to.

Test Radius Accounts

For 3.9.3 and prior, test and response should look like the following:

```
#>radtest test test 50.23.215.162 6connect
  Sending Access-Request of id 179 to 50.23.215.162 port 1812
  User-Name = "test"
  User-Password = "test"
  NAS-IP-Address = 10.124.47.6
  NAS-Port = 0
  Message-Authenticator = 0x00000000000000000000000000000000
rad_recv: Access-Accept packet from host 50.23.215.162 port 1812, id=179, length=68
  priv_admin = 1
  priv_ipam_c = 1
  priv_ipam_m = 1
  priv_ipam_d = 1
```

For 4.0 and higher, test and response should look like the following:

<insert example>

Configure ProVision for Radius Authentication

To configure the use of Radius authentication with ProVision, follow the steps below.

- Log into 6connect ProVision
- Go to Admin -> General Settings -> Authentication
- Ensure that Radius functions are marked as available. Radius functions are always available on 6connect cloud instances. Radius functions are available on VM Images and Local Installations only if the relevant PHP Pear Radius Libraries have been installed.
- Click the Radius Enable checkbox.
- Fill in the hostname or ip address, authentication ports, accounting port, and shared Radius key as specified.

⚠ **Setting default login options**
In the login screen, you would select the authentication method from the dropdown. If you like, you can set the default login option in the following way:

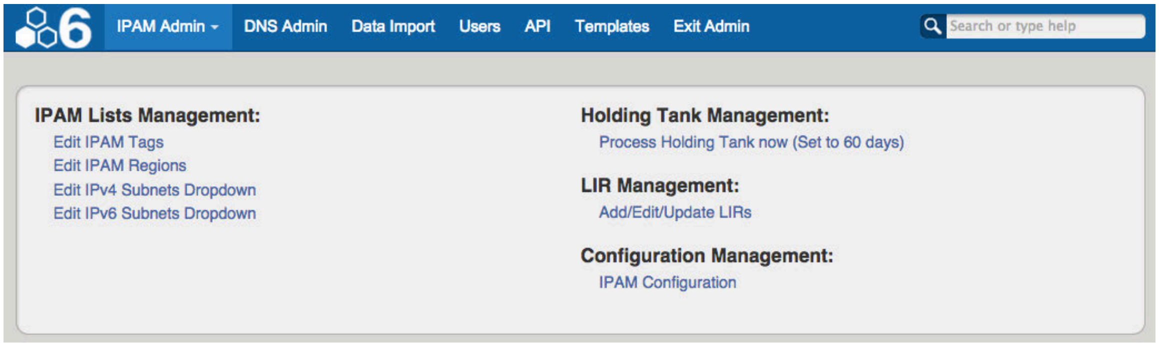
Go to the /data/globals.php and open in vi (or other editor). Add in the following text as the last line of the file (before the closing ?>)

define('DEFAULT_LOGIN_TYPE', 'radius');

Acceptable values are "local", "radius" and "ldap". If this line is not present in globals.php, the default option is "local".

IPAM Administration

Overview



IPAM Lists Management:

- Edit IPAM Tags
- Edit IPAM Regions
- Edit IPv4 Subnets Dropdown
- Edit IPv6 Subnets Dropdown

Holding Tank Management:

- Process Holding Tank now (Set to 60 days)

LIR Management:

- Add/Edit/Update LIRs

Configuration Management:

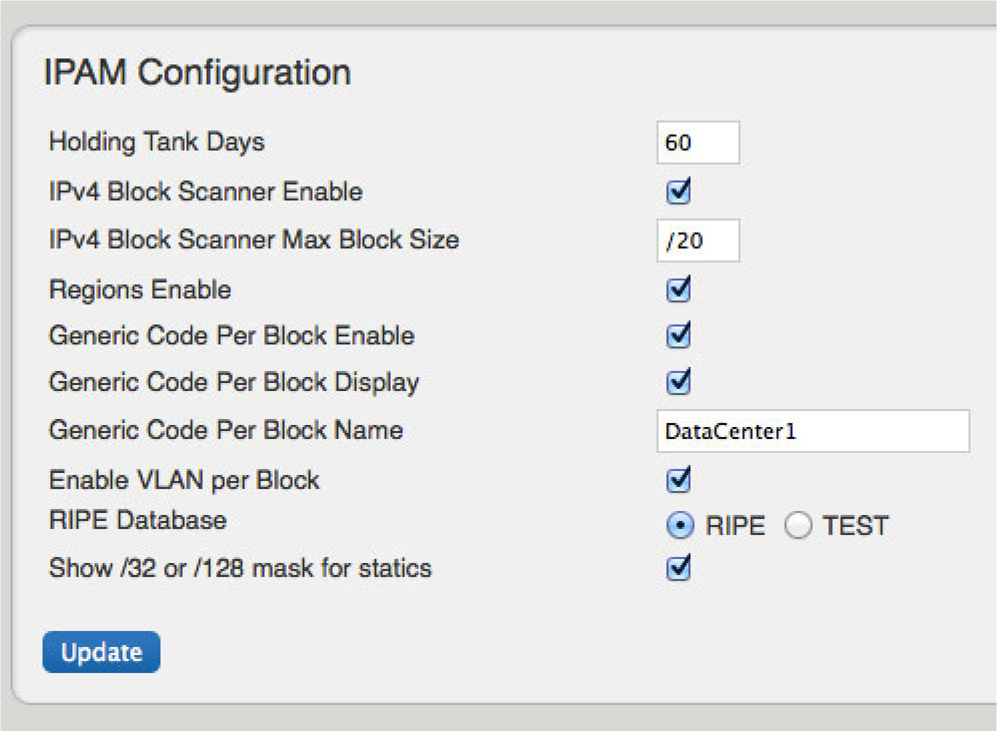
- IPAM Configuration

IPAM Administration is accessed through the Admin area of ProVision. It includes sections to manage IPAM Lists, the Holding Tank, LIR, and IPAM Configuration.

IPAM Lists Management

These links are to the respective IPAM Parameters that are available for customization. Everything from Tags to RIRs - this is where to start. Go to the IPAM Parameters page for more details and examples for customization.

IPAM Configuration



IPAM Configuration

Holding Tank Days	60
IPv4 Block Scanner Enable	☑
IPv4 Block Scanner Max Block Size	/20
Regions Enable	☑
Generic Code Per Block Enable	☑
Generic Code Per Block Display	☑
Generic Code Per Block Name	DataCenter1
Enable VLAN per Block	☑
RIPE Database	● RIPE ○ TEST
Show /32 or /128 mask for statics	☑

Holding Tank Days: This is the number of days that a block will be held in "Holding" status before being available to be moved to the Available pool, and thus ready to be assigned. By default this is initially set to 30 days.

IPv4 Block Scanner Enable: This is a beta feature that allows a user to scan a block of IPv4 space and show host counts of responding addresses.

Regions Enable: Check the box to enable "Region" tags for IP blocks. This will add an additional column to the default IPAM screen. It is treated similarly to a standard tag. You can set the values from the "Edit Tags" function and modify the values list in the IPAM Admin screen "Edit Regions".

Generic Code Per Block Enable: Check this box to enable this function. This will enable an additional field per IP Block.

Generic Code Per Block Display: Check this box to display this field.

Generic Code Per Block Name: This is the label for the Generic Code to be displayed.

Enable VLAN per Block: This toggle allows users to specify VLANs via the "Edit Tag" function. With this feature enabled, you can filter by VLAN tag in the primary IPAM interface.

Holding Tank Management

When IPv4/IPv6 resources are reclaimed, they are placed into the "Holding Tank". This feature allows for a block to stay out of the available address pools until the administrator approves it. Go to the Holding Tank Management page for more details.

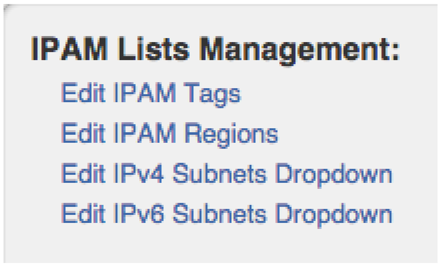
LIR Management and Use

ProVision supports multiple LIRs from the UI. This allows users to select from various LIRs when they want to update SWIP/RPSL information for a subnet allocation. Go to the LIR Management and Use page for more details.

IPAM Parameters

Overview

The elements



IPAM Lists Management:

Edit IPAM Tags
Edit IPAM Regions
Edit IPv4 Subnets Dropdown
Edit IPv6 Subnets Dropdown

Editing Tags

When you are applying properties to IP blocks, you have the option to edit tags. Tags are used in a number of ways and can be edited from this screen. You can specify tag values along with sorting options to make it simpler to use. Regions are used by the IPAM Gadget and the IPAM Management UI).

Editing Regions

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

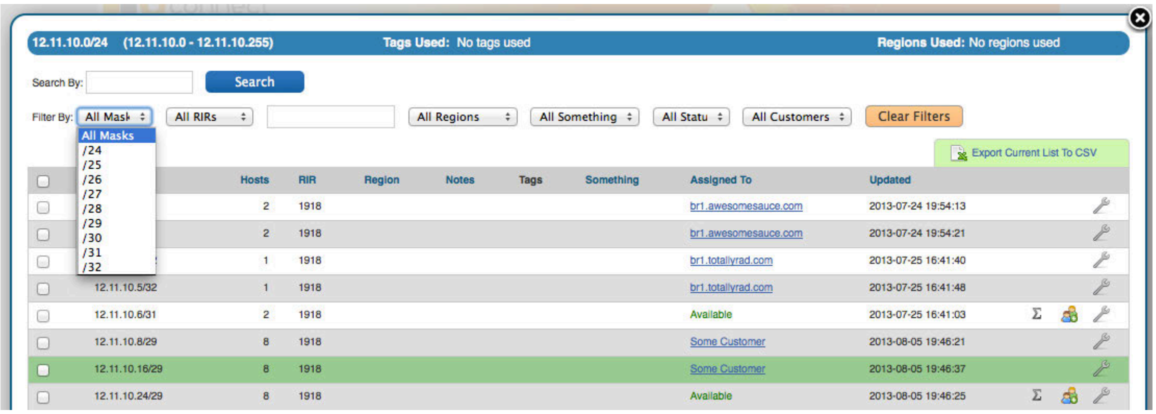
Editing Subnet Dropdowns (used by the **IPAM Gadget**)

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

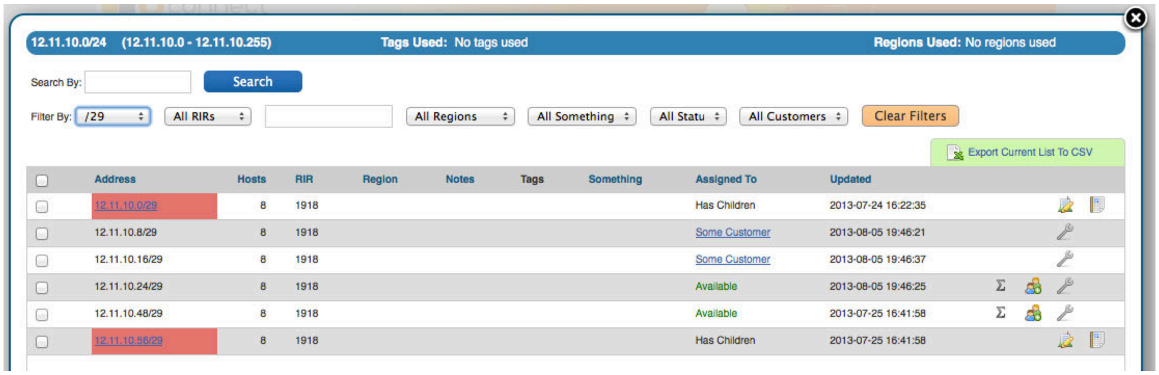
Edit Exact Filter Dropdowns for Filter by Netmask

On the IPAM Manage screen, you have an option to Filter the view by selected Subnet Mask (dropdown).



☐		Hosts	RIR	Region	Notes	Tags	Something	Assigned To	Updated	
☐		2	1918					br1.awesomesauce.com	2013-07-24 19:54:13	
☐		2	1918					br1.awesomesauce.com	2013-07-24 19:54:21	
☐		1	1918					br1.totallyrad.com	2013-07-25 16:41:40	
☐	12.11.10.5/32	1	1918					br1.totallyrad.com	2013-07-25 16:41:48	
☐	12.11.10.6/31	2	1918					Available	2013-07-25 16:41:03	Σ
☐	12.11.10.8/29	8	1918					Some Customer	2013-08-05 19:46:21	
☐	12.11.10.16/29	8	1918					Some Customer	2013-08-05 19:46:37	
☐	12.11.10.24/29	8	1918					Available	2013-08-05 19:46:25	Σ

With the Filter By view enabled, the user then gets a simpler view. The user can then click on the red block, and view the additional assignments/allocations underneath it.



12.11.10.0/24 (12.11.10.0 - 12.11.10.255) **Tags Used:** No tags used **Regions Used:** No regions used

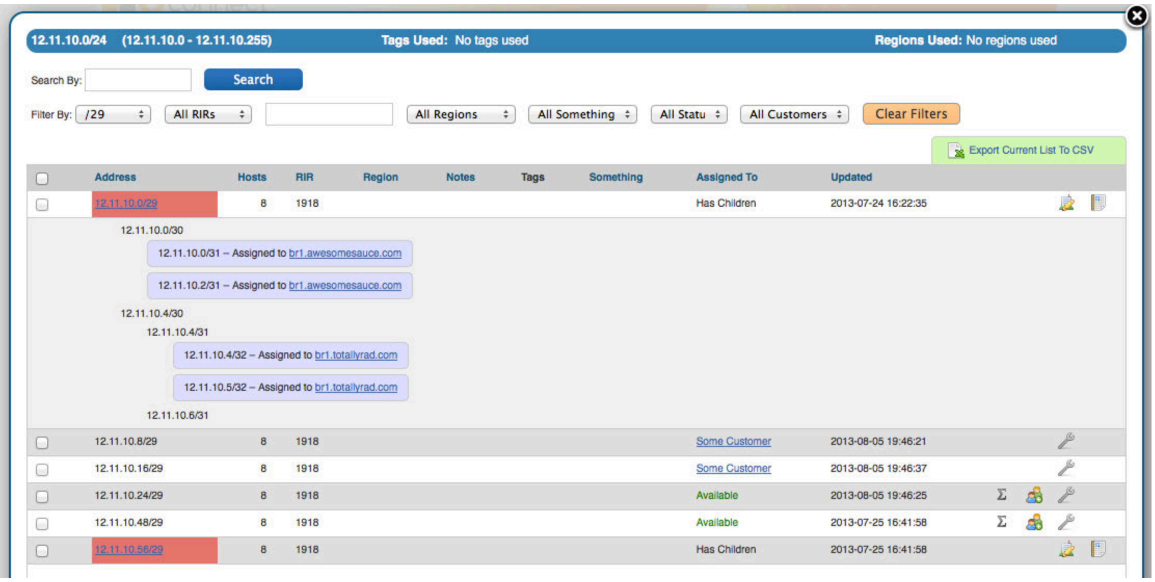
Search By: Search

Filter By: /29 | All RIRs | All Regions | All Something | All Statu | All Customers | Clear Filters

Export Current List To CSV

☐	Address	Hosts	RIR	Region	Notes	Tags	Something	Assigned To	Updated
☐	12.11.10.0/29	8	1918					Has Children	2013-07-24 16:22:35
☐	12.11.10.8/29	8	1918					Some Customer	2013-08-05 19:46:21
☐	12.11.10.16/29	8	1918					Some Customer	2013-08-05 19:46:37
☐	12.11.10.24/29	8	1918					Available	2013-08-05 19:46:25
☐	12.11.10.48/29	8	1918					Available	2013-07-25 16:41:58
☐	12.11.10.56/29	8	1918					Has Children	2013-07-25 16:41:58

Here is the view after clicking on the block. The user can also see the SWIP/RPSL status for a given allocation/assignment if applicable.



12.11.10.0/24 (12.11.10.0 - 12.11.10.255) **Tags Used:** No tags used **Regions Used:** No regions used

Search By: Search

Filter By: /29 | All RIRs | All Regions | All Something | All Statu | All Customers | Clear Filters

Export Current List To CSV

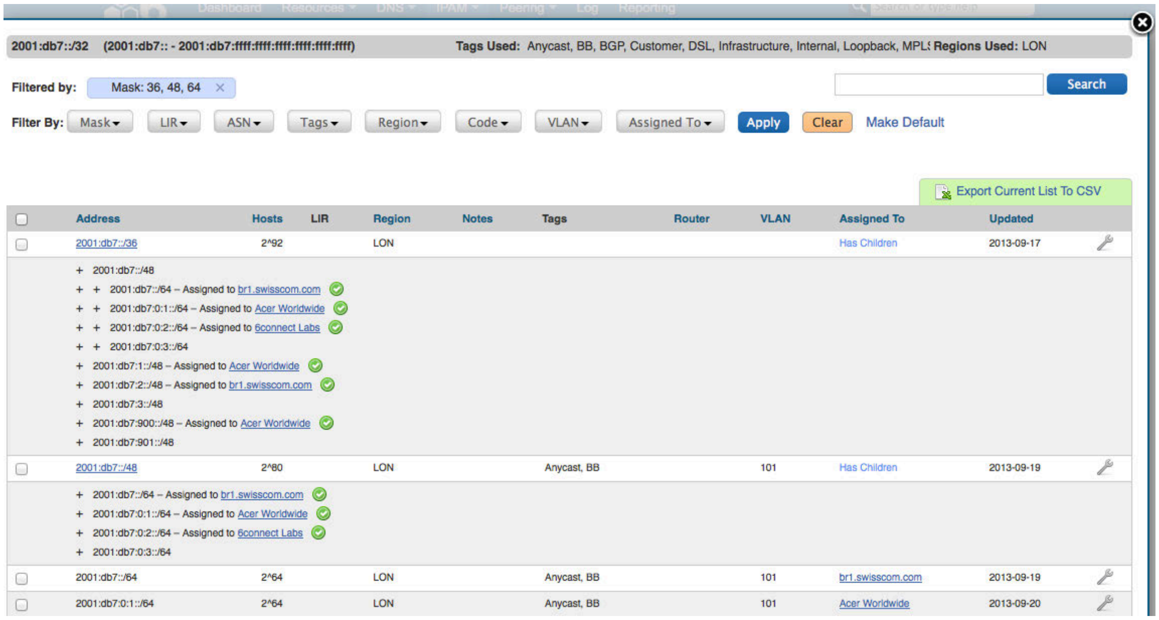
☐	Address	Hosts	RIR	Region	Notes	Tags	Something	Assigned To	Updated
☐	12.11.10.0/29	8	1918					Has Children	2013-07-24 16:22:35

12.11.10.0/30
- 12.11.10.0/31 – Assigned to br1.awesomesauce.com
- 12.11.10.2/31 – Assigned to br1.awesomesauce.com

12.11.10.4/30
- 12.11.10.4/31
  - 12.11.10.4/32 – Assigned to br1.totallyrad.com
  - 12.11.10.5/32 – Assigned to br1.totallyrad.com
- 12.11.10.6/31

☐	Address	Hosts	RIR	Region	Notes	Tags	Something	Assigned To	Updated
☐	12.11.10.8/29	8	1918					Some Customer	2013-08-05 19:46:21
☐	12.11.10.16/29	8	1918					Some Customer	2013-08-05 19:46:37
☐	12.11.10.24/29	8	1918					Available	2013-08-05 19:46:25
☐	12.11.10.48/29	8	1918					Available	2013-07-25 16:41:58
☐	12.11.10.56/29	8	1918					Has Children	2013-07-25 16:41:58

Note that as of 4.1, there are more options for managing filter options and the ability to set a view as Default



2001:db7::/32 (2001:db7:: - 2001:db7:ffff:ffff:ffff:ffff:ffff:ffff) **Tags Used:** Anycast, BB, BGP, Customer, DSL, Infrastructure, Internal, Loopback, MPL! **Regions Used:** LON

Filtered by: Mask: 36, 48, 64 ×

Search

Filter By: Mask | LIR | ASN | Tags | Region | Code | VLAN | Assigned To | Apply | Clear | Make Default

Export Current List To CSV

☐	Address	Hosts	LIR	Region	Notes	Tags	Router	VLAN	Assigned To	Updated
☐	2001:db7::/36	2^92		LON					Has Children	2013-09-17

- + 2001:db7::/48
- + \+ 2001:db7::/64 – Assigned to br1.swisscom.com ✓
- + \+ 2001:db7:0:1::/64 – Assigned to Acer Worldwide ✓
- + \+ 2001:db7:0:2::/64 – Assigned to 6connect Labs ✓
- + \+ 2001:db7:0:3::/64
- + 2001:db7:1::/48 – Assigned to Acer Worldwide ✓
- + 2001:db7:2::/48 – Assigned to br1.swisscom.com ✓
- + 2001:db7:3::/48
- + 2001:db7:900::/48 – Assigned to Acer Worldwide ✓
- + 2001:db7:901::/48

☐	Address	Hosts	LIR	Region	Notes	Tags	Router	VLAN	Assigned To	Updated
☐	2001:db7::/48	2^80		LON		Anycast, BB		101	Has Children	2013-09-19

- + 2001:db7::/64 – Assigned to br1.swisscom.com ✓
- + 2001:db7:0:1::/64 – Assigned to Acer Worldwide ✓
- + 2001:db7:0:2::/64 – Assigned to 6connect Labs ✓
- + 2001:db7:0:3::/64

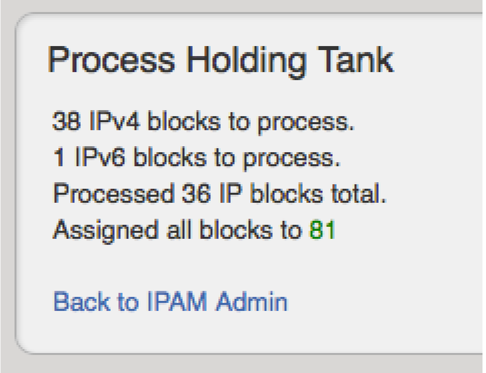
☐	Address	Hosts	LIR	Region	Notes	Tags	Router	VLAN	Assigned To	Updated
☐	2001:db7::/64	2^64		LON		Anycast, BB		101	br1.swisscom.com	2013-09-19
☐	2001:db7:0:1::/64	2^64		LON		Anycast, BB		101	Acer Worldwide	2013-09-20

Holding Tank Management

Holding Tank Management

How it Works

The "**Process Holding Tank now**" link will move any block assigned to "Holding" to its relevant "Available" pool. This command will process **ALL** addresses assigned to "Holding" depending on their age. The default time for release to "Available" is 30 days. If a block has not been in the holding tank for that specified length of time, it will not be released using this feature (it can be released manually per record at any time) . The threshold for the number of days in the Holding Tank is set in the main Admin Preferences page and is customizable.



Process Holding Tank

38 IPv4 blocks to process.
1 IPv6 blocks to process.
Processed 36 IP blocks total.
Assigned all blocks to 81

When an administrator elects to process the Holding Tank, it will show the information above.

Pro-Tip!
If you need to do a bulk "empty" of the holding tank. Set the time for release to "0" days. This will allow you to process the holding tank for all blocks that are in the Holding Tank.

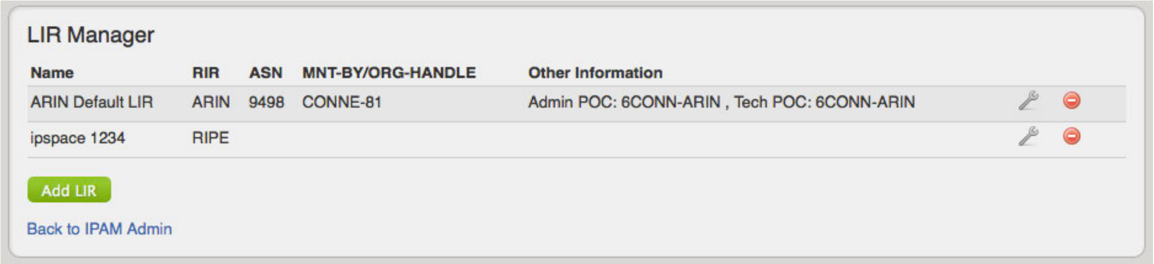
LIR Management and Use

Overview

ProVision supports multiple LIRs (Local Internet Registries) in a single instance. This means that you have the ability to update SWIP/RPSL functions for a given allocation with the LIR information that you wish. When you select the "SWIP" function for a given IP block, you will be presented with a menu where you can select the data that you want to use to update the block.

LIR Setup and Use

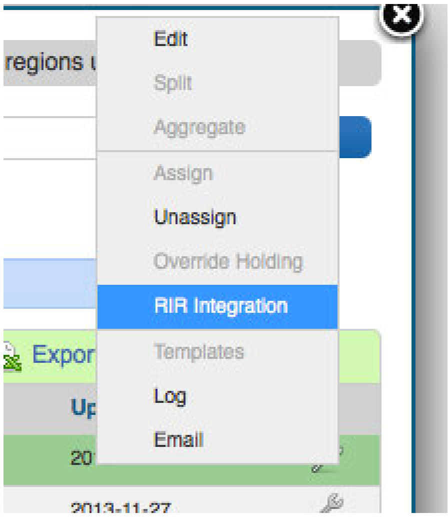
There is an LIR Manager available from the IPAM Admin page.



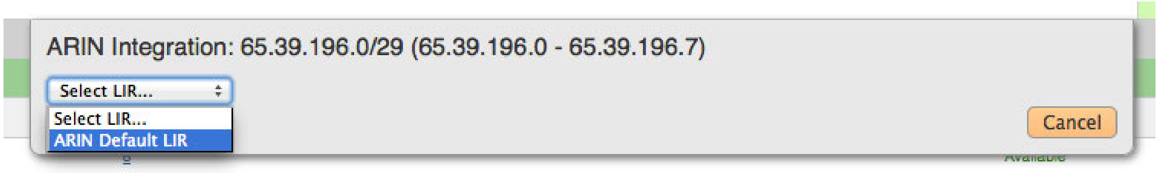
LIR Manager

Name	RIR	ASN	MNT-BY/ORG-HANDLE	Other Information
ARIN Default LIR	ARIN	9498	CONNE-81	Admin POC: 6CONN-ARIN , Tech POC: 6CONN-ARIN
ipspace 1234	RIPE			

Once these have been configured, you will be able to use the **RIR integration** feature from the **Action** menu on the IPAM Manage screen or IPAM Gadget:

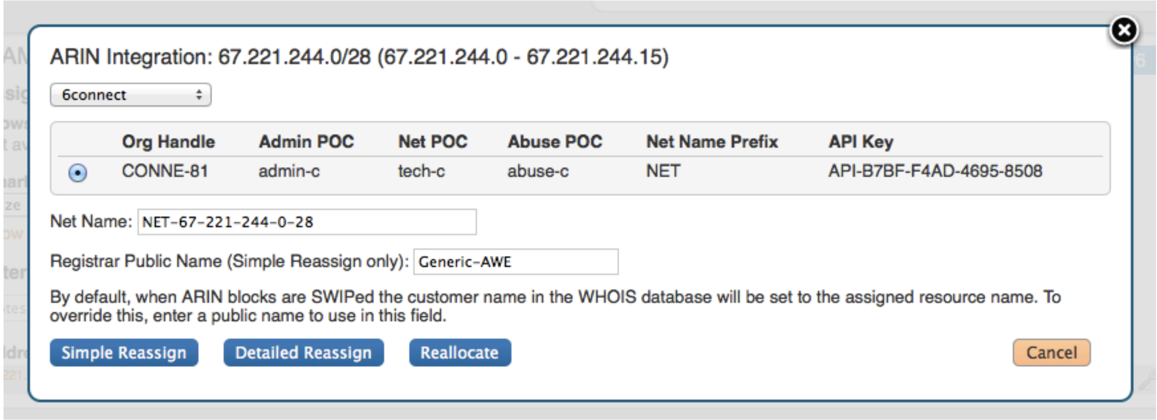


From the menu, you will be prompted to specify the LIR to use:



ARIN Integration: 65.39.196.0/29 (65.39.196.0 - 65.39.196.7)

It will populate the area and then you will have the RIR specific options (see ARIN example below):



ARIN Integration: 67.221.244.0/28 (67.221.244.0 - 67.221.244.15)

	Org Handle	Admin POC	Net POC	Abuse POC	Net Name Prefix	API Key
●	CONNE-81	admin-c	tech-c	abuse-c	NET	API-B7BF-F4AD-4695-8508

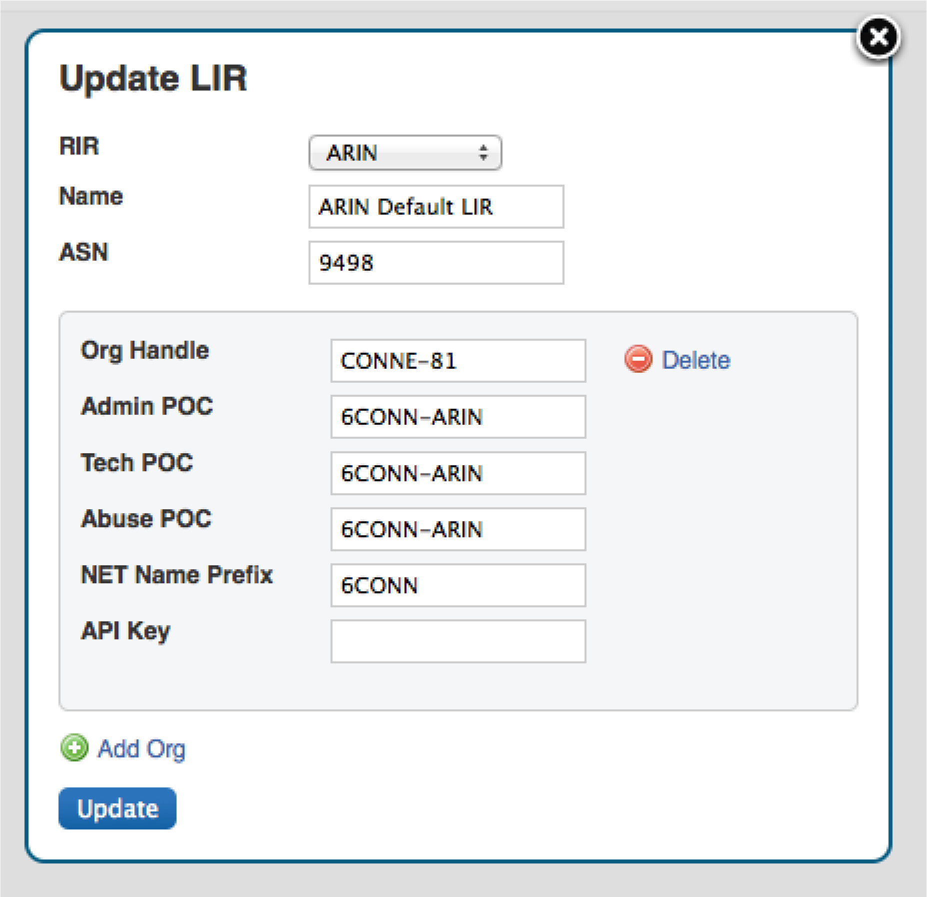
Net Name: NET-67-221-244-0-28

Registrar Public Name (Simple Reassign only): Generic-AWE

By default, when ARIN blocks are SWIPed the customer name in the WHOIS database will be set to the assigned resource name. To override this, enter a public name to use in this field.

After clicking on the **Add LIR** button, you can setup the required data for the specific RIR/LIR combination:

ARIN



Update LIR

RIR: ARIN

Name: ARIN Default LIR

ASN: 9498

Org Handle: CONNE-81

Admin POC: 6CONN-ARIN

Tech POC: 6CONN-ARIN

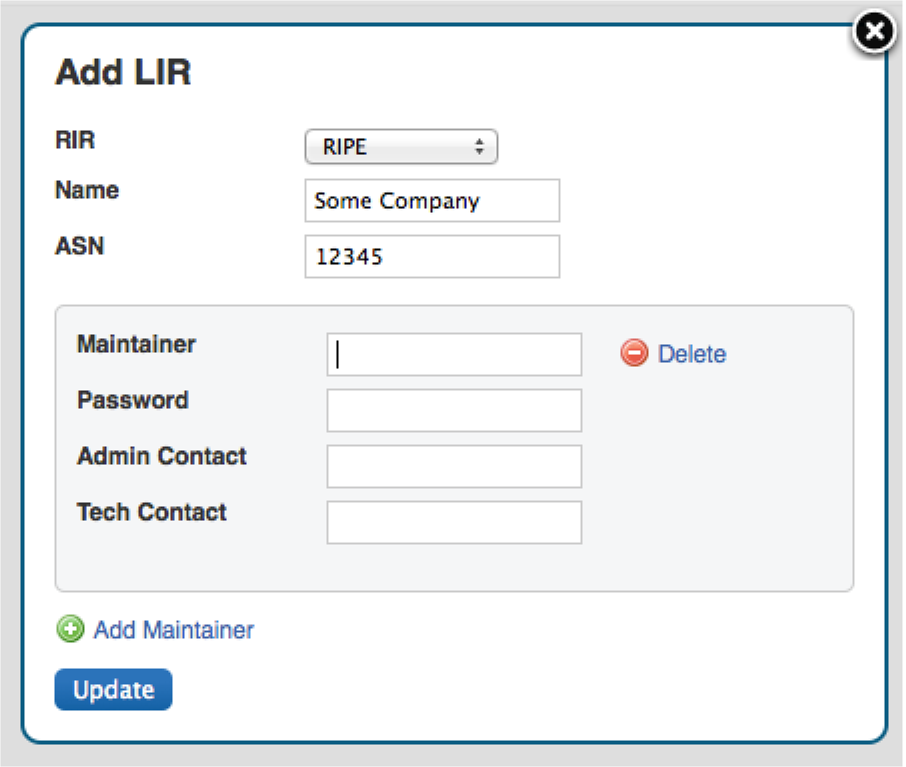
Abuse POC: 6CONN-ARIN

NET Name Prefix: 6CONN

API Key:

Press UPDATE to SAVE!
Make sure to press the Update button or else the LIR data will not save.

RIPE



RIR: RIPE

Name: Some Company

ASN: 12345

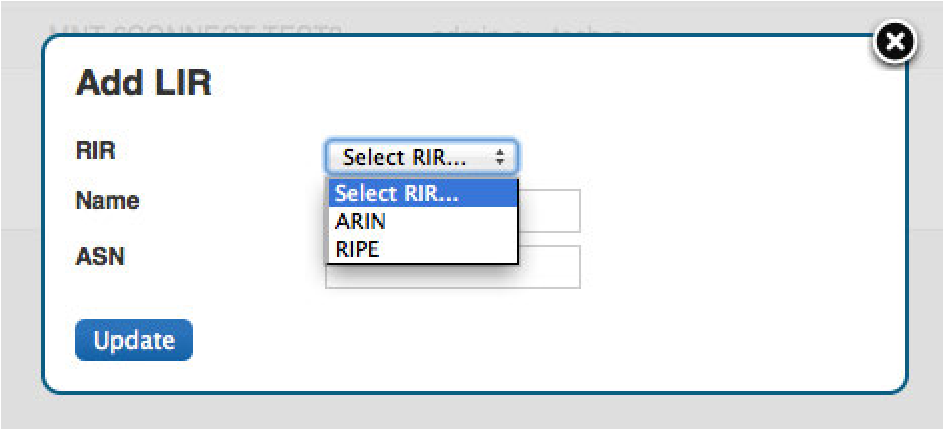
ⓘ **Press UPDATE to SAVE!**

Make sure to press the Update button or else the LIR data will not save.

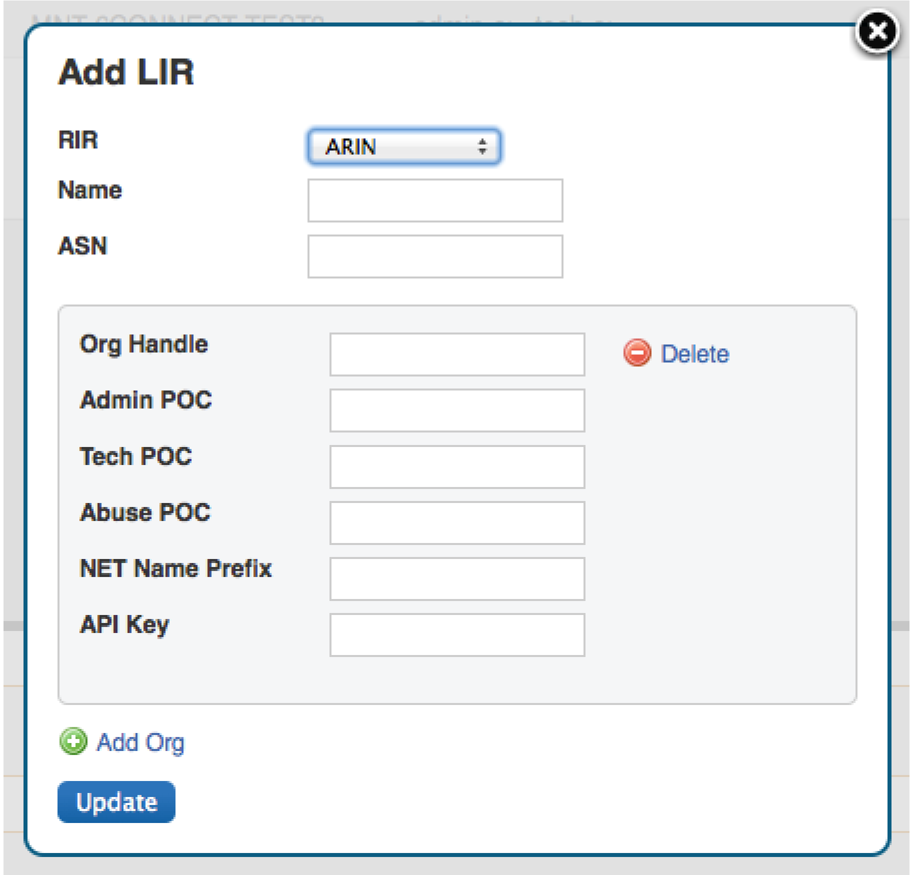
ARIN LIR Setup and Use

Step 1: Setup the LIR information via the LIR Manager

You will be prompted to the select the RIR



Add in the requisite Org and POC information



ⓘ **Multiple Org Support**
Note that we support multiple Org Handles per ARIN entry. Simply click on the Add Org link at the bottom of the Add LIR dialog box.

Step 2: Assign an IP block to a Resource using the **IPAM Gadget** or the Assign function from the IPAM Manage screen.

Step 3: Update SWIP information

Functions supported:

> ⚠ **SWIP Update Functionality Details**
> In the case when a user already has SWIPped blocks to ARIN, 6connect checks prior to actually performing a SWIP. In the process, if the IP block is already SWIPped, it will check for existing ARIN customer data and update the 6connect data to reflect what ARIN has on file. Once that is complete, the user can then perform a de-SWIP function using ProVision.

Simple Re-assign

From ARIN.net:

Used to subdelegate IP addresses to a customer that does not need to:

- subdelegate the addresses to their own customers
- maintain their own in-addr.arpa delegation
- display their own point of contact (POC) information.

It can also be used to change the customer name and address information (but not the range) on an existing simple reassignment and to remove simple reassignments. It is submitted by an ARIN Online user account linked to the parent organization's Admin or Tech POC, or the Tech POC for the resource.

Detailed Re-assign

From ARIN.net:

Used to subdelegate IP addresses to a downstream organization that does not need to further subdelegate the IP addresses, but does need to maintain its own reverse name servers and/or display separate point of contact (POC) information. It is submitted by an ARIN Online user account linked to the parent organization's Admin or Tech POC, or the Tech POC for the resource.

Re-allocate

From ARIN.net:

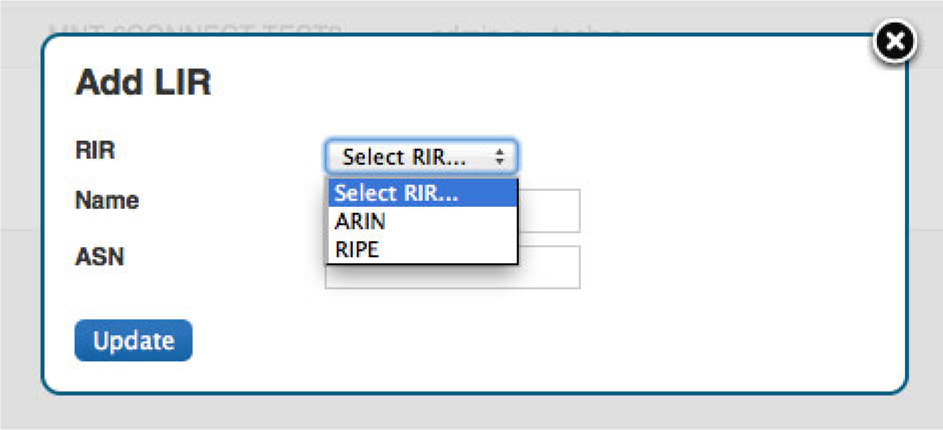
Used to subdelegate IP addresses to a downstream organization that will further subdelegate the IP addresses to their own customers. These requests must be submitted by an ARIN Online user account linked to the parent organization's Admin or Tech POC, or the Tech POC for the resource.

Once completed successfully you will see a confirmation icon with the SWIP details.

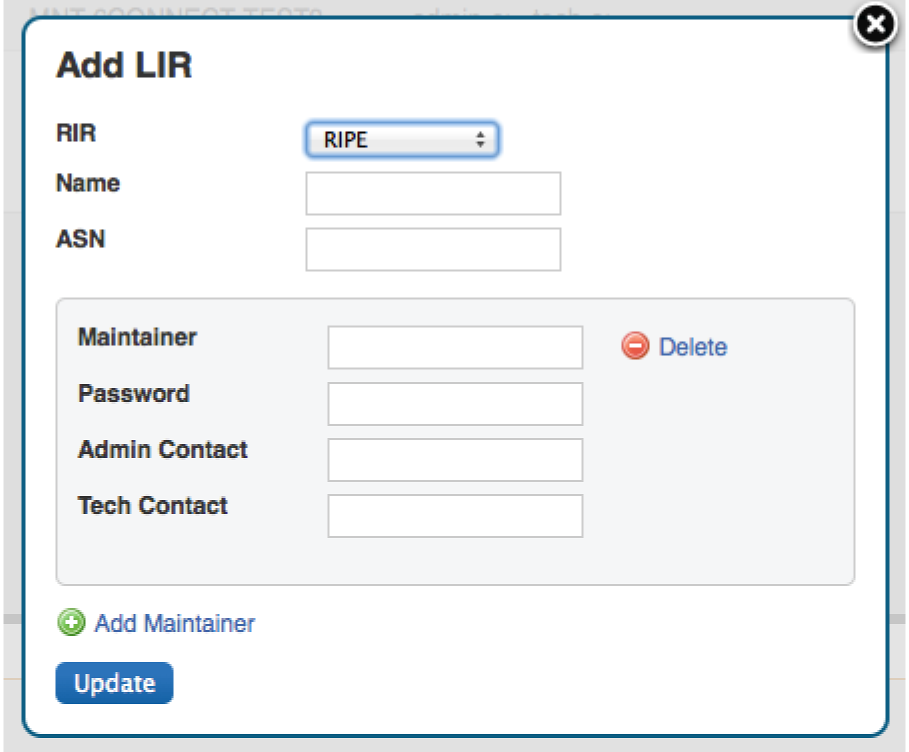
RIPE LIR Setup and Use

Step 1: Setup the LIR information via the LIR Manager

You will be prompted to the select the RIR:



Then add in the requisite Maintainer Object related information:

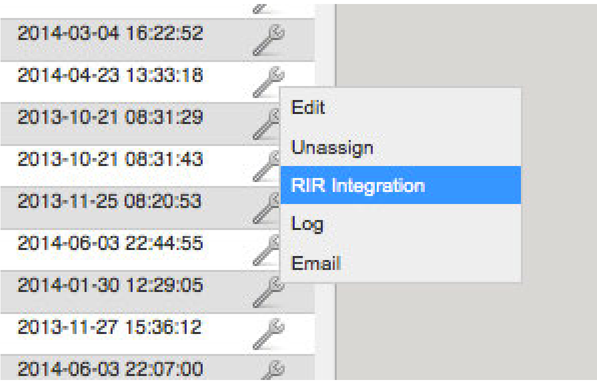


Multiple Maintainer Object Support
Note that we support multiple maintainer objects per LIR entry. Simply click on the Add Maintainer link at the bottom of the Add LIR dialog box.

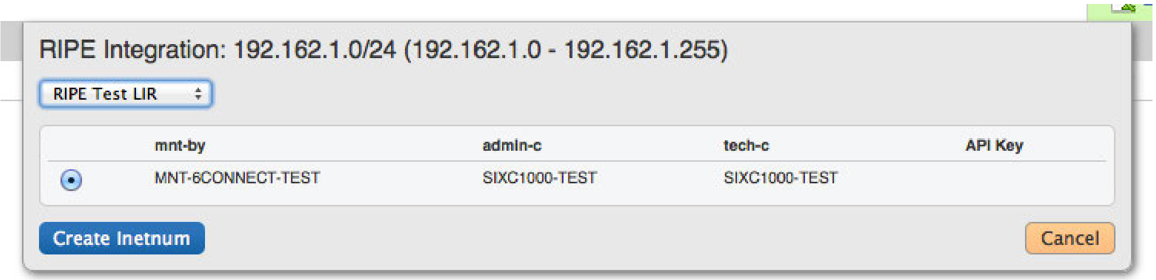
Step 2: Assign an IP block to a Resource using the **IPAM Gadget** or the Assign function from the IPAM Manage screen.

Step 3: Update RPSL information

When a block is assigned, the user (if they have permissions) can then update the block's maintainer object.


2014-03-04 16:22:52
2014-04-23 13:33:18
2013-10-21 08:31:29
2013-10-21 08:31:43
2013-11-25 08:20:53
2014-06-03 22:44:55
2014-01-30 12:29:05
2013-11-27 15:36:12
2014-06-03 22:07:00

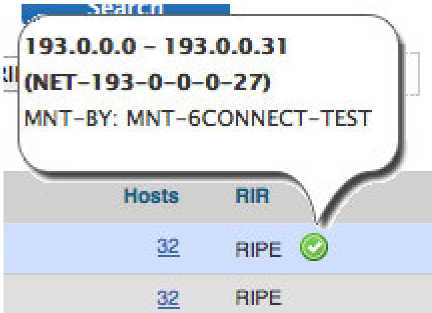
Identify which LIR data you want to use for the netnum update:


RIPE Integration: 192.162.1.0/24 (192.162.1.0 - 192.162.1.255)

RIPE Test LIR

	mnt-by	admin-c	tech-c	API Key
●	MNT-6CONNECT-TEST	SIXC1000-TEST	SIXC1000-TEST	

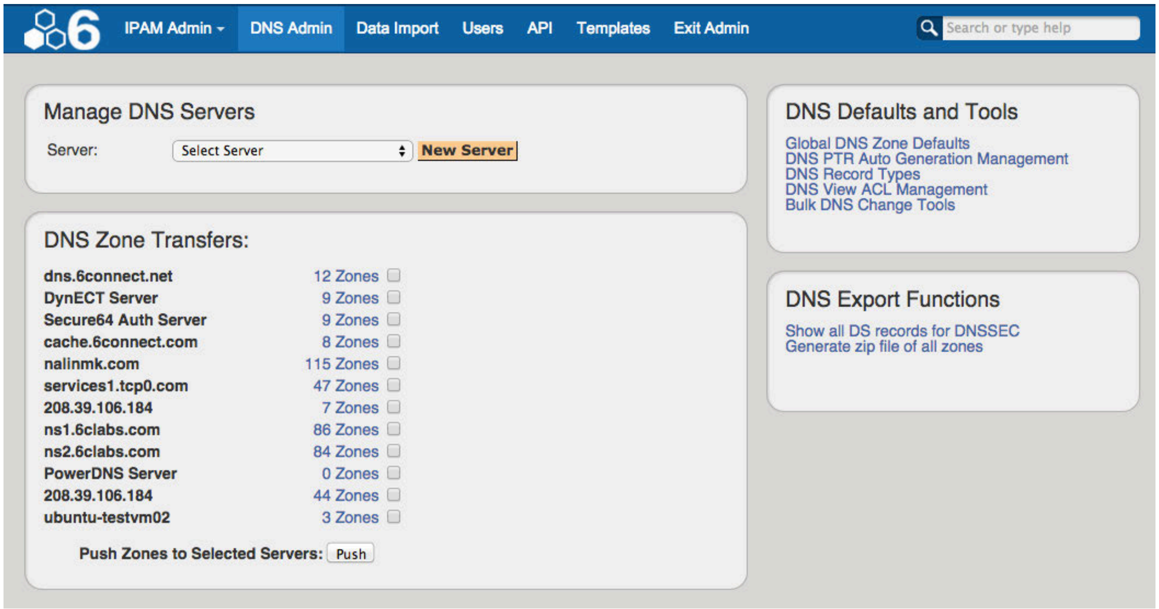
Once the RPSL update is complete, a green checkmark badge will appear next to the RIR field. When you hover over it, you will get a detailed update of the block status.


193.0.0.0 – 193.0.0.31
(NET-193-0-0-0-27)
MNT-BY: MNT-6CONNECT-TEST

Hosts	RIR
32	RIPE ✓
32	RIPE

DNS Administration

DNS Administration



Manage DNS Servers

Server: Select Server

DNS Zone Transfers:

dns.6connect.net	12 Zones	☐
DynECT Server	9 Zones	☐
Secure64 Auth Server	9 Zones	☐
cache.6connect.com	8 Zones	☐
nalinmk.com	115 Zones	☐
services1.tcp0.com	47 Zones	☐
208.39.106.184	7 Zones	☐
ns1.6clabs.com	86 Zones	☐
ns2.6clabs.com	84 Zones	☐
PowerDNS Server	0 Zones	☐
208.39.106.184	44 Zones	☐
ubuntu-testvm02	3 Zones	☐

Push Zones to Selected Servers:

DNS Defaults and Tools

Global DNS Zone Defaults
DNS PTR Auto Generation Management
DNS Record Types
DNS View ACL Management
Bulk DNS Change Tools

DNS Export Functions

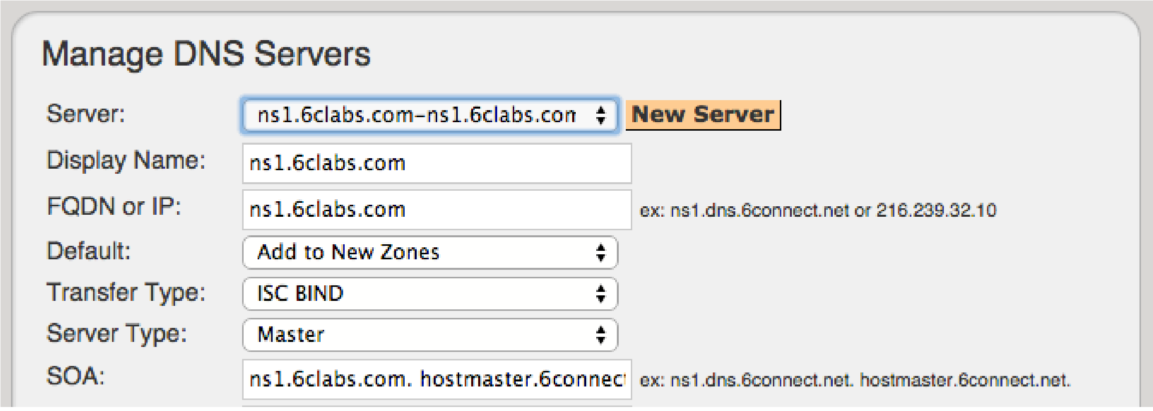
Show all DS records for DNSSEC
Generate zip file of all zones

DNS Administration is accessed through the Admin area of ProVision. The DNS Admin tab contains four different functional areas: Manage DNS Server, DNS Zone Transfers, DNS Defaults and Tools, and DNS Export Functions.

- Manage DNS Servers
- DNS Zone Transfers
- DNS Defaults and Tools
    - Global DNS Zone Defaults
    - DNS PTR Auto Generation Management
    - DNS Record Types
    - DNS View ACL Management
    - Bulk DNS Change Tools
    - Global DNS Settings (Local Installation Only)
- DNS Export Functions
    - Generate zip file of all zones
- Additional Information:
    - Importing DNS Zones
    - System Information for Local Installations
    - Additional Sections:

Manage DNS Servers

This is where you configure DNS servers to transfer zones to from the ProVision platform. ProVision currently supports the following DNS server types: BIND, PowerDNS (using a bind backend), DynECT, and Secure64. The fields available for configuring servers are as follows:



Manage DNS Servers

Server: ns1.6clabs.com–ns1.6clabs.con

Display Name: ns1.6clabs.com

FQDN or IP: ns1.6clabs.com ex: ns1.dns.6connect.net or 216.239.32.10

Default: Add to New Zones

Transfer Type: ISC BIND

Server Type: Master

SOA: ns1.6clabs.com. hostmaster.6connec ex: ns1.dns.6connect.net. hostmaster.6connect.net.

- Server - The name of the server.
- Display Name - Name you want the server to display.
- FQDN or IP - The FQDN or ip address of the DNS server.
- Default - Specify if the server should be added to new zones by default or not.
- Transfer Type - SCP, Secure64, Secure64 Signer, and DynECT. Note that the SCP method should be used for PowerDNS with a Bind backend.
- Server Type - Specify if the server is a master or slave. Different configuration files are created master vs. slave on the Bind, PowerDNS/Bind, and Secure64 platforms.
- SOA - Start of Authority, should be in the format "SRI-NIC.ARPA. HOSTMASTER.SRI-NIC.ARPA.". For more information, see the RFC: http://tools.ietf.org/html/rfc1033
- Username - Login/username for the target DNS server. The specified account needs to be valid, and have write permission to the remote directory and execute permission for any pre/post commands.
- Password - Password for the target account. All passwords are stored encrypted in the database.
- Port - Port to contact the target server on. This is port used for SSH on Bind and Secure64 server types.
- Remote Directory - The target directory to transfer zone files to on the DNS system.
- Named Conf Path - The path to other zones on the Bind systems.
- Pre Command - Any valid system command on the target DNS system. This command will be run before any files are transferred.
- Post Command - Any valid system command on the target DNS system. This command will be run after any files are transferred. For example, on a Bind system you would need to run "rndc reload" to reload the zones.
- Enable Views - Select Yes or No to enable / disable views.

The "Test Config" button will attempt to login to the target system and write to the target directory. If any failures are encountered, an error will be written with some detail. If the test is successful, the word "Success!" will show verifying that files can be transferred. This does not test if the user can execute pre/post commands. This needs to be checked manually.

Views

Enable Views - Select Yes to enable views on a particular server. You must click "Update Server" to show the view options.

To enable your Bind server to use zones transferred from 6connect, you must add the following to your named.conf.

```
include "/var/named/zones/6connect_named.conf";
```

When views are enabled on a server, all zones/records attached to a server are immediately put into the default view 6connectGeneric that contains a match any rule. For example, here is a sample of the named.conf include generated by ProVision:

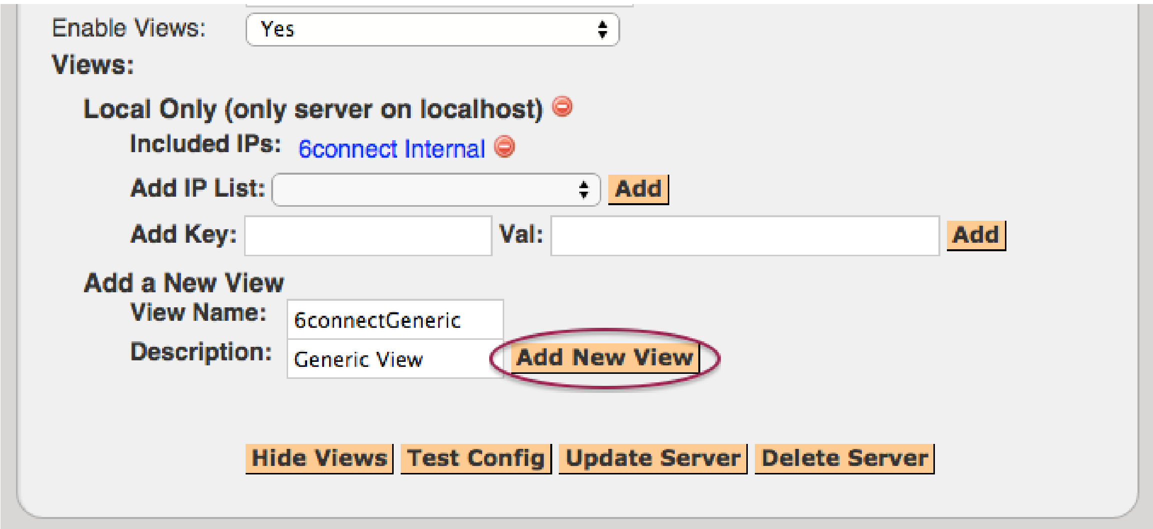
```
view "6connectGeneric" in {

    match-clients { any; };

    zone ...

    zone ...

};
```

All views attached to a server are displayed under the "Views" label. When you enable views on a Bind server, you must wrap all other zones in named.conf or any includes in view statements. The include line for the 6connect conf file should also be move above any other view statements. An example is below:

```
include "/var/named/zones/6connect_named.conf";

view "hints" {

     match-clients { any; };

     zone "." {type hint; file "named.root";};

};

view "zones-outside-of-6connect" {

         match-clients { some-acl; };

         zone ....

};
```

Adding a View

To add a view just type in the view name, and a description (for reference only), then click "Add new view". The config files transferred to the server will automatically be built according to the server type.



Enable Views: Yes

Views:

Local Only (only server on localhost)

Included IPs: 6connect Internal

Add a New View

View Name: 6connectGeneric

Description: Generic View

Adding ACLs to Views

You can select an existing IP List to create a view ACL. For a Bind server, this creates a corresponding line in the config: *match-clients { 6connect_Internal; };* The 6connect_ is prefixed to all IP lists inserted by ProVision.

"Add Key" and "Val" are fields to provide additional options for DNS Views.

For additional information on working with views, see Configuring Split Horizon / Views.

DNS Zone Transfers

This section lists every server configured in the platform, along with how many zones are assigned to the server.

How to transfer zones:

- Check the boxes and click the 'Push' button to transfer zones to the target server.

DNS Defaults and Tools

This section provides a collection of links for other useful DNS functions including setting Global DNS defaults, PTR Auto Generation Management, DNS Record Types, DNS View ACL Management, and Bulk DNS Change Tools.

Global DNS Zone Defaults

DNS Global Defaults / Default SOA Values

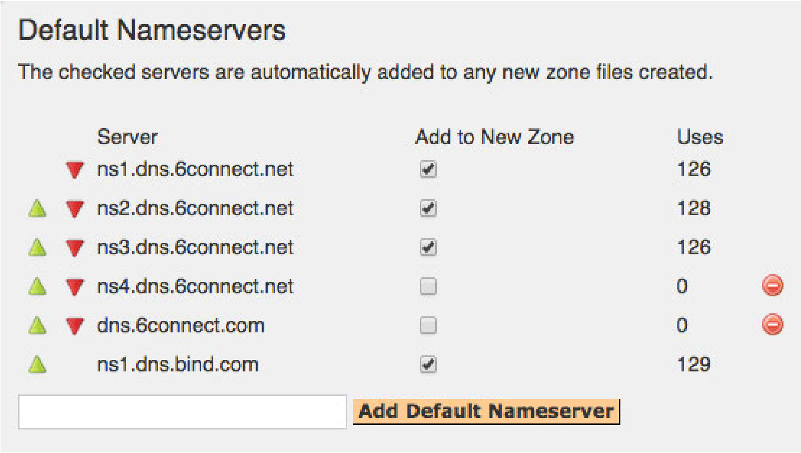
Provides default configuration settings options.

- Default TTL: in seconds, default value is 3600
- Default Refresh: in seconds, default value is 14400
- Default Retry: in seconds, default value is 3600
- Default Expire: in seconds, default value is 604800
- Default Minimum: in seconds, default value is 3600
- Default SOA: Server Of Authority and hostmaster contact. E.g. ns1.domain.com. hostmaster.domain.com.

Default Nameservers

This function controls the list of DNS servers used for pre populating DNS records with NS records.

The checked servers are automatically added to any new zone files created.



Default Nameservers

The checked servers are automatically added to any new zone files created.

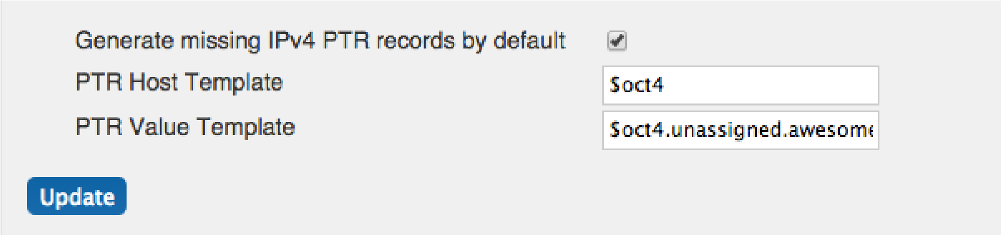
Server	Add to New Zone	Uses
ns1.dns.6connect.net	☑	126
ns2.dns.6connect.net	☑	128
ns3.dns.6connect.net	☑	126
ns4.dns.6connect.net	☐	0
dns.6connect.com	☐	0
ns1.dns.bind.com	☑	129

To remove a server from default status, uncheck the box under "Add to New Zone". Servers with "0" Uses may be deleted by hitting the red delete icon.

DNS PTR Auto Generation Management

ProVision can be configured auto-generate missing IPv4 PTR records in reverse zones based on the template provided on this page. This feature is limited to zones which cover /24 sized blocks (no RFC 2317 support yet).

The variables '$oct1', '$oct2', '$oct3', '$oct4' are used to specify the first through fourth octet's of the PTR IPv4 address.



Generate missing IPv4 PTR records by default ☑

PTR Host Template: $oct4

PTR Value Template: $oct4.unassigned.awesom

DNS Record Types

Edit DNS Record Types

The "Edit DNS Record Types" will allow you to manage what types of DNS records can be added in the system. The default values are:

- A, AAAA, MX, PTR, CNAME, NS, DIRECTIVE, DNAME, DNSKEY, DS, INCLUDE, IPSECKEY, COMMENT, TXT, KEY, SOA, and SRV
- The complete list of valid record types can be found the RFCs. Wikipedia provides a nice reference:

http://en.wikipedia.org/wiki/List_of_DNS_record_types

DNS View ACL Management

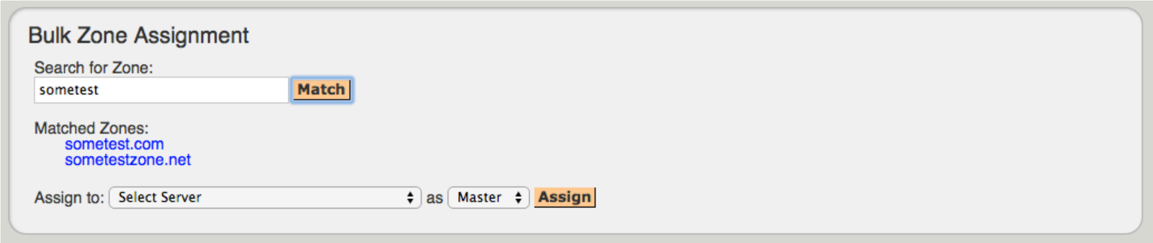
DNS View ACL Management

- Manage ACLs for use in DNS Views.

Bulk DNS Change Tools

Bulk Zone Assignment

The Bulk Zone Assignment function allows you to assign multiple zones to a resource in one step. The system will perform a wild card style match for any text in the search box and return all matching zones and display them in a list. You can then assign all the zones found to a resource as either a master or slave.


Bulk Zone Assignment

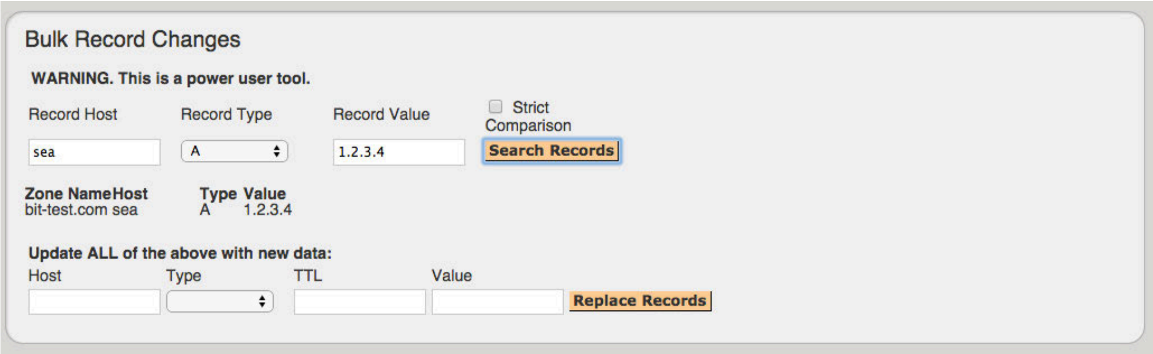
Search for Zone: sometest

Matched Zones:
sometest.com
sometestzone.net

Assign to: Select Server as Master

Bulk Record Changes

The Bulk DNS Editor allows an Admin to perform "find and replace" functions across all DNS zones. Enter Record Host, Record Type, and/or Record Value information and select "Search Records". It will match the host and/or record type and/or record value across the entire zone database. Unless the "Strict Comparison" box is checked, it will use wildcard style matches for the host and record values. You can then replace the data for the results by using the fields below.


Bulk Record Changes

WARNING. This is a power user tool.

Record Host: sea
Record Type: A
Record Value: 1.2.3.4
☐ Strict Comparison

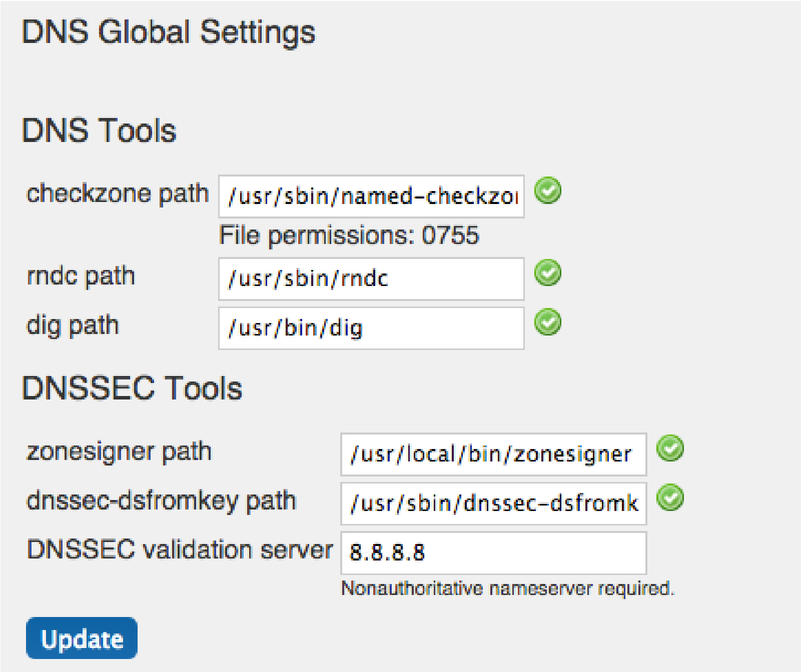
Zone Name	Host	Type	Value
bit-test.com	sea	A	1.2.3.4

Update ALL of the above with new data:

Host
Type
TTL
Value

Global DNS Settings (Local Installation Only)

The "Global DNS Settings" link is only viewable with the local installation version of ProVision.



DNS Global Settings

DNS Tools

checkzone path /usr/sbin/named-checkzo ✓

File permissions: 0755

rndc path /usr/sbin/rndc ✓

dig path /usr/bin/dig ✓

DNSSEC Tools

zonesigner path /usr/local/bin/zonesigner ✓

dnssec-dsfromkey path /usr/sbin/dnssec-dsfromk ✓

DNSSEC validation server 8.8.8.8

Nonauthoritative nameserver required.

DNS Global Settings

- Checkzone path: Path to checkzone
- rndc path: Path to rndc
- dig path: Path to dig
- zonesigner path: Path to zonesigner
- dnssec-dsfromkey path: Path to dnssec-dsfromkey
- DNSSEC validation server: Address of DNSSEC validation server, required to be a non-authoritative name server.

DNS Export Functions

This section provides links for export functions.

Generate all DS records for DNSSEC

- This link will generate and output all DS records in the database. This is provided to easily bulk upload all DS keys to your domain registrar.

Generate zip file of all zones

- This link generates a single .zip file containing all zones for download. Once a zip file has been generated, a quick link is provided at the bottom of this section with datestamp to be downloaded later if needed.

Additional Information:

Importing DNS Zones

ProVision offers three DNS zone import options, available under the Data Import tab in the Admin section. For more information on importing DNS zones, see Importing your Data and Import DNS Zones.

BIND Zone Import

- Imports using the named.conf configuration file tied to the zones you are uploading, a .zip or .tar file of the zones themselves, and an optional .csv file mapping zones to customers and DNS Servers.

DynECT Zone Import

- Imports and syncs ALL zones on the system with those in your DnyECT instance. This means any zones in ProVision not present in your

DynECT instance will be removed and any changes lost.

PowerDNS Zone Import

- Option is available after configuring a PowerDNS server with a MySQL backend. Connects to the selected server and imports all zones.

System Information for Local Installations

Zones are stored in the 6connect web root under /zones.

DS keys are stored in the 6connect web root under /keys.

Additional Sections:

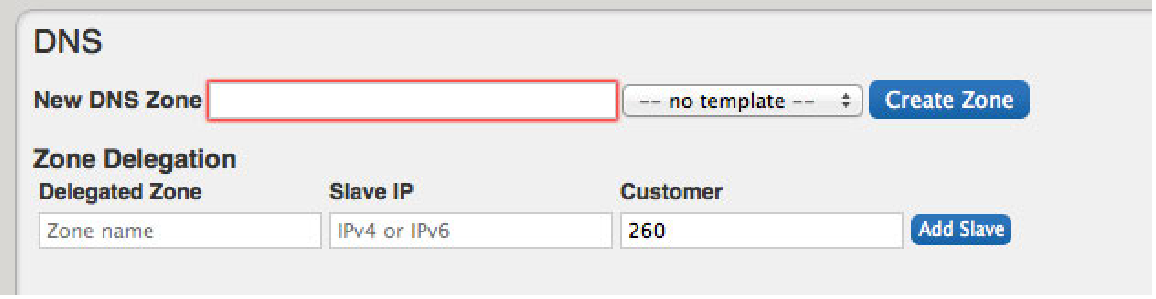
For more information on DNS and configurations, see the following sections:

- Working with DNS Zones
- Configuring ISC BIND Support
- Configuring DynECT Support
- Configuring PowerDNS Support
- Configuring Secure64 Support
- Configuring DNSSEC
- Configuring Split Horizon/Views
- Configuring DNS Templates
- DNS Audit Tools (Alpha)
- Templates

Working with DNS Zones

Using the DNS Gadget

When you have defined a Resource, you can assign the DNS Gadget to a given Section. This allows you a shortcut to DNS functionality without having to view it in the standard DNS Tab. From this interface, you can create new zones (with or without a Zone template) or assign Zone delegation specific information.



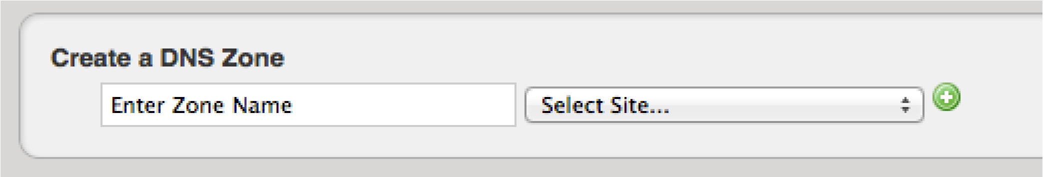
Customer: 260

Navigating the DNS Tab

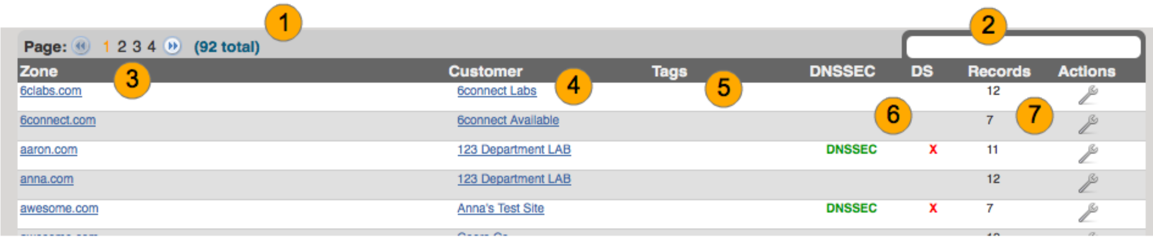
Clicking on the main DNS Tab, then on "Add Zone" will bring up the following UI.

Creating/Adding Zones

To create a zone, enter the name of the zone and select the Resource you want to assign the zone to. Click on the green plus sign to be taken to the newly created zone file. There you can edit the zone, assign views, etc.



DNS Tab User Interface



Zone	Customer	Tags	DNSSEC	DS	Records	Actions
6clabs.com	6connect Labs				12	🔧
6connect.com	6connect Available				7	🔧
aaron.com	123 Department LAB		DNSSEC	X	11	🔧
anna.com	123 Department LAB				12	🔧
awesome.com	Anna's Test Site		DNSSEC	X	7	🔧

1) **Paging** - this allows for easier browsing of large lists of DNS zones

2) **Filtering** - this text box allows the user to enter in criteria to filter the list of zones

3) The **Zone** list is a click-able list of zone names - if clicked, the user will be directed to the DNS zone editing page

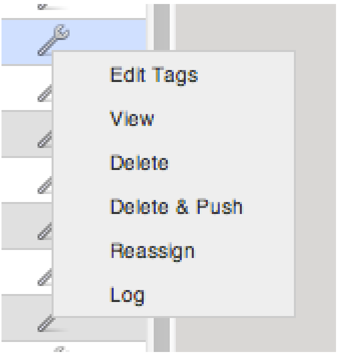
4) The **Customer** list is a click-able list of Resource names that the zone is assigned to

5) The **Tags** column lists the tags associated with the zone

6) The **DNSSEC** column will show green if the zone has been signed and pushed successfully, the "X" column will provide a status to acknowledge that the zone was verified by an authenticated DNS server

7) The **Records** value is the number of zone records in the given zone

DNS Zone Action Menu



The Action menu provides a list of options that the user can select for any given zone.

1) **Edit Tags:** This allows to assign tag values to a zone for easier filtering. This a free form field and not the same as the IPAM Tags

2) **View:** Brings you to the View/Edit screen for the zone

3) **Delete:** Deletes the zone from ProVision and removes the entry in ProVision conf file on the remote server(s) (the user will also receive a prompt to confirm they wish to complete the action)

4) **Delete & Push**: Deleted the zone from ProVision, removes the entry in ProVision conf file on the remote server(s) **AND** deletes the individual zone file from the remote server(s) (the user will also receive a prompt to confirm they wish to complete the action)

5) **Reassign:** Brings up a screen to assign the zone to a new Resource

6) **Log:** Brings the user to the Log Tab with the results filtered for the specific zone

Configuring ISC BIND Support

Getting Started

You will need a user who can log in to the DNS server and make changes to the directory in which the zones are being stored. Additionally, it is often useful for this user to have the ability to restart the DNS server. The login and password for this user will be required to configure this server on the DNS Admin page.

6connect Zone files are written out in the following format:

/path/to/zone/directory/viewName/zoneFirstLetter/zonefile.zone

If no views are configured, or if views are expressly disabled, then the default viewName "6connectGeneric" is used. The zoneFirstLetter is the first letter of the zone name, so the subdirectory 'microsoft.com.zone' is placed in would be /m/.

All 6connect-managed Zones are managed by a dedicated 6connect configuration file named 6connect_named.conf. This file is created to act a supplementary conf file to work in concert with any existing named.conf which might exist. To include the 6connect configuration file, edit named.conf and append the following line:

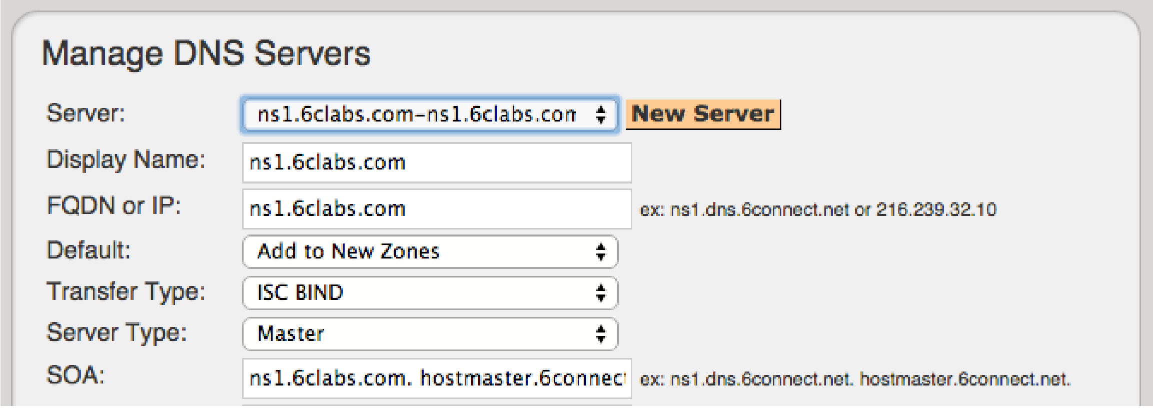
include "/path/to/conf/directory/6connect_named.conf";

You must remember to include the 6connect configuration file or none of the changes managed by 6connect ProVision will take effect!

It is also important to note that if your existing named.conf file contains zones within Split Horizon views, then the 6connect-managed zones must also be view-enabled. Likewise, if existing zones are not grouped into views, then views must be disabled on ProVision.

Configuring DynECT Support

To use ProVision with DynECT support, first enter your Dyn username, password, and customer name into the New Server dialogue on the DNS Admin page.



Manage DNS Servers

Server: ns1.6clabs.com-ns1.6clabs.com

Display Name: ns1.6clabs.com

FQDN or IP: ns1.6clabs.com

ex: ns1.dns.6connect.net or 216.239.32.10

Default: Add to New Zones

Transfer Type: ISC BIND

Server Type: Master

SOA: ns1.6clabs.com. hostmaster.6connec

ex: ns1.dns.6connect.net. hostmaster.6connect.net.

Additionally, if you are deploying any DNSSEC-enabled zones, you will also need to provide a valid DynECT DNSSEC contact. See Dyn documentation for details on DNSSEC contacts.

> Once ProVision begins managing DynECT zones, only the ProVision tool should be used to make and manage changes to zones. If zone changes are made to DynECT directly they will be overwritten the next time ProVision syncs, causing errors. Only edit zones using ProVision.

Configuring PowerDNS Support

Environments supported

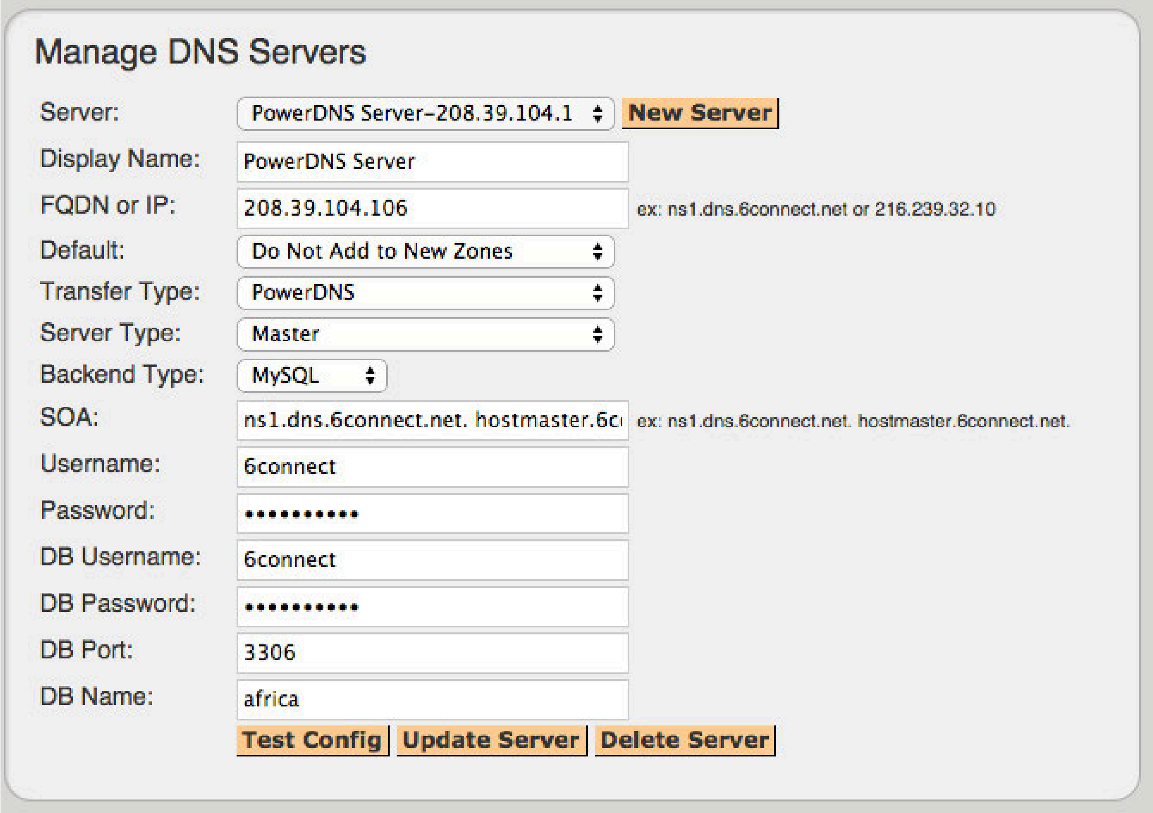
- PowerDNS version 3.0 or above on the target server(s)
- BIND or MySQL backend

Overview

Get ADOBE® FLASH® PLAYER

Step 1: Setup your PowerDNS Server

Under "Manage DNS Servers", select "New Server", then add the information for your PowerDNS server. See Manage DNS Servers for detailed field information.



Manage DNS Servers

Server: PowerDNS Server-208.39.104.1

Display Name: PowerDNS Server

FQDN or IP: 208.39.104.106 ex: ns1.dns.6connect.net or 216.239.32.10

Default: Do Not Add to New Zones

Transfer Type: PowerDNS

Server Type: Master

Backend Type: MySQL

SOA: ns1.dns.6connect.net. hostmaster.6c ex: ns1.dns.6connect.net. hostmaster.6connect.net.

Username: 6connect

Password: ••••••••••

DB Username: 6connect

DB Password: ••••••••••

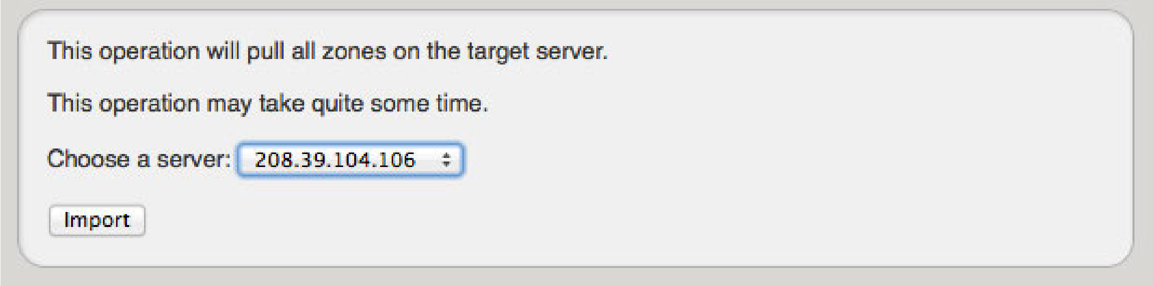
DB Port: 3306

DB Name: africa

Step 2: Import your PowerDNS zones

While in the **Admin** section, navigate to the **Data Import** Tab. Select the "Power DNS Zone Import" link.

To import your data, simply choose your PowerDNS server and click "Import".



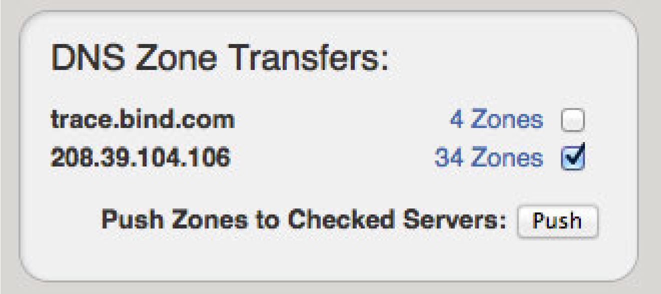
This operation will pull all zones on the target server.

This operation may take quite some time.

Choose a server: 208.39.104.106

Step 3: Edit/Push your zones to PowerDNS

Select the check box next to the zones that you want to push, then click "Push".



DNS Zone Transfers:

trace.bind.com 4 Zones ☐

208.39.104.106 34 Zones ☑

BIND Backend

Note on SSH
The integration does not require a remote database connection, but it does require an SSH account and a writable directory. The SSH account must have access to the server. This account will also be used for DNSSEC functionality within PowerDNS.

MySQL Backend

Note on SSH
The integration requires a remote database connection, so will need a mysql user with permissions for remote administration. We highly recommend using ACLs to ensure that configuration only occurs from intended sources.

For DNSSEC functionality, you will need a standard SSH user account withing your PowerDNS user group

Please note that Views are not supported with the MySQL backend

Only BIND and MySQL backends are supported.

Configuring Secure64 Support

A note on Ports
6connect uses port 22 to communicate with Secure64 infrastructure - please ensure that this is addressed in any ACLs/firewalls

The initial setup of the Secure64 Authoritive server is as follows:

Step 1: Create an nsd.conf file under the root directory / of your S64 Auth server

DO THIS
Make sure to add the line include: 6connect_nsd.conf to the nsd.conf file

Output/Input

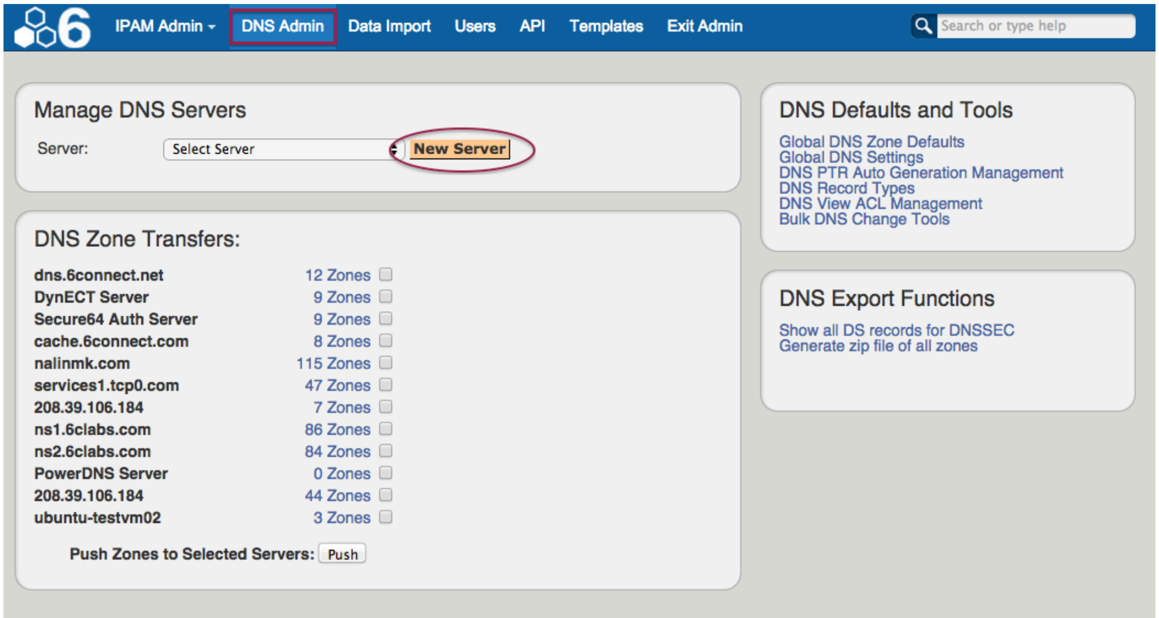
```
[authdnsadmin@Secure64DNS]# cat nsd.conf
server:
ip-address: 50.198.192.141

axfr-logfile: /axfr_log/axfr.log
axfr-logfile-flush-count: 1
axfr-logfile-max-size: 100000
axfr-logfile-max-size: 10

request-logfile: /request_log/request.log
request-logfile-flush-count: 10
request-logfile-max-size: 1000000
request-logfile-max-files: 10

include: 6connect_nsd.conf
```

Step 2: Make a directory for 6connect ProVision to push zone files to on the Secure64 DNS Server

```
[authdnsadmin@Secure64DNS]# mkdir test12
[authdnsadmin@Secure64DNS]# ls
/:
322 2013-08-19 06:07:42 nsd.conf
<DIR> 1024 2013-08-16 17:30:12 test12
```

Step 3: Setup and Configure 6connect ProVision for your Secure64 DNS Server

Go to the 6connect Admin area and click on the **DNS Admin** Tab. Click on the **New Server** button.



Manage DNS Servers

Server: Select Server

DNS Zone Transfers:

dns.6connect.net	12 Zones	☐
DynECT Server	9 Zones	☐
Secure64 Auth Server	9 Zones	☐
cache.6connect.com	8 Zones	☐
nalinmk.com	115 Zones	☐
services1.tcp0.com	47 Zones	☐
208.39.106.184	7 Zones	☐
ns1.6clabs.com	86 Zones	☐
ns2.6clabs.com	84 Zones	☐
PowerDNS Server	0 Zones	☐
208.39.106.184	44 Zones	☐
ubuntu-testvm02	3 Zones	☐

Push Zones to Selected Servers:

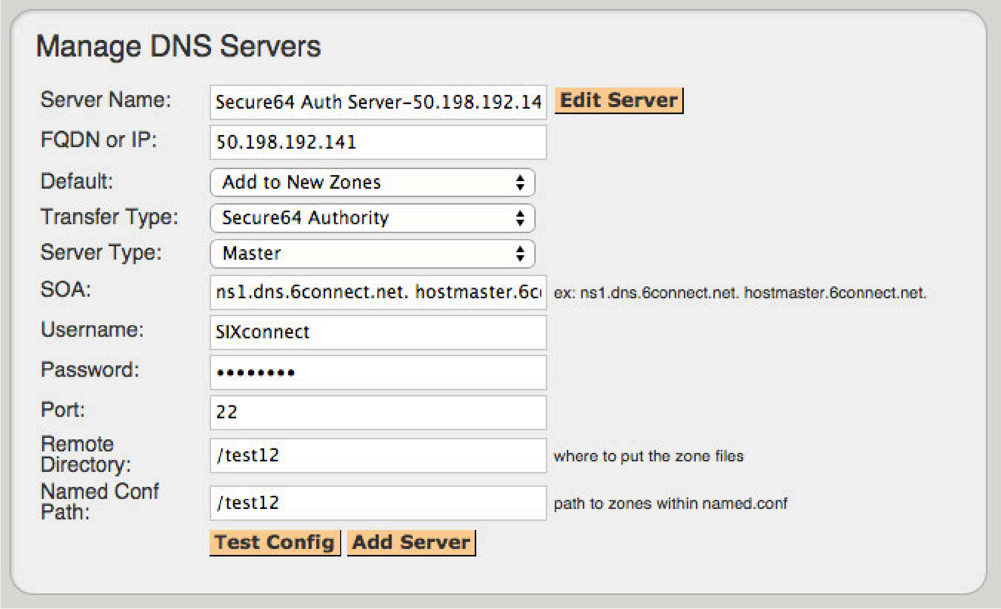
DNS Defaults and Tools

- Global DNS Zone Defaults
- Global DNS Settings
- DNS PTR Auto Generation Management
- DNS Record Types
- DNS View ACL Management
- Bulk DNS Change Tools

DNS Export Functions

- Show all DS records for DNSSEC
- Generate zip file of all zones

Then fill in the information for your Secure64 server (including any relevant SOA information):

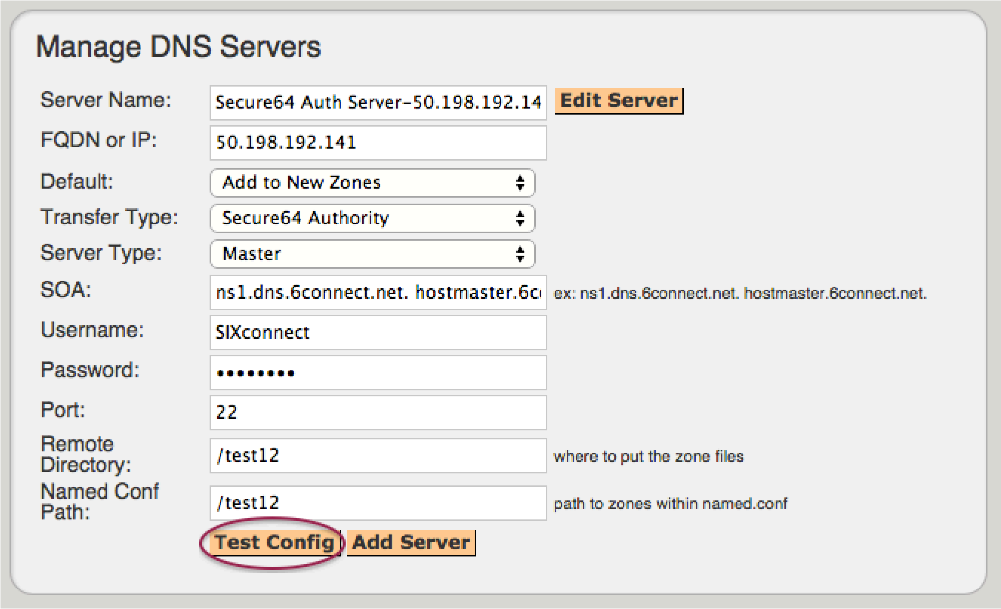


Manage DNS Servers

Server Name:	Secure64 Auth Server-50.198.192.14
FQDN or IP:	50.198.192.141
Default:	Add to New Zones
Transfer Type:	Secure64 Authority
Server Type:	Master
SOA:	ns1.dns.6connect.net. hostmaster.6c (ex: ns1.dns.6connect.net. hostmaster.6connect.net.)
Username:	SIXconnect
Password:	••••••••
Port:	22
Remote Directory:	/test12 (where to put the zone files)
Named Conf Path:	/test12 (path to zones within named.conf)

Step 4: Test the Secure64 DNS Server configuration

Press the **Test Config** button for the DNS Server you setup.

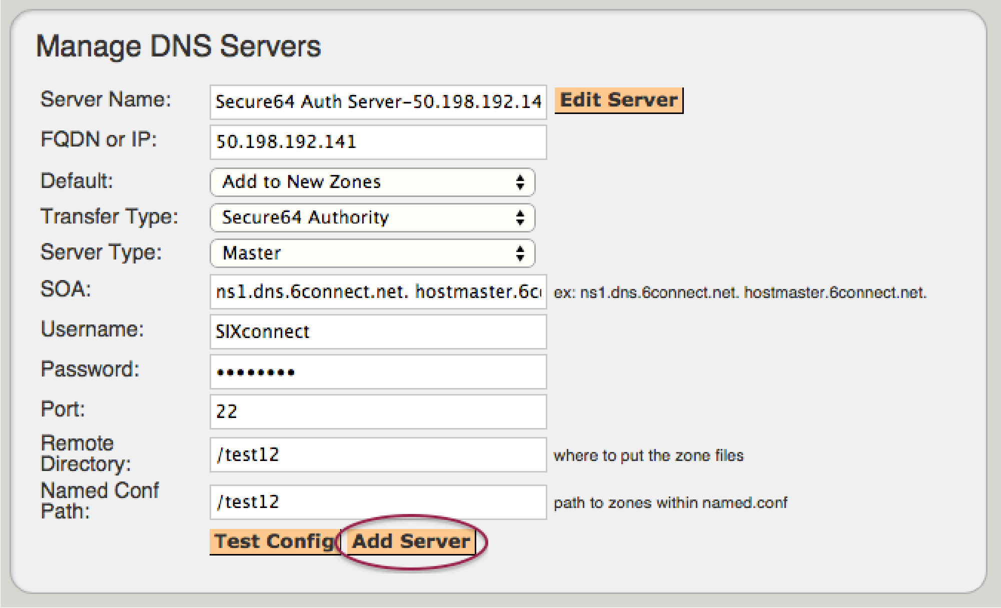


Manage DNS Servers

Server Name: Secure64 Auth Server-50.198.192.14
FQDN or IP: 50.198.192.141
Default: Add to New Zones
Transfer Type: Secure64 Authority
Server Type: Master
SOA: ns1.dns.6connect.net. hostmaster.6c ex: ns1.dns.6connect.net. hostmaster.6connect.net.
Username: SIXconnect
Password: ••••••••
Port: 22
Remote Directory: /test12 where to put the zone files
Named Conf Path: /test12 path to zones within named.conf

Success! Will show as depicted above.

Click **Add Server** to add this server as a permanent entry in the dropdown menu. This server will now be available for assigning DNS zones to.

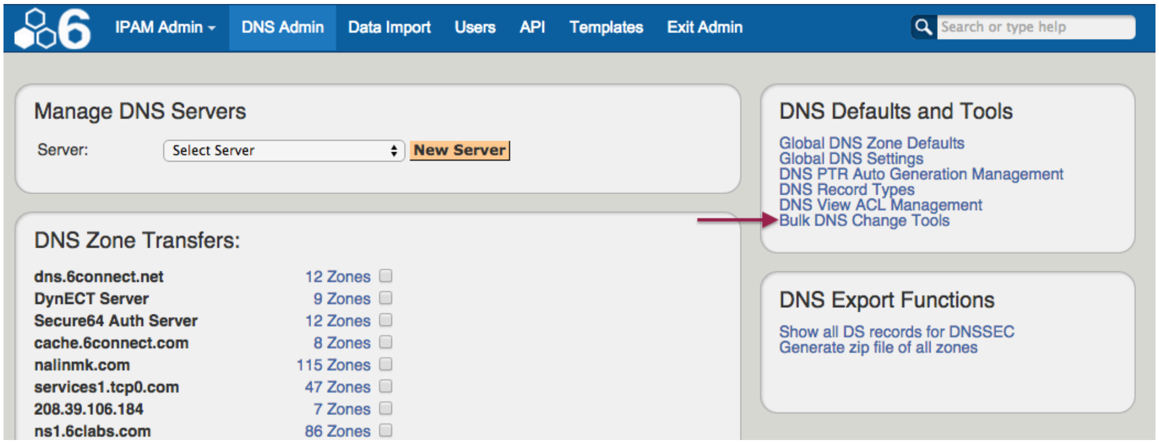


Manage DNS Servers

Server Name: Secure64 Auth Server-50.198.192.14
FQDN or IP: 50.198.192.141
Default: Add to New Zones
Transfer Type: Secure64 Authority
Server Type: Master
SOA: ns1.dns.6connect.net. hostmaster.6c ex: ns1.dns.6connect.net. hostmaster.6connect.net.
Username: SIXconnect
Password: ••••••••
Port: 22
Remote Directory: /test12 where to put the zone files
Named Conf Path: /test12 path to zones within named.conf

Step 5: Assign any imported/existing zones to your Secure64 DNS Server(s)

Select the "Bulk DNS Change Tools" link under the DNS Defaults and Tools section of the page.



Manage DNS Servers

Server: Select Server

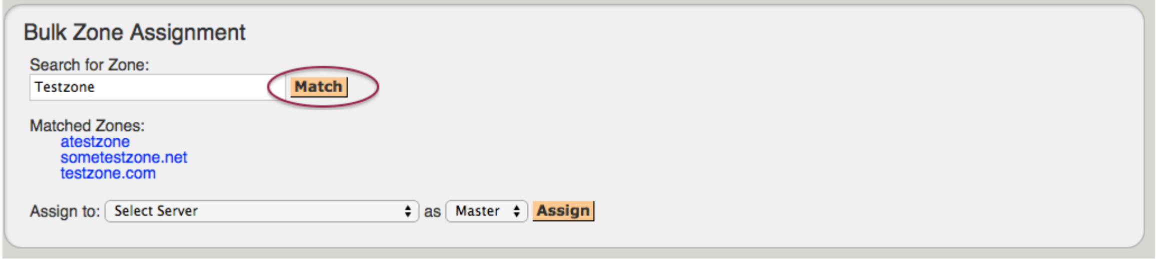
DNS Defaults and Tools

DNS Zone Transfers:

dns.6connect.net	12 Zones ☐
DynECT Server	9 Zones ☐
Secure64 Auth Server	12 Zones ☐
cache.6connect.com	8 Zones ☐
nalinmk.com	115 Zones ☐
services1.tcp0.com	47 Zones ☐
208.39.106.184	7 Zones ☐
ns1.6clabs.com	86 Zones ☐

DNS Export Functions

Search for all available zones or enter in a value to find specific existing zones in the system. Click the "Match" button to see results.



Bulk Zone Assignment

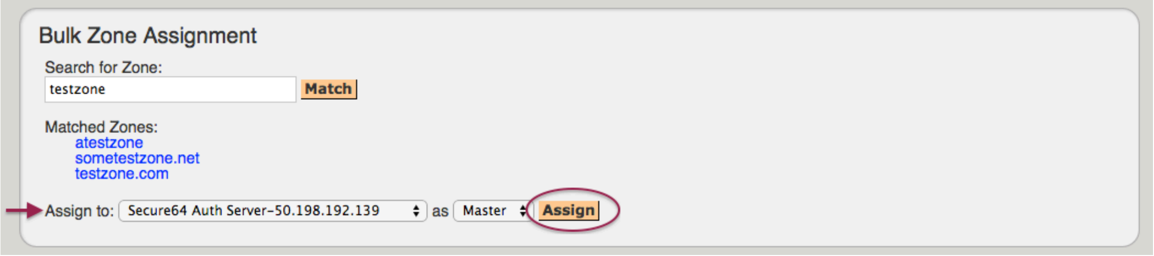
Search for Zone: Testzone

Matched Zones:
atestzone
sometestzone.net
testzone.com

Assign to: Select Server as Master

Search Tip
No character in the search area indicates a search for all zones

Select the Secure64 server under **Assign To,** choose whether as a **Master / Slave,** and hit "**Assign"** to assign the above zones to this server.



Bulk Zone Assignment

Search for Zone: testzone

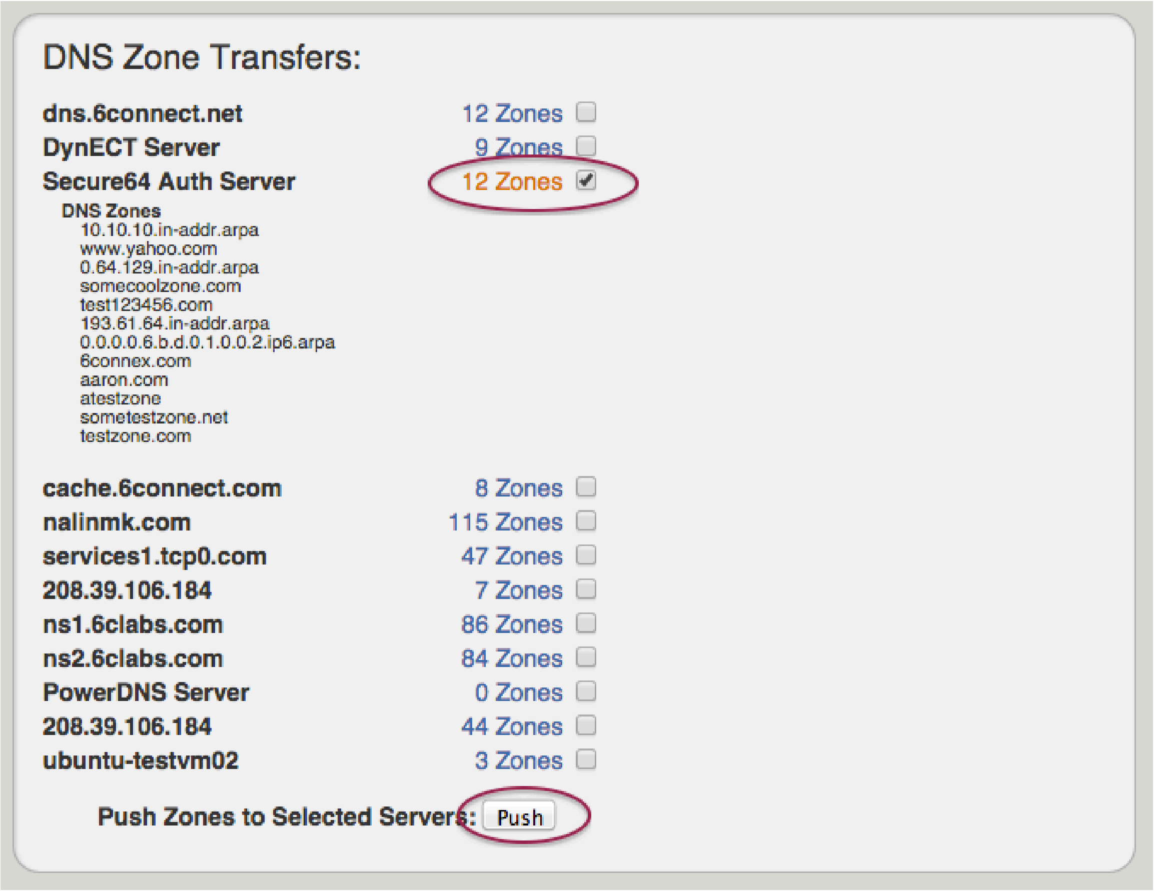
Matched Zones:
atestzone
sometestzone.net
testzone.com

Assign to: Secure64 Auth Server-50.198.192.139 as Master

Step 6: Push Zones to Secure64 Server(s)

Under **DNS Zone Transfers**, verify the server and the zones to transfer. To view the zone names, click on the # Zones link next to the server.

Check the # Zones box and click on the Push button to transfer the zones to this server.



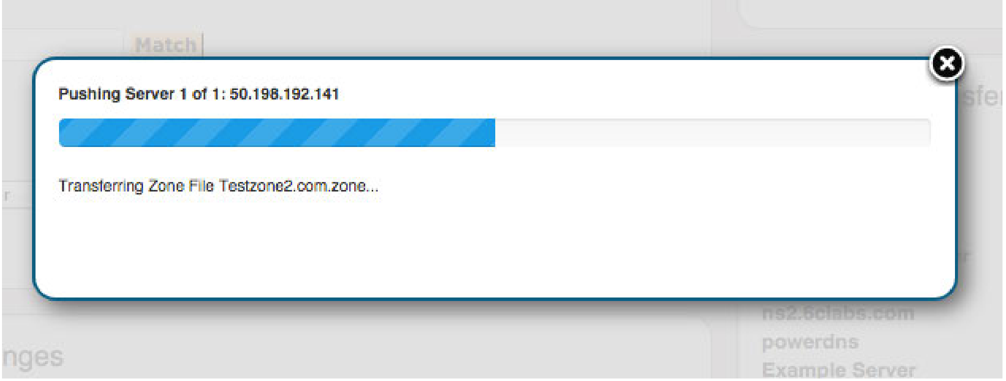
DNS Zone Transfers:

dns.6connect.net	12 Zones	☐
DynECT Server	9 Zones	☐
Secure64 Auth Server	12 Zones	☑

DNS Zones
10.10.10.in-addr.arpa
www.yahoo.com
0.64.129.in-addr.arpa
somecoolzone.com
test123456.com
193.61.64.in-addr.arpa
0.0.0.0.6.b.d.0.1.0.0.2.ip6.arpa
6connex.com
aaron.com
atestzone
sometestzone.net
testzone.com

cache.6connect.com	8 Zones	☐
nalinmk.com	115 Zones	☐
services1.tcp0.com	47 Zones	☐
208.39.106.184	7 Zones	☐
ns1.6clabs.com	86 Zones	☐
ns2.6clabs.com	84 Zones	☐
PowerDNS Server	0 Zones	☐
208.39.106.184	44 Zones	☐
ubuntu-testvm02	3 Zones	☐

The system will present the following live progress bar.



Pushing Server 1 of 1: 50.198.192.141

Transferring Zone File Testzone2.com.zone...

Towards the bottom of the progress status will be the final indication of success or errors to correct.

Step 7: Verify DNS Zone push on Secure64 Server(s)

The result of the Push can be checked/verified by checking the Secure64 server as follows:

⚠ **Verifying Zone pushes**
ssh to 50.198.192.141
Login using the designated login account and password
Enable cachednsadmin
ls

Now, verify that the "788 2013-08-21 12:35:04" 6connect_nsd.conf file now exists.

```
[authdnsadmin@eval138.secure64.com]# ls
/:
6728 2013-08-13 00:15:30 nsd.conf
8416071 2013-08-21 12:35:07 nsd.db
788 2013-08-21 12:35:04 6connect_nsd.conf
<DIR> 1024 2013-08-21 12:34:50 test12
```

You can verify the Push contents by doing a cat of the 6connect_nsd.conf

```
[authdnsadmin@Secure64DNS]# cat 6connect_nsd.conf

AutoGenerated by 6connect ProVision. Do not manually edit.

zone:

name: atestzone.com

zonefile: /test12/6connectGeneric/m/atestzone.com.zone

zone:

name: Testzone2.com

zonefile: /test12/6connectGeneric/m/Testzone2.com.zone
```

In the example above, two Zones have transferred.

To look at the contents of each zone you can cd to the proper directory /test12/6connectGeneric and find the zone files in an alphabetical directory structure as follows:

```
[authdnsadmin@Secure64DNS]# cd 6connectGeneric

[authdnsadmin@Secure64DNS]# cd test12

changed to test12
[authdnsadmin@Secure64DNS]# ls
/test12/:
<DIR> 1024 2013-08-16 19:43:21 6connectGeneric
[authdnsadmin@Secure64DNS]# cd 6connectGeneric
changed to 6connectGeneric
[authdnsadmin@Secure64DNS]# ls
/test12/6connectGeneric/:
<DIR> 1024 2013-08-16 17:30:13 e
<DIR> 1024 2013-08-16 17:30:16 m
<DIR> 1024 2013-08-16 18:49:21 d
<DIR> 1024 2013-08-16 19:43:23 s
[authdnsadmin@Secure64DNS]# cd m
changed to m
[authdnsadmin@Secure64DNS]# ls
/test12/6connectGeneric/m/:
[authdnsadmin@eval138.secure64.com]# ls
5192 2013-08-21 15:35:01 atestzone.com.zone
6758 2013-08-21 15:35:02 Testzone2.com.zone
[authdnsadmin@Secure64DNS]#
```

Step 8: Validate Zone data in Your Infrastructure

Finally, do a **dig** of the zones to verify the DNS configuration has been successfully deployed.

Using dig to validate your Secure64 Server installation

```
[authdnsadmin@eval138.secure64.com]# dig @50.198.192.141 atestzone.com
; <<>> DiG SourceT 3.x <<>> @50.198.192.141 atestzone.com
;; Got answer:
;; ~~>>HEADER<<~~ opcode: QUERY, status: NOERROR, id: 59591
;; flags: qr aa rd; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 0
;; QUESTION SECTION:
;atestzone.com. IN A
;; AUTHORITY SECTION:
atestzone.com. 3600 IN SOA ns1.dns.6connect.net. hostmaster.6connect.net. (2013082102 10800 3600 604800 38400 )
[authdnsadmin@eval138.secure64.com]#
```

For any questions regarding the integration of Secure64 products into 6connect ProVision, please email 6connect at support@6connect.com, or Secure64 at support@secure64.com

Configuring DNSSEC

⚠ **DNSSEC Implementation**
How enable DNSSEC (per zone)

First, we check to see if the signed zone exists, then:

- If it does, archive the existing keys and update the signature for 31536000 seconds (or 1 year)

- If the keys do not exist, sign new keys and create them.

For BIND

Coming soon

For DynECT

Coming soon

For Secure64 and PowerDNS

ⓘ **DNSSEC Signatures**
In this scenario, 6connect ProVision uses the DNSSEC signing functions of the respective environment we write the zones to.

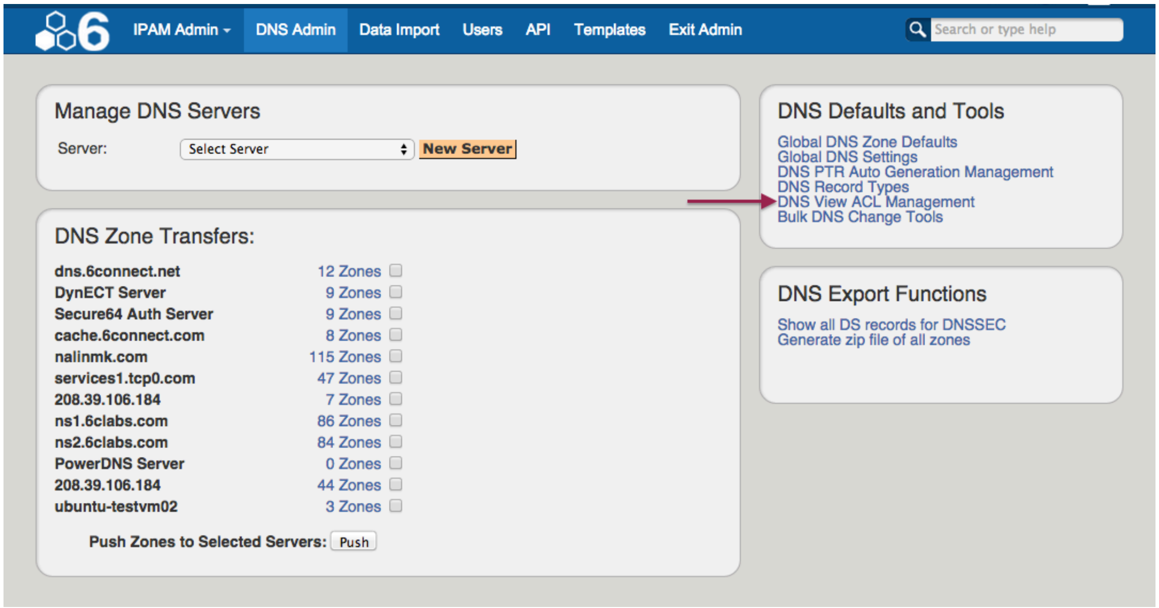
Configuring Split Horizon/Views

- Create a List in the List manager
- Define and Assign a View to the DNS Server
- Assigning other Directives
- Assign a View to a DNS Zone Record

WARNING
If you see a view named "_6connectDefault" - DO NOT DELETE IT.

Create a List in the List manager

The List manager is accessed from the **DNS Admin** tab. Click on the "DNS View ACL Management" link under DNS Defaults and Tools.



Manage DNS Servers

Server: Select Server

DNS Defaults and Tools

Global DNS Zone Defaults
Global DNS Settings
DNS PTR Auto Generation Management
DNS Record Types
DNS View ACL Management
Bulk DNS Change Tools

DNS Export Functions

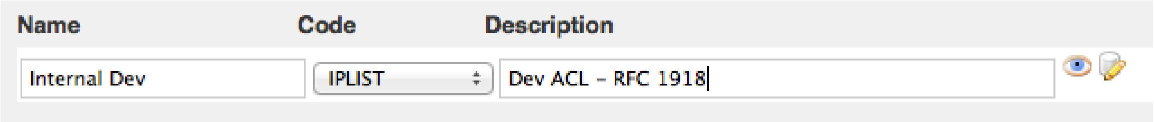
Show all DS records for DNSSEC
Generate zip file of all zones

DNS Zone Transfers:

dns.6connect.net	12 Zones	☐
DynECT Server	9 Zones	☐
Secure64 Auth Server	9 Zones	☐
cache.6connect.com	8 Zones	☐
nalinmk.com	115 Zones	☐
services1.tcp0.com	47 Zones	☐
208.39.106.184	7 Zones	☐
ns1.6clabs.com	86 Zones	☐
ns2.6clabs.com	84 Zones	☐
PowerDNS Server	0 Zones	☐
208.39.106.184	44 Zones	☐
ubuntu-testvm02	3 Zones	☐

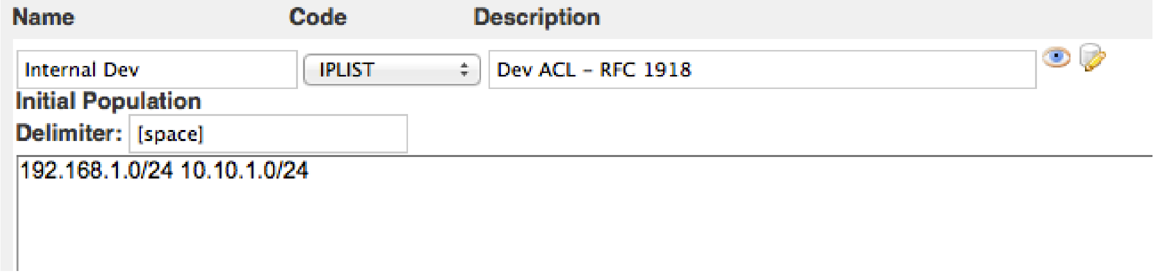
Push Zones to Selected Servers:

You will be presented with the options to **Create a New List** and also **Manage Lists**. To create a list, enter in the descriptive information and ensure that the **Code** dropdown is marked "**IPLIST**".



Name	Code	Description
Internal Dev	IPLIST	Dev ACL - RFC 1918

Press the **Eye** icon and you will be presented with en editing area to populate IP data including an option for the data delimeter (you can also do this from the **Manage Lists** section). Click on the **Pencil** icon to save your changes, the List will then be moved to the **Manage Lists** section below.



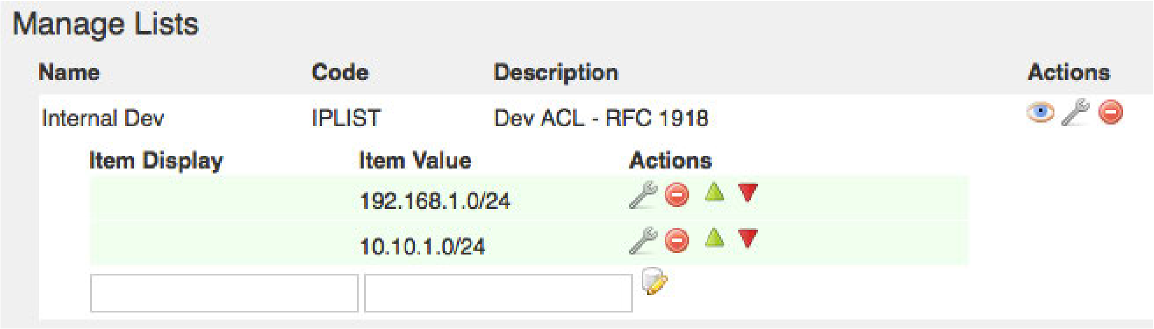
Name	Code	Description
Internal Dev	IPLIST	Dev ACL - RFC 1918

Initial Population

Delimiter: [space]

192.168.1.0/24 10.10.1.0/24

The List will now be available from the **Manage Lists** display area and can now be assigned to a Server View.



Manage Lists

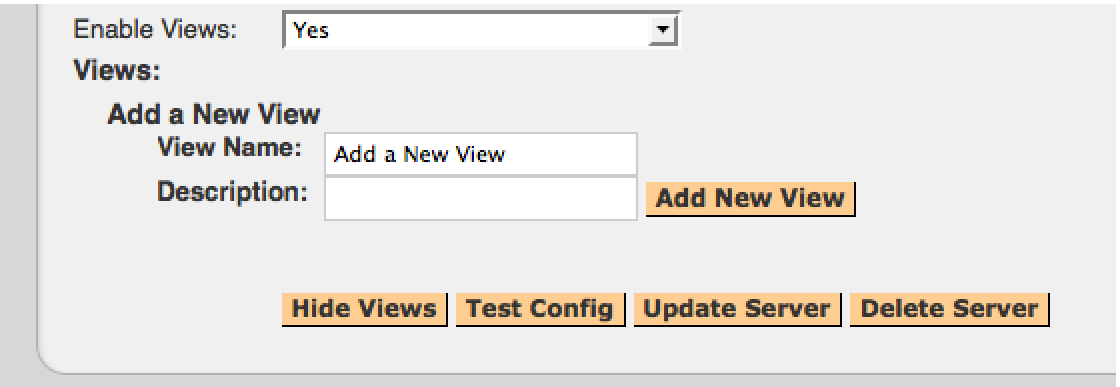
Name	Code	Description	Actions
Internal Dev	IPLIST	Dev ACL - RFC 1918	

Item Display	Item Value	Actions
	192.168.1.0/24	
	10.10.1.0/24	

Define and Assign a View to the DNS Server

In the Admin screen, go to the **DNS Admin** Tab.

Under "Manage DNS Servers", select a server and check "Enable Views". You will then have the option to define a View.



Enable Views: Yes

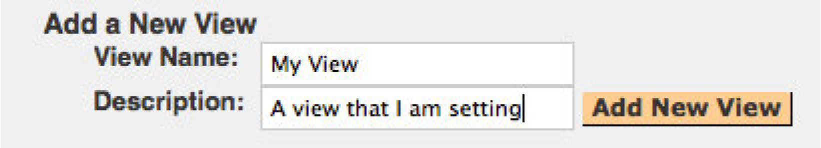
Views:

Add a New View

View Name: Add a New View

Description:

Enter identifying information for the View you are creating and click the "Add New View" button.

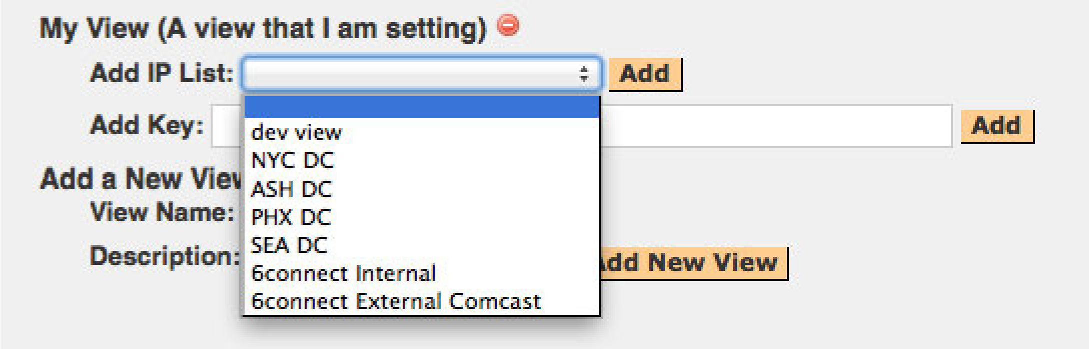


Add a New View

View Name: My View

Description: A view that I am setting

Once the View is created, you can select the IP List that you want to assign to this View by pressing the "Add" button.



My View (A view that I am setting)

Add IP List:

Add Key:

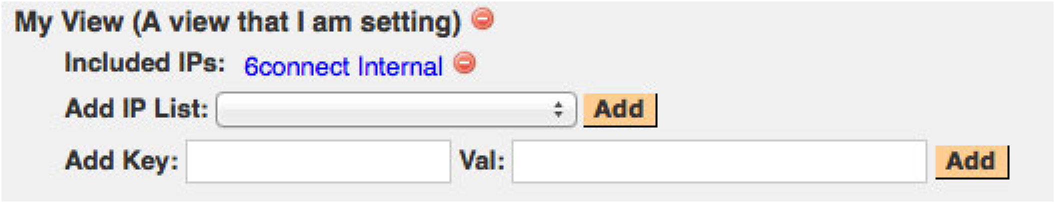
Add a New View

View Name:

Description:

Assigning other Directives

With the IP List assigned, you can either assign additional Key/Value pairs or add another IP List to apply to the View.


My View (A view that I am setting)

Included IPs: 6connect Internal

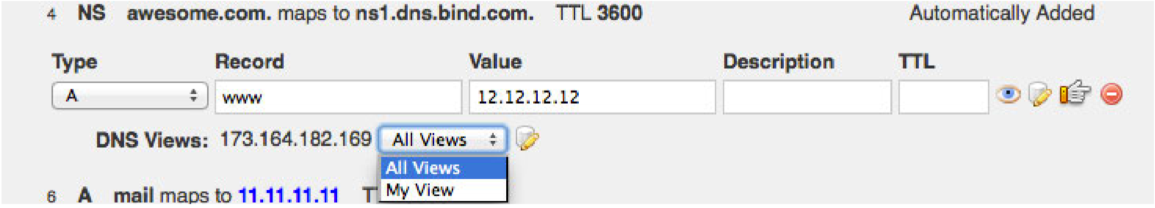
Add IP List:

Add Key: Val:

A Note on Directives
For example, if you wanted to allow recursion, you would simply enter "allow-recursion" as a Key, with a Value of "on".

Assign a View to a DNS Zone Record

When viewing a DNS Zone, ensure that the Zone is linked to a the server with a DNS View enabled. Double-click on the zone record to edit it. Click on the **Glove** icon and it will bring up the DNS Views menu where you can select the View to apply to the zone record. Click on the **Pencil** icon for the View and the **Pencil** icon for the Zone record to make sure all changes are saved.


4 NS awesome.com. maps to ns1.dns.bind.com. TTL 3600 Automatically Added

Type	Record	Value	Description	TTL
A	www	12.12.12.12		

DNS Views: 173.164.182.169 All Views

6 A mail maps to 11.11.11.11 T

Push the zone out like normal and the View should be applied as expected. You can also preview the zone from the "Show Zone" area of the screen that will be visible once you push the zone out successfully. This will also display the History for the zone if a rollback is necessary.

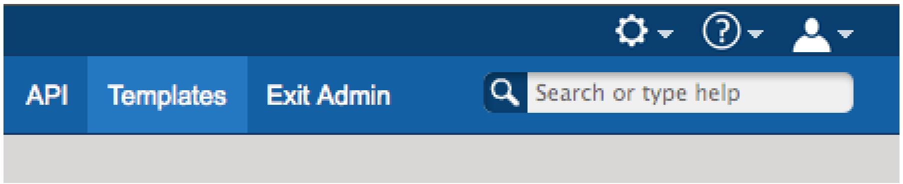
Configuring DNS Templates

Overview

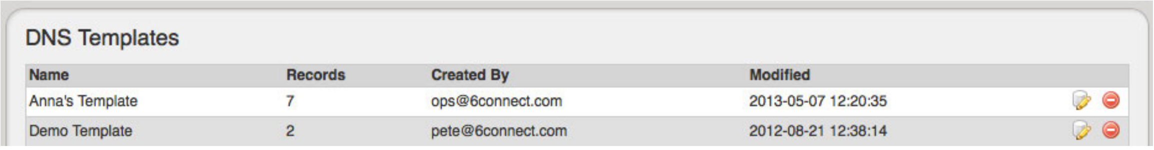
When creating a new DNS zone, the user can specify a zone template to use. Templates are setup from the Admin Section -> **Templates** Tab.

Configuring DNS Templates

Go to the **Templates** Tab in the Admin Menu



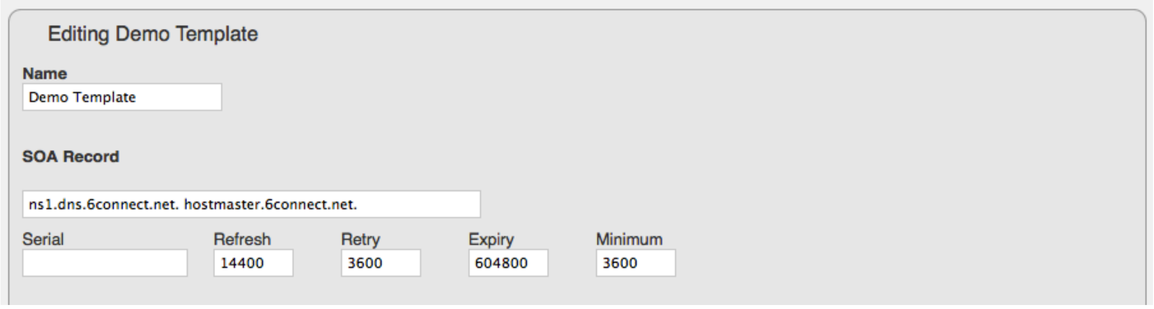
The Admin can either create a new template or edit an existing template as listed:



DNS Templates

Name	Records	Created By	Modified
Anna's Template	7	ops@6connect.com	2013-05-07 12:20:35
Demo Template	2	pete@6connect.com	2012-08-21 12:38:14

When editing a DNS template, the Admin can specify the data in the fields below:



Editing Demo Template

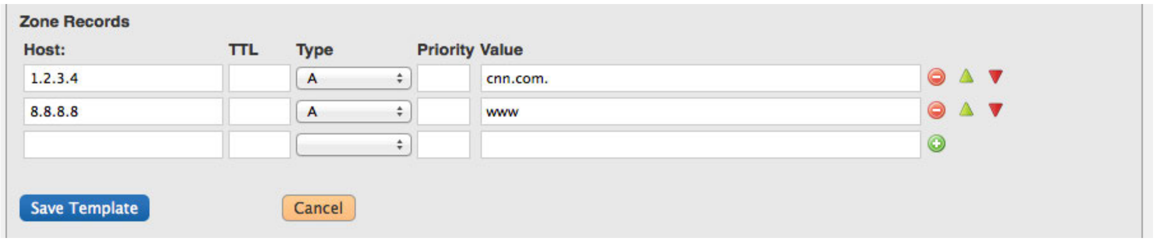
Name
Demo Template

SOA Record

ns1.dns.6connect.net. hostmaster.6connect.net.

Serial	Refresh	Retry	Expiry	Minimum
	14400	3600	604800	3600

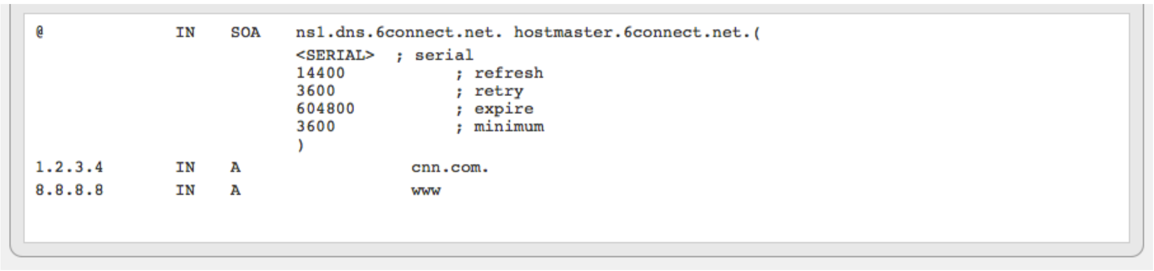
Zone record data is specified and can be added/deleted/re-ordered via the icons on the right.



Zone Records

Host:	TTL	Type	Priority	Value
1.2.3.4		A		cnn.com.
8.8.8.8		A		www

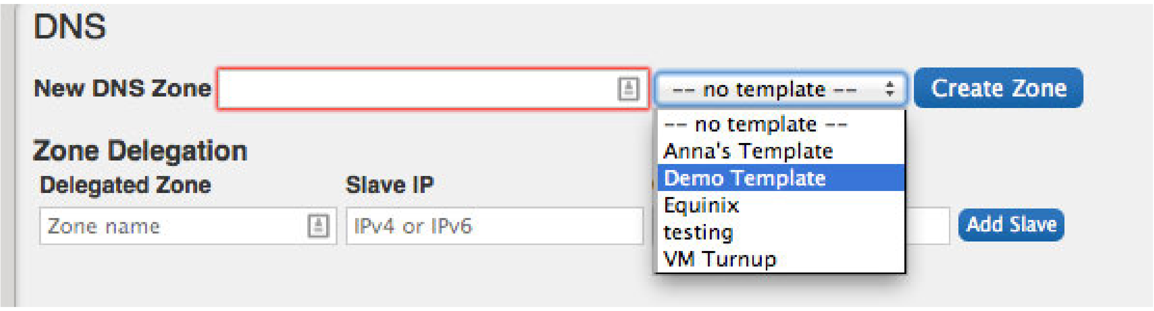
As the admin edits entries in the Template screen, the window below will be updated to show the zone file.



```
@            IN    SOA    ns1.dns.6connect.net. hostmaster.6connect.net.(
                          <SERIAL>   ; serial
                          14400            ; refresh
                          3600             ; retry
                          604800           ; expire
                          3600             ; minimum
                          )
1.2.3.4      IN    A                  cnn.com.
8.8.8.8      IN    A                  www
```

Using DNS Templates

From the DNS Gadget - select the DNS Template from the dropdown that you would like to use.



DNS Audit Tools (Alpha)

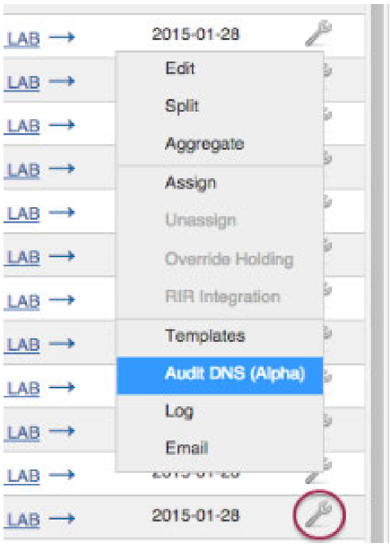
DNS Audit Tools (Alpha):

Introducing a first version of DNS audit tools to perform a simple audit of both forward and reverse DNS.

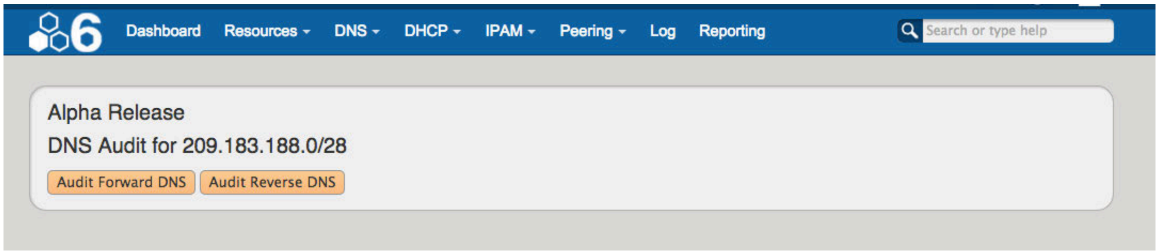
The tools set includes UI, API end points, and a command line interface. The audit results include the DNS as found in the 6connect ProVision database, the results from a resolver, and if there is a conflict in these two pieces of information.

Accessing the Audit Tools: UI

1) Access the UI version of the Tool by going to the desired block in IPAM Manage, click on the Action Menu (wrench), then select "DNS Audit (Alpha):



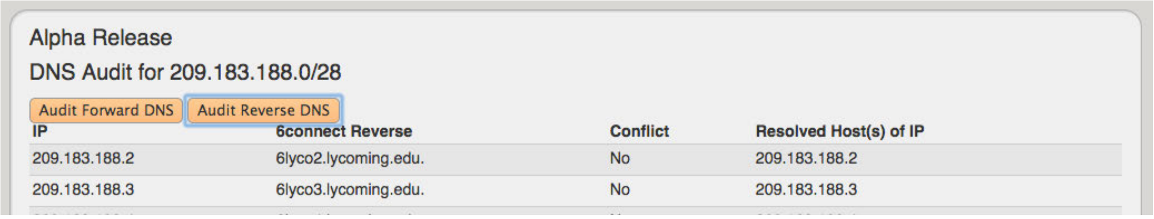
This takes you to the DNS Audit page for the block.



Alpha Release

DNS Audit for 209.183.188.0/28

2) From there, select the "Audit Forward DNS" or "Audit Reverse DNS" buttons to provide a list of IPs, the Reverse Values, Conflict Status, and Resolved Host(s).



Alpha Release

DNS Audit for 209.183.188.0/28

IP	6connect Reverse	Conflict	Resolved Host(s) of IP
209.183.188.2	6lyco2.lycoming.edu.	No	209.183.188.2
209.183.188.3	6lyco3.lycoming.edu.	No	209.183.188.3

Accessing the Audit Tools: API

Access the tools via the API through the use of:

api/v1/auditDNS/execute.php
api/v1/auditDNS/getStatus.php

Examples:
api/v1/api.php?target=auditDNS&action=execute&type=forward&block=209.183.188/28&jobId=1424218758
api/v1/api.php?target=auditDNS&action=execute&type=reverse&block=209.183.188/28&jobId=1424218758

<table>
<tr><th colspan="2">Audit DNS - Execute</th></tr>
<tr><td>URL</td><td>api/v1/api.php?target=auditDNS&action=execute</td></tr>
<tr><td>Description</td><td>Audits a DNS CIDR block</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"DNS Lookups Started."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>type</td><td>STRING</td><td>forward</td><td>Type of DNS lookup. Valid values are "forward" or "reverse".</td></tr>
<tr><td>block</td><td>STRING</td><td>209.183.188/28</td><td>CIDR of the DNS block to audit</td></tr>
<tr><td>jobId</td><td>INTEGER</td><td>1424218758</td><td>Job ID</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>api/v1/api.php?target=auditDNS&action=execute&type=forward&block=
api/v1/api.php?target=auditDNS&action=execute&type=reverse&block=</td></tr>
</table>

<table>
<tr><th colspan="2">Audit DNS - getStatus</th></tr>
<tr><td>URL</td><td>api/v1/api.php?target=auditDNS&action=getStatus</td></tr>
<tr><td>Description</td><td>Displays the audit results table information</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"state":"Completed","processNam process complete.","percentage":"1","proces</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Required Parameters</td><td><table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>block</td><td>STRING</td><td>209.183.188/28</td><td>CIDR of the DNS block to audit</td></tr><tr><td>jobId</td><td>INTEGER</td><td>1424218758</td><td>Job ID.</td></tr></table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=auditDNS&action=getStatus&block=209.183.188</td></tr>
</table>

Accessing the Audit Tools: CLI

To access the Audit Tools via the command line:

For Forward DNS: "*php audit_forward_dns.php -b "* plus the CIDR you wish to audit

Example:
php audit_forward_dns.php -b 209.183.188/28

For Reverse DNS: *"php audit_reverse_dns.php -b "* plus the CIDR you wish to audit

Example:
php audit_reverse_dns.php -b 209.183.188/28

Additional Information

DNS Audit Tools: Additional File and Example Information

Click here to expand...

- ***UI:***
  audit_dns.php

  Example:
  https://cloud.6connect.com/myinstance/audit_dns.php?block=209.183.188.0/28

- ***API:***
  Files:
  api/v1/auditDNS/execute.php
  api/v1/auditDNS/getStatus.php

  Examples:
  api/v1/api.php?target=auditDNS&action=execute&type=forward&block=209.183.188/28&jobId=1424218758
  api/v1/api.php?target=auditDNS&action=execute&type=reverse&block=209.183.188/28&jobId=1424218758

- ***Command Line:***
  Files:
  tools/audit_foward_dns.php tools/audit_reverse_dns.php

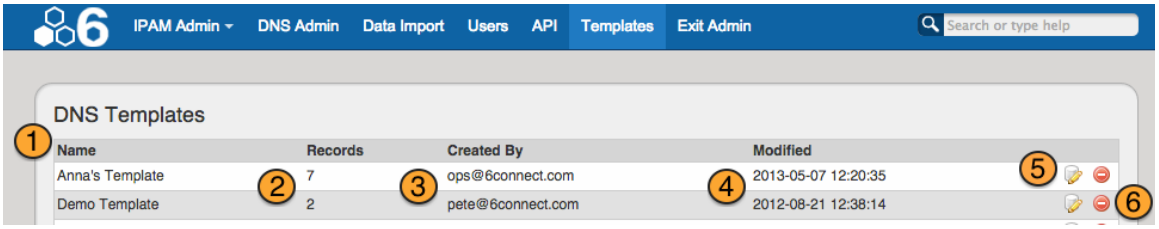
  Examples:
  php audit_forward_dns.php -b 209.183.188/28
  php audit_reverse_dns.php -b 209.183.188/28

Templates

Overview

The **Templates** tab under the Admin section allows you to view and edit DNS Templates.

When creating a new DNS zone via the gadget, the user can then specify which zone template to use.



Name	Records	Created By	Modified
Anna's Template	7	ops@6connect.com	2013-05-07 12:20:35
Demo Template	2	pete@6connect.com	2012-08-21 12:38:14

DNS Template UI:

1) **Name:** Name given to the template

2) **Records:** Number of Zone Records associated with the template

3) **Created By:** Template creator

4) **Modified:** Last date of modification

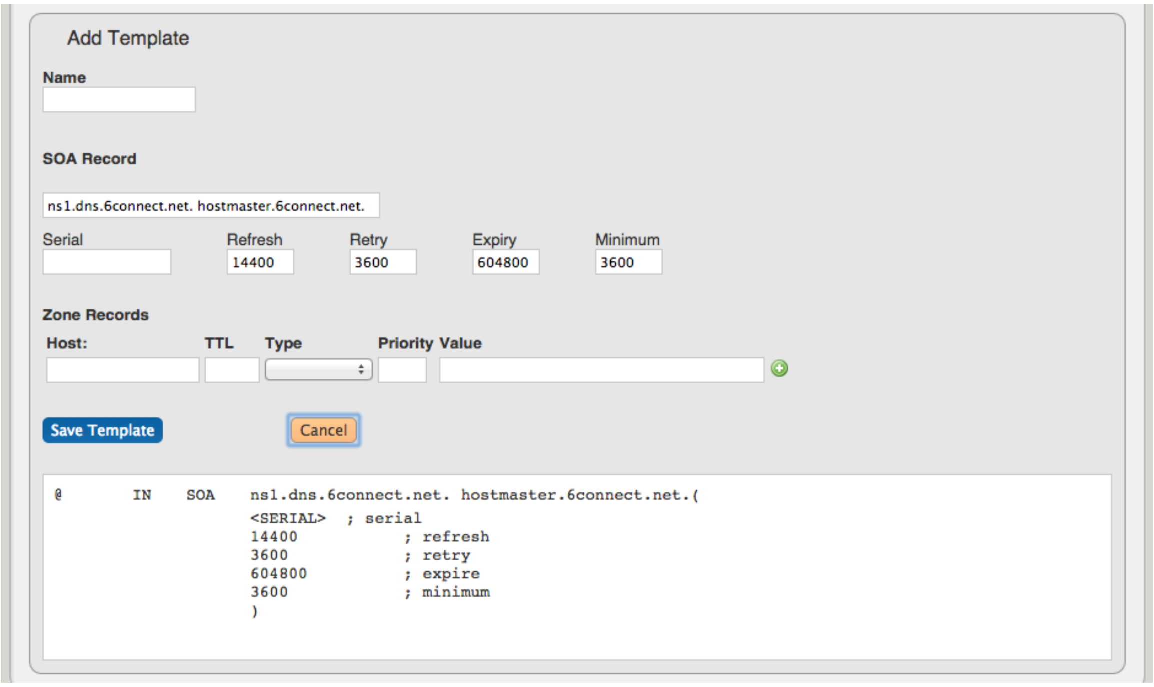
5) **Edit:** Click to bring up the template detail below and edit information

6) **Delete:** Click to delete the DNS template

Adding or Editing a DNS Template

The Admin can either create a new template or edit an existing template by clicking on the "Edit" icon in the DNS Template list for the entry.

When adding / editing a DNS template, the Admin can specify the data in the fields below:

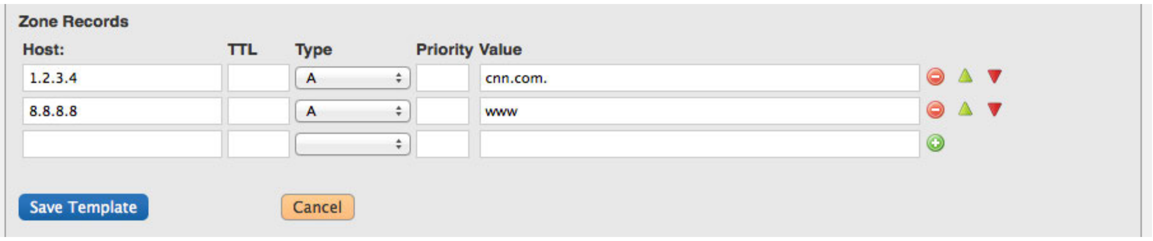


SOA Record: ns1.dns.6connect.net. hostmaster.6connect.net.

Serial	Refresh	Retry	Expiry	Minimum
	14400	3600	604800	3600

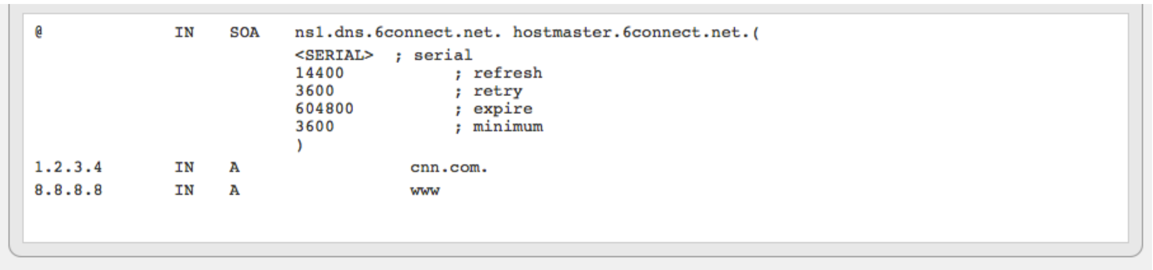
```
@        IN    SOA     ns1.dns.6connect.net. hostmaster.6connect.net.(
                       <SERIAL>   ; serial
                       14400            ; refresh
                       3600             ; retry
                       604800           ; expire
                       3600             ; minimum
                       )
```

Zone record data is specified and can be added/deleted/re-ordered via the icons on the right.



Host:	TTL	Type	Priority	Value
1.2.3.4		A		cnn.com.
8.8.8.8		A		www

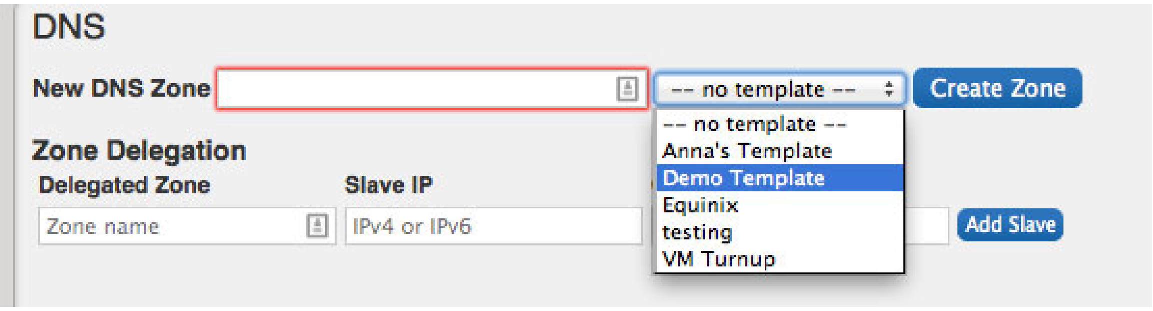
As the admin edits entries in the Template screen, the window below will be updated to show the zone file.



```
@               IN    SOA    ns1.dns.6connect.net. hostmaster.6connect.net.(
                             <SERIAL>   ; serial
                             14400           ; refresh
                             3600            ; retry
                             604800          ; expire
                             3600            ; minimum
                             )
1.2.3.4         IN    A                  cnn.com.
8.8.8.8         IN    A                  www
```

Using DNS Templates

From the DNS Gadget - select the DNS Template from the dropdown that you would like to use.



For more information on DNS Administration functions, refer to the DNS Administration section of the documentation.

Importing Your Data

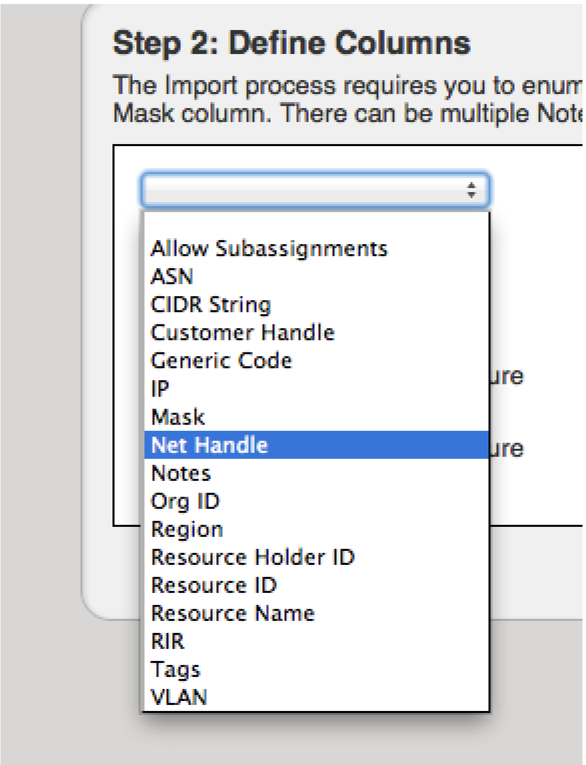
Step 1: Normalize your Data

Prior to importing your data, there is a key step of Data Normalization to ensure that information is accurate. If you need assistance with parsing your data prior to importing, 6connect can help with our Data Analyst service. Email us at support@6connect.com for more information.
You can also use off the shelf tools like Microsoft Excel, MySQL, or Google Refine if you intend to take on the task of data cleanup in house.

> **Data Encoding Format**
> To ensure correct importing of any special characters, make sure to use UTF-8 encoding for your CSV file!

Step 2: Prep your Data

You can download **Data Import** templates from the **Dashboard Tab** or **Data Import Tab**. We recommend that you open the CSV import templates and get familiar with the data fields that you can import into the platform.
For Company information you can import relevant data including mailing/billing address information as well as ARIN specific SWIP fields, and specific DNS servers.
For Contact information you can import contact records assigned to a given **Company**. We support typical fields for this data including Name, multiple email fields, phone numbers as well as Timezone and Role (Roles can be customized from the **IPAM Admin Tab)**.
For IPv4 Block information you can import the following fields:



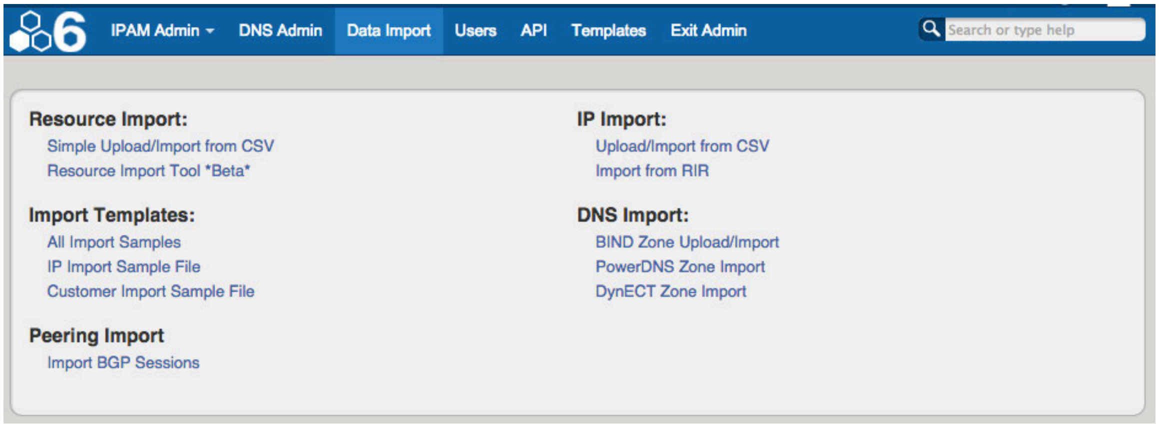
Step 2: Define Columns

The Import process requires you to enum
Mask column. There can be multiple Note

> **Allow Subassignments option**
> When importing the field "Allow Subassignments" - the parameters accepted are "TRUE", "1", "Y", "yes"

Step 3: Import your Data

Get to the **Data Import Tab** from the **Admin button** to import your data. For larger data import runs, feel free to contact 6connect at any time for assistance at support@6connect.com.



Resource Import:
- Simple Upload/Import from CSV
- Resource Import Tool *Beta*

Import Templates:
- All Import Samples
- IP Import Sample File
- Customer Import Sample File

Peering Import
- Import BGP Sessions

IP Import:
- Upload/Import from CSV
- Import from RIR

DNS Import:
- BIND Zone Upload/Import
- PowerDNS Zone Import
- DynECT Zone Import

For more details, see:

- Resource Import Tool
- Import Sessions
- Import Aggregate Blocks
- Import DNS Zones

Resource Import Tool

Importing Resources

The Resource Import Tool

The Resource Import Tool (in beta) allows you to import resource data from a .csv file into ProVision. In the Resource Import Tool, you can open one or more user-created .csv spreadsheets, perform basic editing functions if needed, associate the data to a specific Section, and correlate the data columns to specific Section Fields.

In ProVision, since Resources can be any desired entity, and Sections can be anything from "customers" to "firewalls" to "racks", you have total flexibility in what type of data to import with the Resource Importer to meet your specific company needs. Check out Working With Resources, Customizing Sections, and Customizing Fields for more details on how to fit these elements to your business.

Step 0: Before You Begin

There are a few items that you will need have set up prior to using the Resource Importer Tool. Ensure that you have:

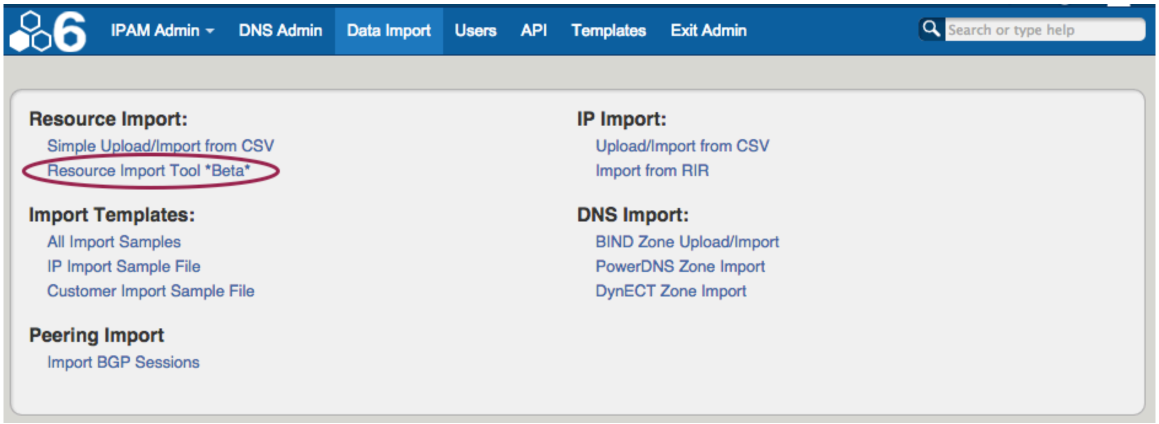
- The **.**csv document you wish to import saved with UTF-8 encoding. Windows, Mac, and Linux type .csv files are supported.
- A header row for the data in the .csv.
- The .csv file should be "clean", that is, only contain the data to be imported and a header row for that data.
- A Section created in ProVision with fields that correlate to the import data. For example, if you wish to import a list of contact information, there will need to be a Section in ProVision created for "Contacts", with fields such as "First Name", "Last Name", "email address", "Phone number", and so on. To create a new Section, or edit an existing Section, refer to Working With Resources, Customizing Sections, and Customizing Fields.

> If the above preconditions are not met, the Resource Importer Tool may not be able to correctly read the .csv file or complete the import. Verify UTF-8 .csv encoding, a clean dataset with a header row, and that an appropriate Section exists in ProVision prior to import.

> **Best Practice**
> To ensure a fast and straightforward resource import, best practice is to verify ahead of time that your .csv data is correct and contains all the necessary column information for the Section. This includes a top-level Name and Unique ID, as well as a column per Section field. Data edits and column adjustments can be performed inside the Resource Importer Tool if necessary, but will require additional time and steps.

Opening the Resource Import Tool

To open the Resource Import Tool, navigate to the **Data Import Tab** from the **Admin button** to import your aggregate blocks. Select "Resource Import Tool" under "Resource Import".



Resource Import:
Simple Upload/Import from CSV
Resource Import Tool *Beta*

Import Templates:
All Import Samples
IP Import Sample File
Customer Import Sample File

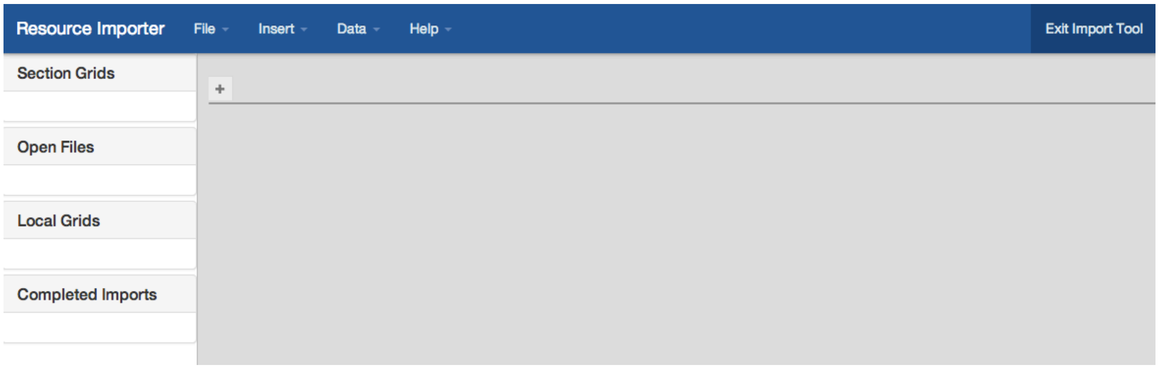
Peering Import
Import BGP Sessions

IP Import:
Upload/Import from CSV
Import from RIR

DNS Import:
BIND Zone Upload/Import
PowerDNS Zone Import
DynECT Zone Import

The Resource Import Tool UI

When you first open the Resource Importer, you will be given the option to view a short on-screen guide to using the tool. After stepping through the guide and/or exiting out of it, the tool will look like this:



On the top are standard menu options of "File", "Insert", and Data" and "Help". Under those menus, you may see greyed-out functions listed. Those functions are items under development, or not available to use at the current Importer step.

On the left side of the screen is a listing of currently opened files:

Sections Grids lists grids currently open that were created from a ProVision Section

Open Files lists the current user created .csv spreadsheets that are open

Local Grids lists any grids that were created in the tool itself, instead of opened from an external file

Completed Imports show imports which have been completed and imported into ProVision

If, at any time, you need to leave the Resource Importer Tool, select the "Exit Import Tool" in the top right corner of the screen, and you will be taken back to the ProVision Dashboard.

Exiting the Resource Importer Tool prior to completing the import process will result in the current open grids being discarded.

Resource Importer Walkthrough

For a step by step walkthrough of the Resource importer, continue on to the Resource Importer Walkthrough , which shows how to import a sample contact list and perform minor editing tasks.

Resource Importer Walkthrough - Step 1 Upload your .csv data file

Resource Importer Walkthrough - Step 2 Open a Template Grid from an existing Section

Resource Importer Walkthrough - Step 3 Reorder .csv columns to match the Section Grid column order

Resource Importer Walkthrough - Step 4 Edit Data as Needed

Resource Importer Walkthrough - Step 5 Drag rows from the .csv Grid to the Section Grid

Resource Importer Walkthrough - Step 6 Import into ProVision

Resource Importer Walkthrough - Step 1

Importing Resources

Before You Begin

Ensure that you are familiar with the overview and "Before you Begin" requirements listed on the Resource Import Tool page.

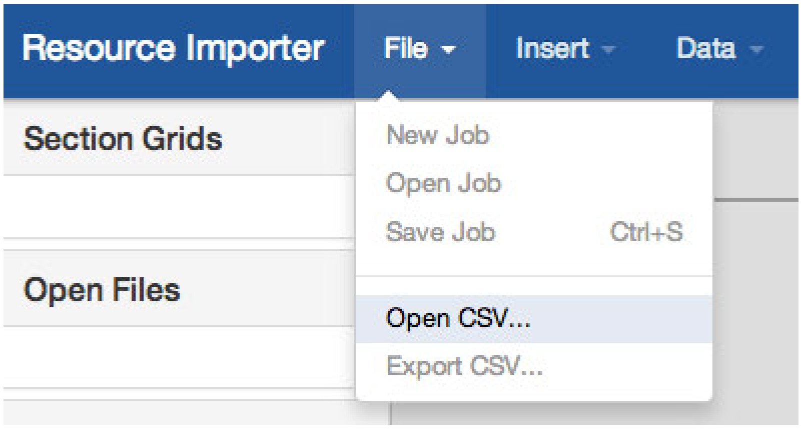
For this tutorial, we will be using the Contact Import Sample .csv available on the Import Templates page as an example, and associating it to an existing Section called "Contact" having the fields: First Name, Last Name, Email, 2nd Email, Phone, 2nd Phone, Mobile Phone, Role, and Time Zone. To create this Section, or edit an existing Section, refer to Working With Resources, Customizing Sections, and Customizing Fields.

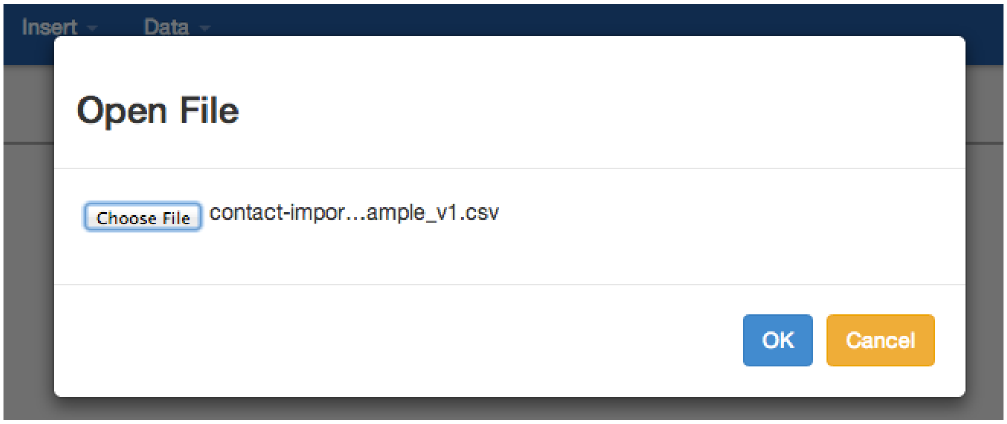
In order to illustrate the abilities of the Resource Importer to edit data and adjust for formatting issues, the Contact Import Sample .csv is used intentionally leaving a few less-than-ideal conditions (much like you may encounter in real life) such as leaving typos, having an extra data column, and missing a needed column. If you follow the "Before you Begin" requirements and "Best Practice" notes, however, you may be able to skip any editing or column adjustment steps.

When you are ready to begin, open the Resource Importer and proceed to Step 1.

Step 1: Upload your .csv data file

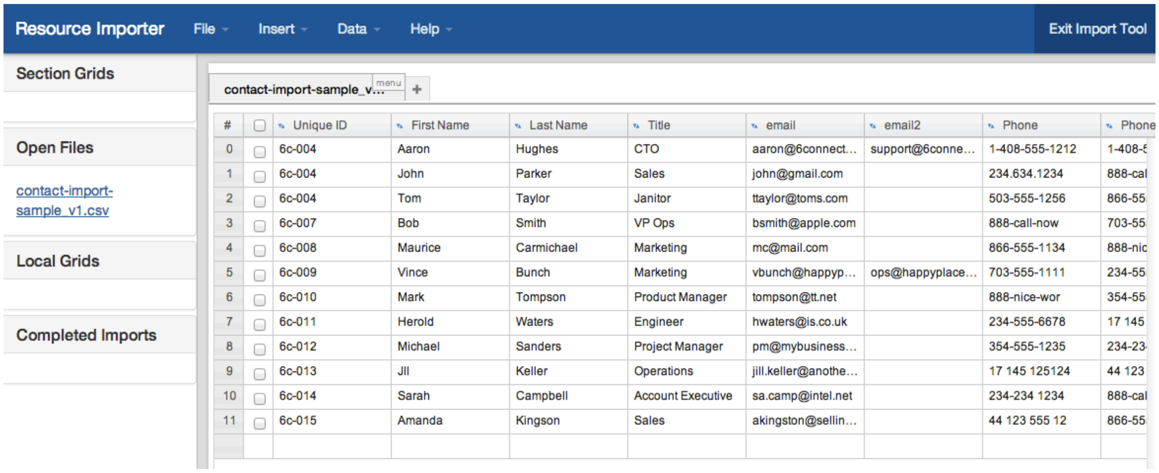
Under the "File" Menu, select "Open .csv". Browse to and select your UTF-8 encoded data file.





contact-impor...ample_v1.csv

After hitting "OK", your file should be visible in the workspace, as well as listed under "Open Files" like this:



#	☐	Unique ID	First Name	Last Name	Title	email	email2	Phone	Phone
0	☐	6c-004	Aaron	Hughes	CTO	aaron@6connect...	support@6conne...	1-408-555-1212	1-408-
1	☐	6c-004	John	Parker	Sales	john@gmail.com		234.634.1234	888-cal
2	☐	6c-004	Tom	Taylor	Janitor	ttaylor@toms.com		503-555-1256	866-55
3	☐	6c-007	Bob	Smith	VP Ops	bsmith@apple.com		888-call-now	703-55
4	☐	6c-008	Maurice	Carmichael	Marketing	mc@mail.com		866-555-1134	888-nic
5	☐	6c-009	Vince	Bunch	Marketing	vbunch@happyp...	ops@happyplace...	703-555-1111	234-55
6	☐	6c-010	Mark	Tompson	Product Manager	tompson@tt.net		888-nice-wor	354-55
7	☐	6c-011	Herold	Waters	Engineer	hwaters@is.co.uk		234-555-6678	17 145
8	☐	6c-012	Michael	Sanders	Project Manager	pm@mybusiness...		354-555-1235	234-23
9	☐	6c-013	JIl	Keller	Operations	jill.keller@anothe...		17 145 125124	44 123
10	☐	6c-014	Sarah	Campbell	Account Executive	sa.camp@intel.net		234-234 1234	888-cal
11	☐	6c-015	Amanda	Kingson	Sales	akingston@sellin...		44 123 555 12	866-55

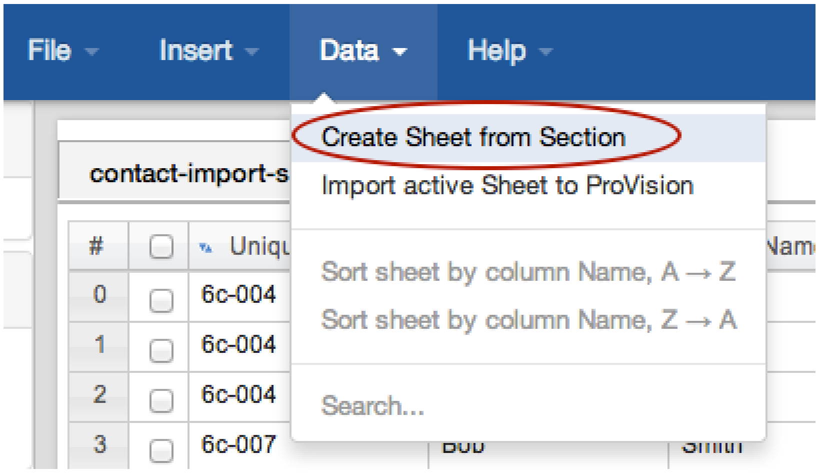
After opening your .csv grid, proceed to Step 2 - Open a template grid from an existing Section

Resource Importer Walkthrough - Step 2

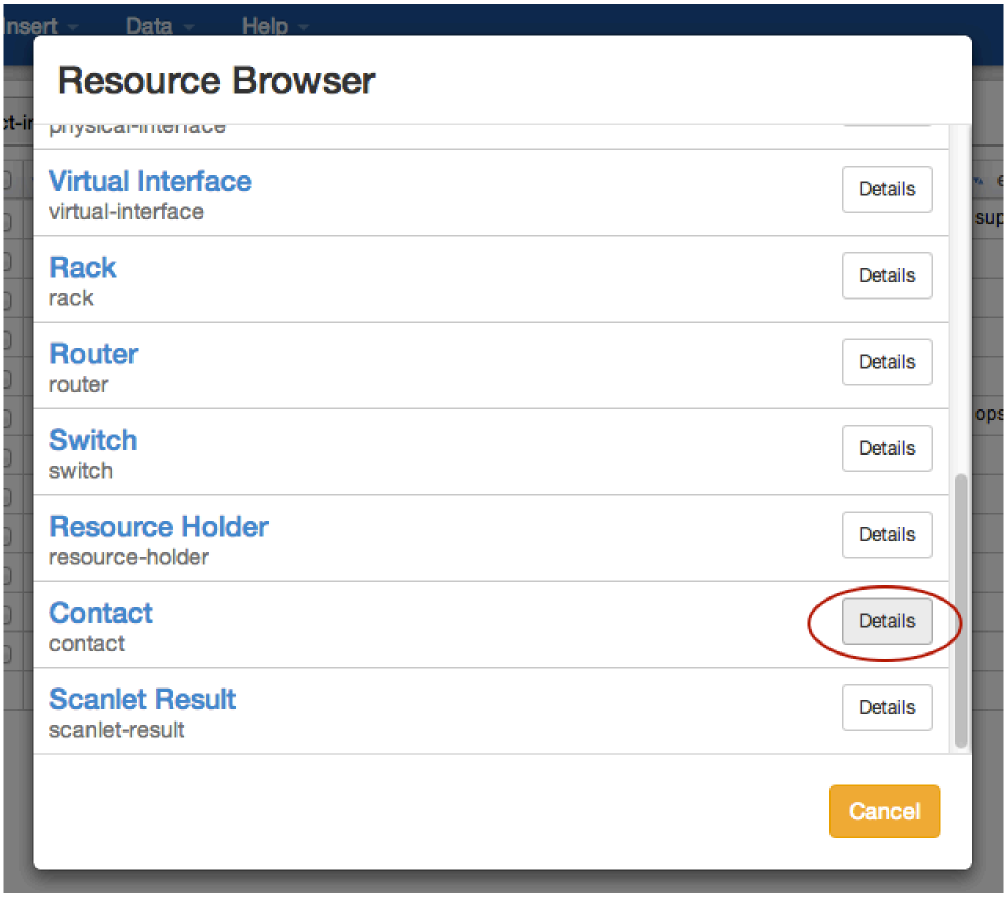
Importing Resources

Step 2: Open a Template Grid from an existing Section

Under the "Data" menu, select "Create Sheet from Section".

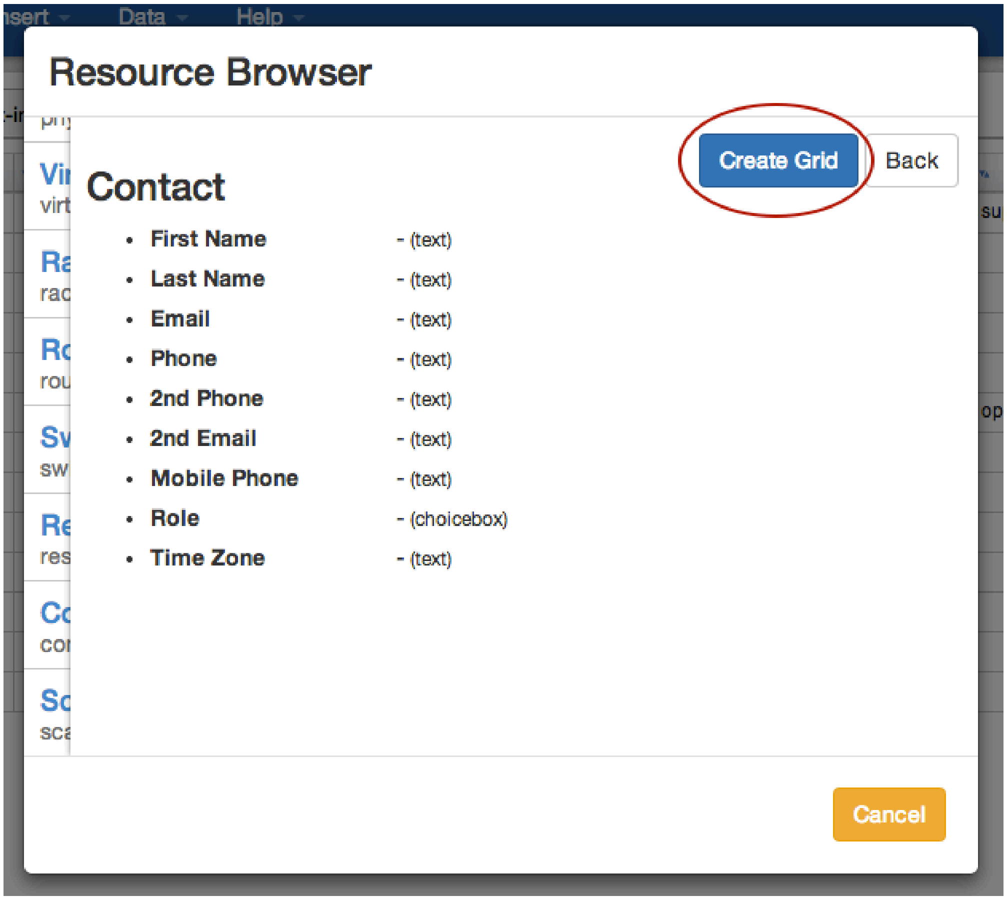

File
Insert
Data
Help
contact-import-s
Create Sheet from Section
Import active Sheet to ProVision
Sort sheet by column Name, A → Z
Sort sheet by column Name, Z → A
Search...
#
Uniqu
Nam
0
6c-004
1
6c-004
2
6c-004
3
6c-007
Bob
Smith

The Resource Browser will pop up, showing the list of Sections currently available in Provision. Clicking on the "Details" button will show the fields for that Section.



Verify that the Section and available fields match the type of data you are trying to import. In this case, the Section "Contact" has the fields that correlate to our spreadsheet data.

Select "Create Grid" to create a grid based off this Section.

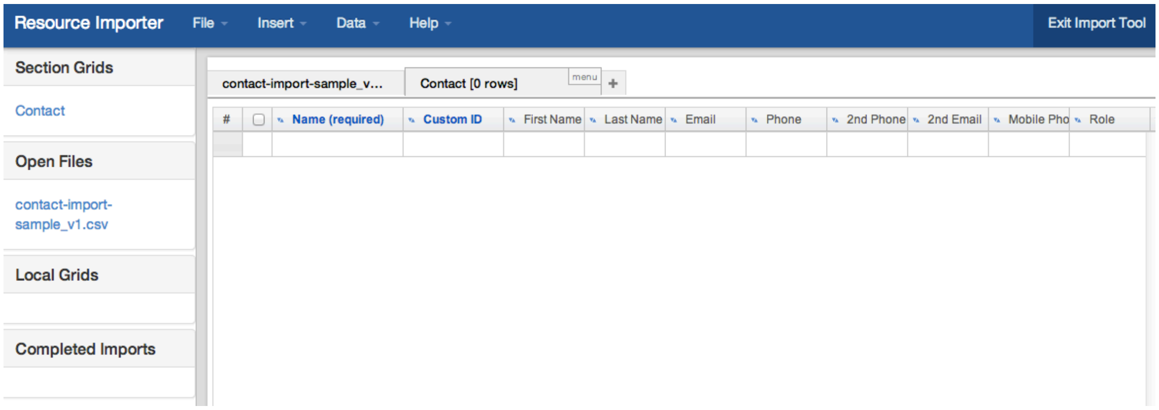


Resource Browser

Contact

- First Name - (text)
- Last Name - (text)
- Email - (text)
- Phone - (text)
- 2nd Phone - (text)
- 2nd Email - (text)
- Mobile Phone - (text)
- Role - (choicebox)
- Time Zone - (text)

When the Section Grid has been created, required fields will show in blue font with (required) after the header, in this case, "Name" is a required field. The "Custom ID" field is metadata allowing for a unique ID to be associated with each entry, but is not necessary for a successful import. The remainder of the headers directly match the Section's fields.



#	☐	Name (required)	Custom ID	First Name	Last Name	Email	Phone	2nd Phone	2nd Email	Mobile Pho	Role

After you have opened your Section Grid, proceed to Step 3: Reorder .csv columns to match the Section Grid

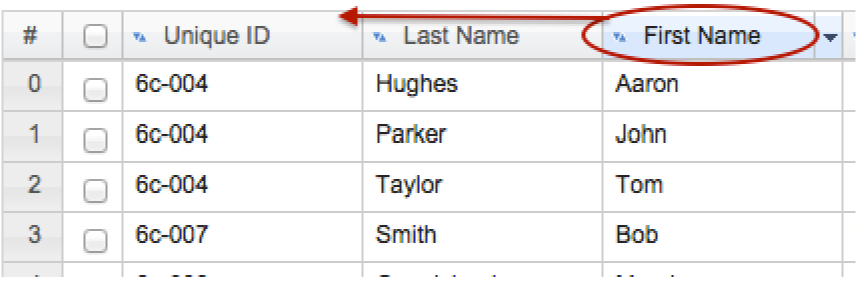
Resource Importer Walkthrough - Step 3

Importing Resources

Step 3: Reorder .csv columns to match the Section Grid column order

One of the most important steps is to reorder the columns from the .csv data to match the order of the Section Grid headers - think of the importer as copying and pasting the csv data into the "Contact" Section grid- we want to ensure that the data is under the correct headers!

Click on the column header to Drag and Drop to the desired location:



#	☐	Unique ID	Last Name	First Name
0	☐	6c-004	Hughes	Aaron
1	☐	6c-004	Parker	John
2	☐	6c-004	Taylor	Tom
3	☐	6c-007	Smith	Bob

Click back and forth between the tabs to verify the column order, then click on a header and drag and drop into the desired order. This moves not only the header, but also the data below it.

Common Column Editing Questions

What if just my column headers are in the wrong place?

What if I have too many / too few columns in my .csv to match the Section Grid?

If you see any of these issues, proceed to Step 4 - Edit data as needed.

Otherwise, if your columns match up perfectly and none of the data needs editing, skip to Step 5 - Drag rows to the Section Grid

Resource Importer Walkthrough - Step 4

Importing Resources

Step 4: Edit data as needed

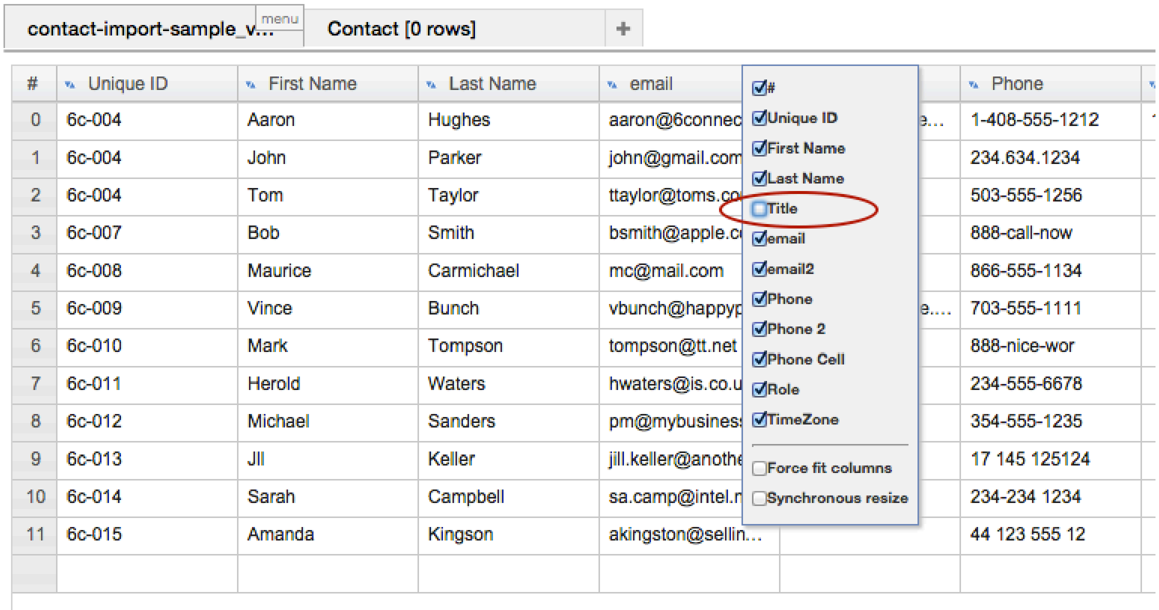
As you may have noticed in Step 3, with this example we have a couple of columns that don't quite match up to the Section Grid. The "Title" column in the .csv data is an additional column we are not tracking in our Section. Also, although we have a "First Name" and "Last Name", we are missing a data column for the top-level "Name" required in the Section Grid.

Common Editing Questions:

- What if I have too many / too few columns in my .csv to match the Section Grid?
- What if I see a typo in the .csv data?
- What if just my column headers are in the wrong place?

To hide extraneous column information:

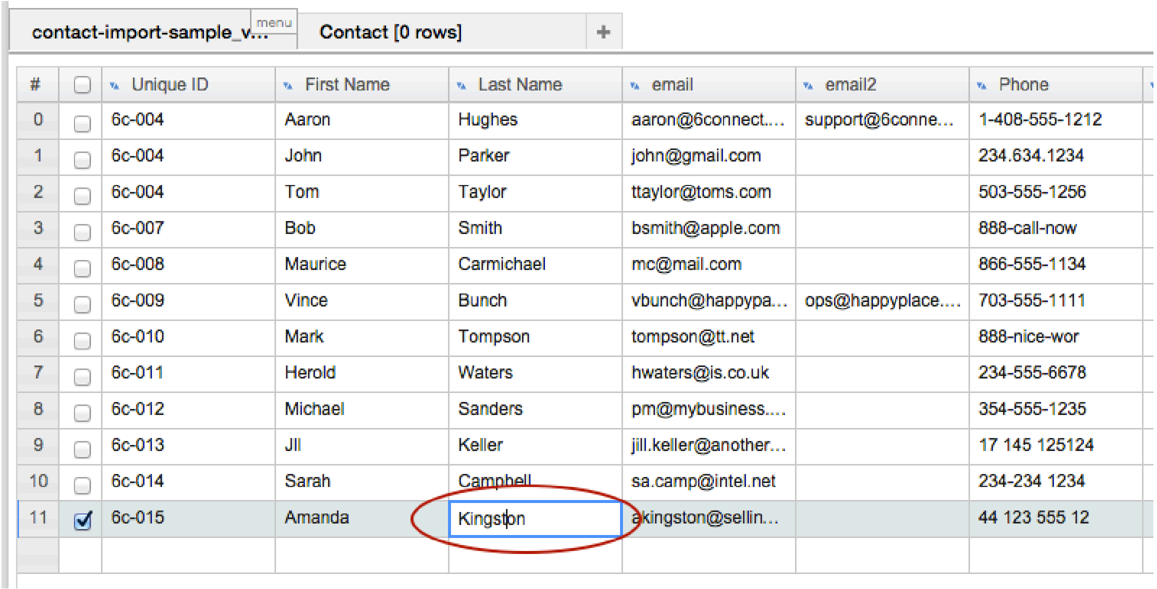
Right click on a header and deselect the check box for the column you wish to hide. In this case, we want to hide "Title".



#	Unique ID	First Name	Last Name	email		Phone
0	6c-004	Aaron	Hughes	aaron@6connec	e...	1-408-555-1212
1	6c-004	John	Parker	john@gmail.com		234.634.1234
2	6c-004	Tom	Taylor	ttaylor@toms.co		503-555-1256
3	6c-007	Bob	Smith	bsmith@apple.c		888-call-now
4	6c-008	Maurice	Carmichael	mc@mail.com		866-555-1134
5	6c-009	Vince	Bunch	vbunch@happyp	e....	703-555-1111
6	6c-010	Mark	Tompson	tompson@tt.net		888-nice-wor
7	6c-011	Herold	Waters	hwaters@is.co.u		234-555-6678
8	6c-012	Michael	Sanders	pm@mybusines		354-555-1235
9	6c-013	JIl	Keller	jill.keller@anothe		17 145 125124
10	6c-014	Sarah	Campbell	sa.camp@intel.n		234-234 1234
11	6c-015	Amanda	Kingson	akingston@sellin...		44 123 555 12

To Edit Data in the Resource Importer

Data in the grids can be edited directly by clicking on the cell(s). In our example, we can see that "Amanda Kingson" should really be "Amanda Kingston". Let's fix that! Click in the cell, type in the edit you wish to make, and then click outside of the cell to exit edit mode. To edit a full row of data, you can right click on the row, select "Edit" row, and make multiple changes in the form box.

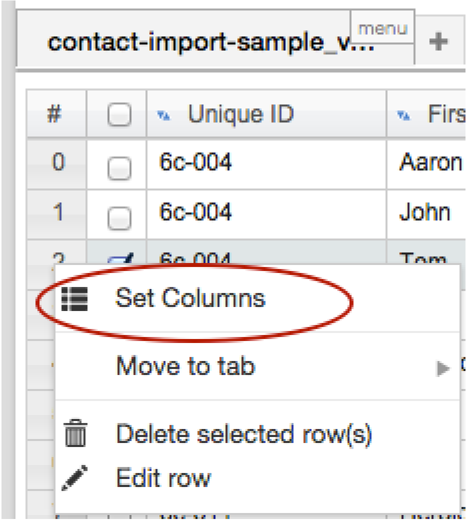


#	☐	Unique ID	First Name	Last Name	email	email2	Phone
0	☐	6c-004	Aaron	Hughes	aaron@6connect....	support@6conne...	1-408-555-1212
1	☐	6c-004	John	Parker	john@gmail.com		234.634.1234
2	☐	6c-004	Tom	Taylor	ttaylor@toms.com		503-555-1256
3	☐	6c-007	Bob	Smith	bsmith@apple.com		888-call-now
4	☐	6c-008	Maurice	Carmichael	mc@mail.com		866-555-1134
5	☐	6c-009	Vince	Bunch	vbunch@happypa...	ops@happyplace....	703-555-1111
6	☐	6c-010	Mark	Tompson	tompson@tt.net		888-nice-wor
7	☐	6c-011	Herold	Waters	hwaters@is.co.uk		234-555-6678
8	☐	6c-012	Michael	Sanders	pm@mybusiness....		354-555-1235
9	☐	6c-013	JIl	Keller	jill.keller@another...		17 145 125124
10	☐	6c-014	Sarah	Campbell	sa.camp@intel.net		234-234 1234
11	☑	6c-015	Amanda	Kingston	akingston@sellin...		44 123 555 12

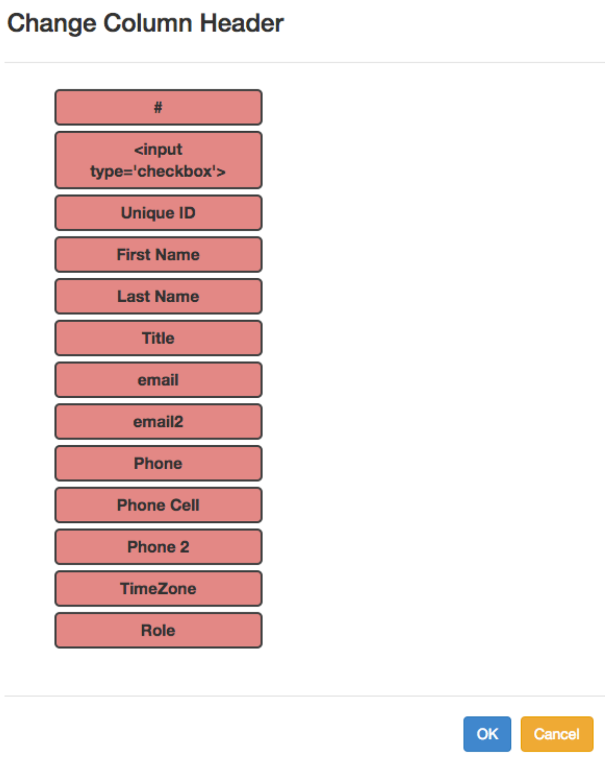
If a column header is over the wrong data:

If just the header is in the wrong spot (doesn't match the data below it), you can move just the column header in the Resource Importer, without moving the data below it.

1) Right click on a row of the grid to edit and select "Set Columns":



2) In the "Change Column Header" dialog box, drag and drop the column header(s) into the desired order. Remember, this only moves the headers, not the data below them! Then, hit "OK".



If your .csv data is missing a data column needed for the Section grid:

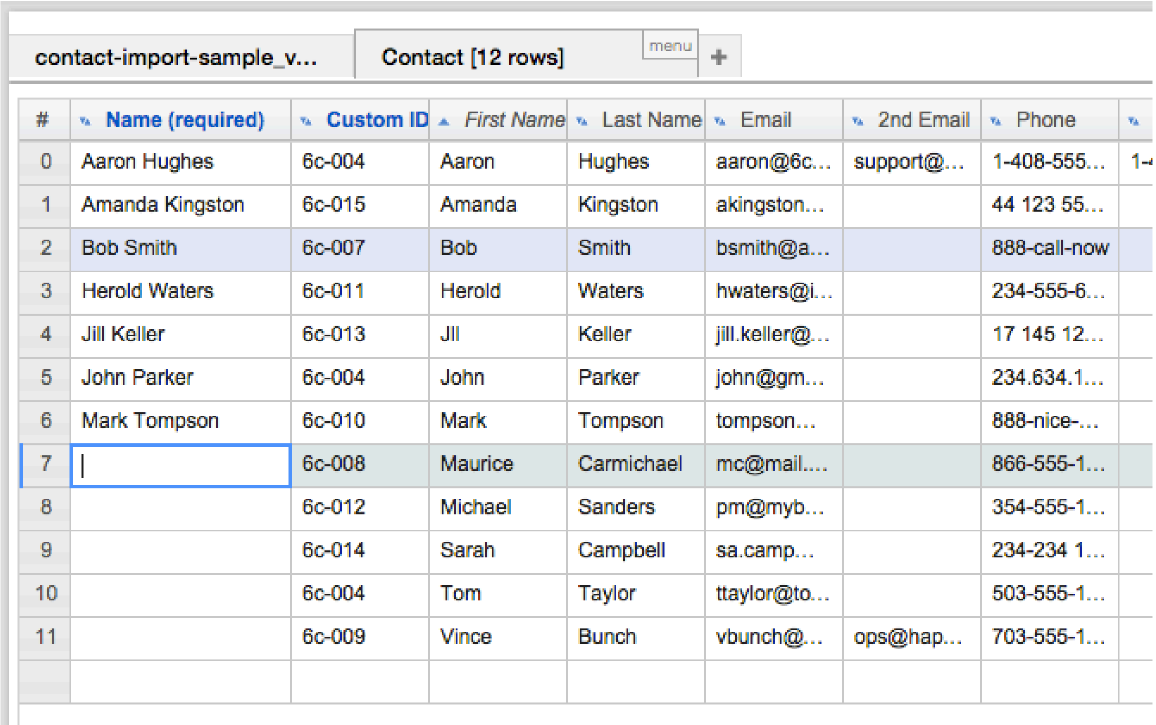
In our case, the .csv data is missing the required "Name" column for the Section grid. Think of the "Name" as the information you would want to search for in Provision. We wouldn't want to search just for "Bob" or "Smith" when looking down a list of names, so under the "Name" column, we need to see the full first and last names, like "Bob Smith".

Currently, our options to fix this are:

1) Edit the .csv directly in your spreadsheet program: (Recommended) Simply revise the .csv to include another column for "Name", and re-open the .csv in the importer. The benefit to this method is your .csv file will be set up as a template for future imports.

Or:

2) In the Resource Importer, temporarily hide the extra column in the Section Grid: Make the columns between the .csv and the Section Grid match exactly by temporarily hiding the column (in this case, "Name") in the Section Grid, proceed to move the data into the Section grid (see Step 5), then unhide the "Name" column and manually add the data as needed prior to completing the import.



#	Name (required)	Custom ID	First Name	Last Name	Email	2nd Email	Phone	
0	Aaron Hughes	6c-004	Aaron	Hughes	aaron@6c…	support@…	1-408-555…	1-
1	Amanda Kingston	6c-015	Amanda	Kingston	akingston…		44 123 55…	
2	Bob Smith	6c-007	Bob	Smith	bsmith@a…		888-call-now	
3	Herold Waters	6c-011	Herold	Waters	hwaters@i…		234-555-6…	
4	Jill Keller	6c-013	Jll	Keller	jill.keller@…		17 145 12…	
5	John Parker	6c-004	John	Parker	john@gm…		234.634.1…	
6	Mark Tompson	6c-010	Mark	Tompson	tompson…		888-nice-…	
7		6c-008	Maurice	Carmichael	mc@mail.…		866-555-1…	
8		6c-012	Michael	Sanders	pm@myb…		354-555-1…	
9		6c-014	Sarah	Campbell	sa.camp…		234-234 1…	
10		6c-004	Tom	Taylor	ttaylor@to…		503-555-1…	
11		6c-009	Vince	Bunch	vbunch@…	ops@hap…	703-555-1…	

When edits and adjustments are complete, move to Step 5 - Drag rows to the Section Grid

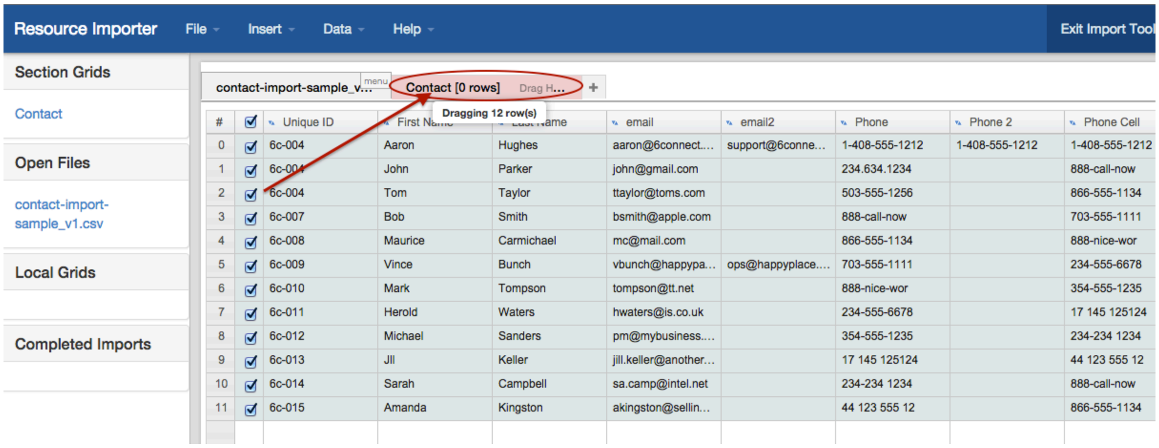
Resource Importer Walkthrough - Step 5

Importing Resources

Step 5: Drag rows from the .csv Grid to the Section Grid

Once you have set the columns to match exactly between the .csv Grid and the Section grid, it's time to pull in the data from one to the other.

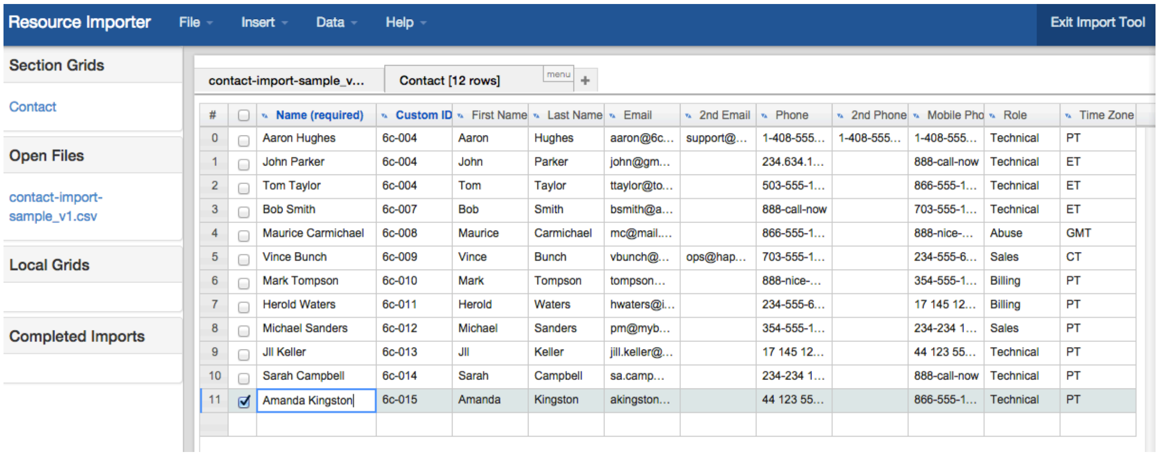
Simply click the checkboxes for the rows you wish to import (or use the "Select all" checkbox at the top), click anywhere on the row, and drag & drop onto the Section Grid tab ("Contact"). The tool will tell you how many rows you are moving as you drag them.



#	☑	Unique ID	First Name	Last Name	email	email2	Phone	Phone 2	Phone Cell
0	☑	6c-004	Aaron	Hughes	aaron@6connect....	support@6conne...	1-408-555-1212	1-408-555-1212	1-408-555-1212
1	☑	6c-004	John	Parker	john@gmail.com		234.634.1234		888-call-now
2	☑	6c-004	Tom	Taylor	ttaylor@toms.com		503-555-1256		866-555-1134
3	☑	6c-007	Bob	Smith	bsmith@apple.com		888-call-now		703-555-1111
4	☑	6c-008	Maurice	Carmichael	mc@mail.com		866-555-1134		888-nice-wor
5	☑	6c-009	Vince	Bunch	vbunch@happypa...	ops@happyplace....	703-555-1111		234-555-6678
6	☑	6c-010	Mark	Tompson	tompson@tt.net		888-nice-wor		354-555-1235
7	☑	6c-011	Herold	Waters	hwaters@is.co.uk		234-555-6678		17 145 125124
8	☑	6c-012	Michael	Sanders	pm@mybusiness....		354-555-1235		234-234 1234
9	☑	6c-013	Jll	Keller	jill.keller@another...		17 145 125124		44 123 555 12
10	☑	6c-014	Sarah	Campbell	sa.camp@intel.net		234-234 1234		888-call-now
11	☑	6c-015	Amanda	Kingston	akingston@sellin...		44 123 555 12		866-555-1134

Click on the "Contact" tab when you are done, and you will now see your data in there, instead of the original .csv.

If you had to hide columns in the Section Grid prior to moving the .csv data, verify that all columns are visible and the required data filled in. In this case, we filled in the "Name" Column that was missing in the original .csv.



#	☐	Name (required)	Custom ID	First Name	Last Name	Email	2nd Email	Phone	2nd Phone	Mobile Pho	Role	Time Zone
0	☐	Aaron Hughes	6c-004	Aaron	Hughes	aaron@6c...	support@...	1-408-555...	1-408-555...	1-408-555...	Technical	PT
1	☐	John Parker	6c-004	John	Parker	john@gm...		234.634.1...		888-call-now	Technical	ET
2	☐	Tom Taylor	6c-004	Tom	Taylor	ttaylor@to...		503-555-1...		866-555-1...	Technical	ET
3	☐	Bob Smith	6c-007	Bob	Smith	bsmith@a...		888-call-now		703-555-1...	Technical	ET
4	☐	Maurice Carmichael	6c-008	Maurice	Carmichael	mc@mail....		866-555-1...		888-nice-...	Abuse	GMT
5	☐	Vince Bunch	6c-009	Vince	Bunch	vbunch@...	ops@hap...	703-555-1...		234-555-6...	Sales	CT
6	☐	Mark Tompson	6c-010	Mark	Tompson	tompson...		888-nice-...		354-555-1...	Billing	PT
7	☐	Herold Waters	6c-011	Herold	Waters	hwaters@i...		234-555-6...		17 145 12...	Billing	PT
8	☐	Michael Sanders	6c-012	Michael	Sanders	pm@myb...		354-555-1...		234-234 1...	Sales	PT
9	☐	Jll Keller	6c-013	Jll	Keller	jill.keller@...		17 145 12...		44 123 55...	Technical	PT
10	☐	Sarah Campbell	6c-014	Sarah	Campbell	sa.camp...		234-234 1...		888-call-now	Technical	PT
11	☑	Amanda Kingston	6c-015	Amanda	Kingston	akingston...		44 123 55...		866-555-1...	Technical	PT

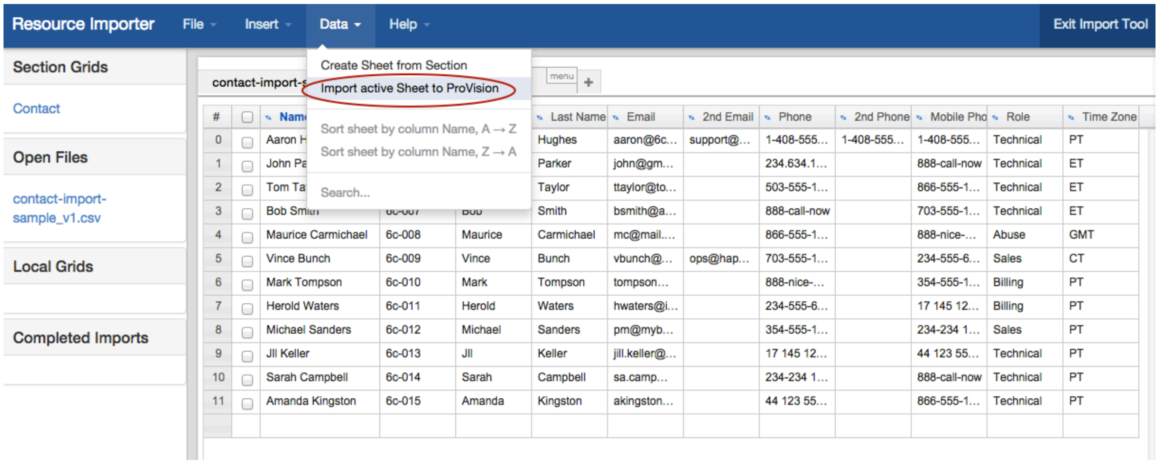
After moving your data into the Section grid, proceed to Step 6 - Importing into ProVision.

Resource Importer Walkthrough - Step 6

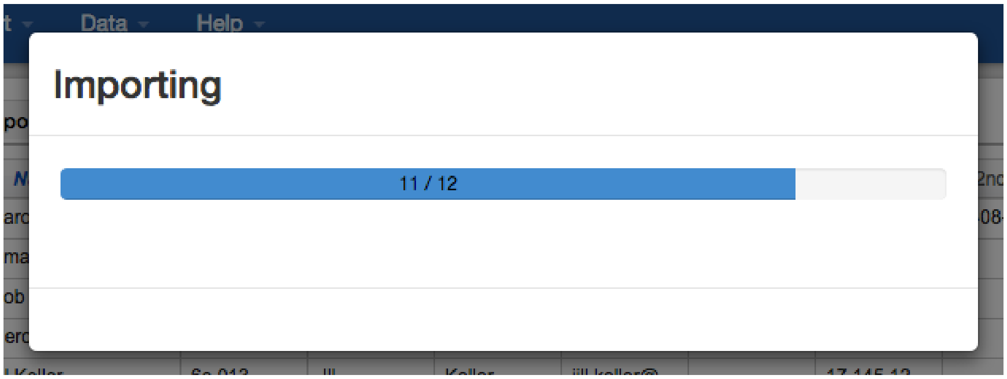
Importing Resources

Step 6: Import into ProVision

When all of the data is under the Section Grid tab, and any required field data filled in, you can import the data into Provision! From the Data menu, select "Import active Sheet into ProVision". You will see an import progress bar. Once complete, you data will be in provision, filled into the Section fields for your chosen Resource.


Resource Importer
File
Insert
Data
Help
Exit Import Tool
Section Grids
Contact
Open Files
contact-import-sample_v1.csv
Local Grids
Completed Imports
contact-import-s
menu
+
Create Sheet from Section
Import active Sheet to ProVision
Sort sheet by column Name, A → Z
Sort sheet by column Name, Z → A
Search...

#	☐	Name			Last Name	Email	2nd Email	Phone	2nd Phone	Mobile Pho	Role	Time Zone
0	☐	Aaron H			Hughes	aaron@6c…	support@…	1-408-555…	1-408-555…	1-408-555…	Technical	PT
1	☐	John Pa			Parker	john@gm…		234.634.1…		888-call-now	Technical	ET
2	☐	Tom Ta			Taylor	ttaylor@to…		503-555-1…		866-555-1…	Technical	ET
3	☐	Bob Smith	6c-007	Bob	Smith	bsmith@a…		888-call-now		703-555-1…	Technical	ET
4	☐	Maurice Carmichael	6c-008	Maurice	Carmichael	mc@mail.…		866-555-1…		888-nice-…	Abuse	GMT
5	☐	Vince Bunch	6c-009	Vince	Bunch	vbunch@…	ops@hap…	703-555-1…		234-555-6…	Sales	CT
6	☐	Mark Tompson	6c-010	Mark	Tompson	tompson…		888-nice-…		354-555-1…	Billing	PT
7	☐	Herold Waters	6c-011	Herold	Waters	hwaters@i…		234-555-6…		17 145 12…	Billing	PT
8	☐	Michael Sanders	6c-012	Michael	Sanders	pm@myb…		354-555-1…		234-234 1…	Sales	PT
9	☐	JIl Keller	6c-013	JIl	Keller	jill.keller@…		17 145 12…		44 123 55…	Technical	PT
10	☐	Sarah Campbell	6c-014	Sarah	Campbell	sa.camp…		234-234 1…		888-call-now	Technical	PT
11	☐	Amanda Kingston	6c-015	Amanda	Kingston	akingston…		44 123 55…		866-555-1…	Technical	PT

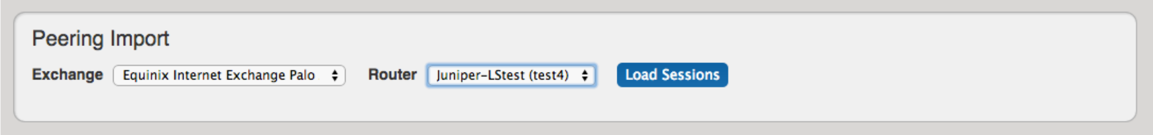


Import Sessions

Importing Sessions

Navigate to the **Peering Tab.** In the dropdown menu, select **Import.** This will take you to the Peering Import section of ProVision.

First, select the desired exchange and router. Routers with Logical Systems information will show up as the router name with the Logical System info in parenthesis (e.g. "Juniper (test)"). Then click "Load Sessions".



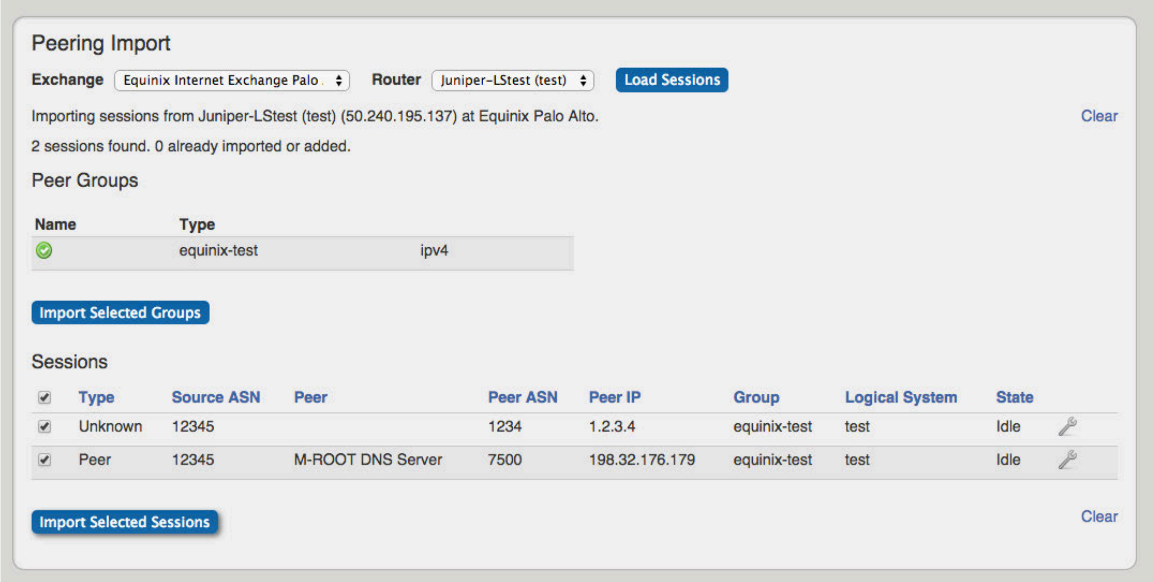
Peering Import

Exchange Equinix Internet Exchange Palo **Router** Juniper–LStest (test4)

Peer Group and Sessions will then display below your selections.

If edits need to be made to the session prior to import, simply click on the wrench icon to edit fields, then click "Done".

Lastly, select the check box next to each Session to import (or the check box at the top to select all sessions) and click "Import Selected Sessions". Successful imports will then display with a green check mark at the beginning of the row.



Peering Import

Exchange Equinix Internet Exchange Palo **Router** Juniper–LStest (test)

Importing sessions from Juniper-LStest (test) (50.240.195.137) at Equinix Palo Alto.

2 sessions found. 0 already imported or added.

Peer Groups

Name	Type	
✓	equinix-test	ipv4

Sessions

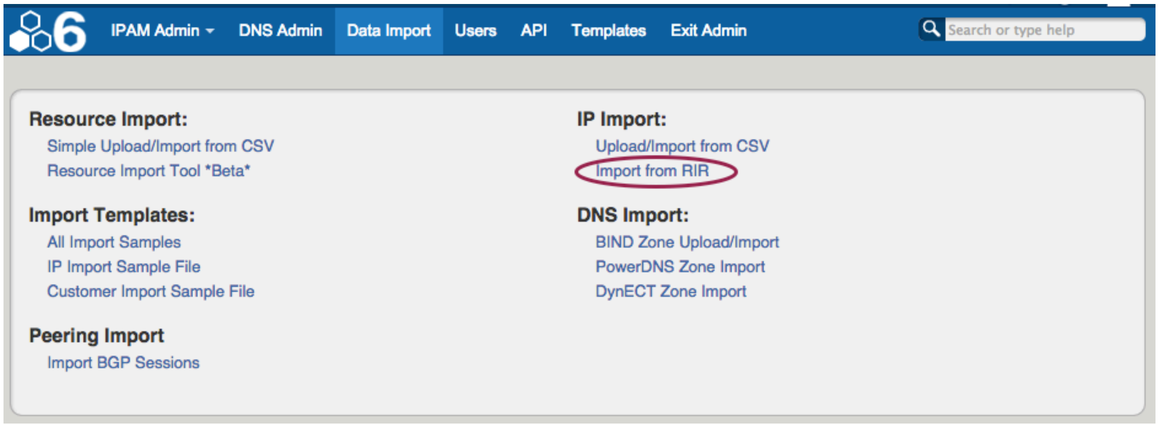
☑	Type	Source ASN	Peer	Peer ASN	Peer IP	Group	Logical System	State	
☑	Unknown	12345		1234	1.2.3.4	equinix-test	test	Idle	
☑	Peer	12345	M-ROOT DNS Server	7500	198.32.176.179	equinix-test	test	Idle	

The next step is to configure and manage your sessions.

Import Aggregate Blocks

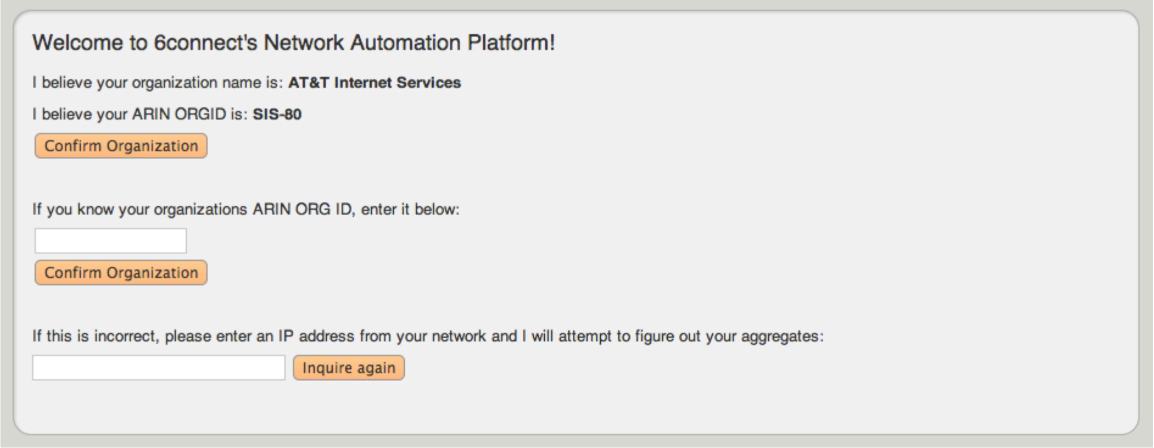
Import Aggregates

Navigate to the **Data Import Tab** from the **Admin button** to import your aggregate blocks. Select "Import from RIR" under "IP Import".



Step 1: Lookup from Source IP

We automatically lookup your ARIN or RIPE information based on the IP address you are connected to:



Welcome to 6connect's Network Automation Platform!

I believe your organization name is: **AT&T Internet Services**

I believe your ARIN ORGID is: **SIS-80**

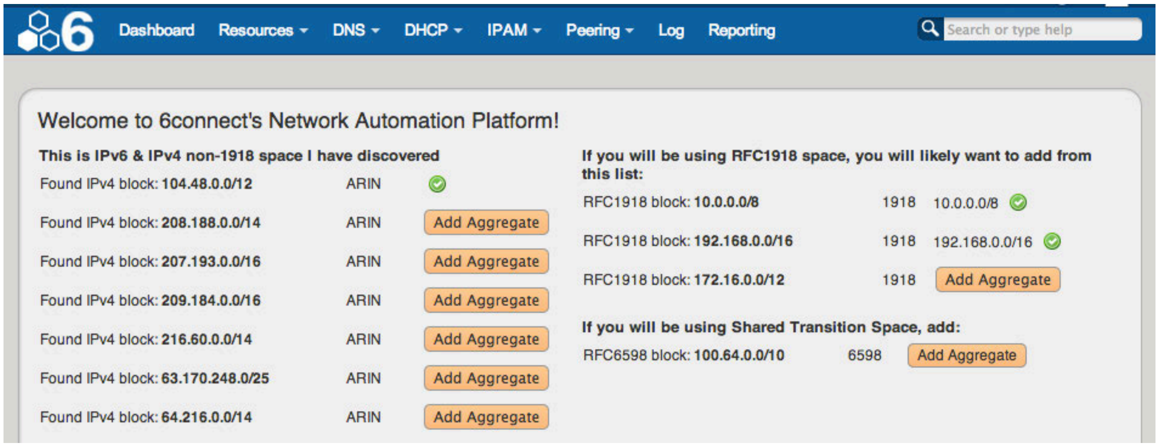
If you know your organizations ARIN ORG ID, enter it below:

If this is incorrect, please enter an IP address from your network and I will attempt to figure out your aggregates:

If you have another source IP that you would like to use for the lookup function, you can edit the IP and click on the "Inquire Again" button.
If the organization name and ORGID are correct, then click on the "Confirm" button to go to the next screen.

Step 2: Import your aggregate blocks

Once we have identified the blocks assigned to your company, you can import the aggregates by pressing the "Add Aggregate" buttons. This page allows you to add both 1918 aggregates as well as public IP space from ARIN and RIPE.



Welcome to 6connect's Network Automation Platform!

This is IPv6 & IPv4 non-1918 space I have discovered

Found IPv4 block: **104.48.0.0/12**	ARIN	✓
Found IPv4 block: **208.188.0.0/14**	ARIN	Add Aggregate
Found IPv4 block: **207.193.0.0/16**	ARIN	Add Aggregate
Found IPv4 block: **209.184.0.0/16**	ARIN	Add Aggregate
Found IPv4 block: **216.60.0.0/14**	ARIN	Add Aggregate
Found IPv4 block: **63.170.248.0/25**	ARIN	Add Aggregate
Found IPv4 block: **64.216.0.0/14**	ARIN	Add Aggregate

If you will be using RFC1918 space, you will likely want to add from this list:

RFC1918 block: **10.0.0.0/8**	1918	10.0.0.0/8 ✓
RFC1918 block: **192.168.0.0/16**	1918	192.168.0.0/16 ✓
RFC1918 block: **172.16.0.0/12**	1918	Add Aggregate

If you will be using Shared Transition Space, add:

RFC6598 block: **100.64.0.0/10**	6598	Add Aggregate

Step 3: Customizing

With your aggregates added, you are now ready to customize the tool and import additional data! From here, you can manage your aggregates under the IPAM tab, edit administration functions under **IPAM Admin**, or import resources using the Resource Import Tool.

Import DNS Zones

Importing DNS Zones

ProVision offers three DNS zone import options, available under the **Data Import** tab in the the **Admin** section:

BIND Zone Import

- Imports using the named.conf configuration file tied to the zones you are uploading, a .zip or .tar file of the zones themselves, and an optional .csv file mapping zones to customers and DNS Servers.

DynECT Zone Import

- Imports and syncs ALL zones on the system with those in your DnyECT instance. This means any zones in ProVision not present in your DynECT instance will be removed and any changes lost.

PowerDNS Zone Import

- Option is available after configuring a PowerDNS server with a MySQL backend. Connects to the selected server and imports all zones.

When it comes to importing your DNS zones, the simplest way is using the BIND zone import function built into ProVision. Below, you can also download "sample" files if you wish for examples.

- Importing DNS Zones
    - Preparing your DNS Zones for Import
    - Importing your DNS Zones (BIND)
        - Step 1: Create a new DNS Import Job
        - Step 2: Map Data Columns (Optional)
        - Step 3: Reviewing Data
    - Importing your DNS Zones (PowerDNS)

Preparing your DNS Zones for Import

If your zone data is currently in BIND format - this is very straightforward.

There are three components to the upload process:

1) The named.conf configuration file tied to the zones you are uploading (required)

This tells the importer the Zone Name and where the zone file is written. It could be as simple as a multi-line file:

Simple DNS Config File

```
zone "my-zone.com" { type master; file "my-zone.com.zone"; };
zone "my-other-zone.com" { type master; file "my-other-zone.com.zone"; };
zone "my-third-zone.com" { type master; file "my-third-zone.com.zone"; };
```

or could be more complex like this file structure directory:

Complex DNS Config File

```
zone "my-zone.com" { type master; file "/usr/local/zones/my-zone.com.zone"; };
zone "my-other-zone.com" { type master; file
"/usr/local/zones/more/my-other-zone.com.zone"; };
zone "my-third-zone.com" { type master; file "/usr/local/zones/more/even
more/my-third-zone.com.zone"; };
```

This configuration file can be taken directly from the DNS server, and can be in either ISC BIND or NSD format. The system auto-detects which one is being supplied.

For a sample Simple Config: conf.conf

2) A ZIP or TAR file of the DNS zones themselves (required)

This is as it sounds - a file archive where we can find the zones and it should match the configuration file uploaded in Step 1.

> ⚠ **Zone Order**
> These zone files can be in any order, or in sub-directories, so long as the configuration file (Step 1) correctly points to them

For a sample simple ZIP: zones.zip

3) Match CSV for assigning DNS Zones to Resources (optional)

This file allows the administrator to "assign" zone files to a given Resource. If you have Imported a group of Resources, they have Resource IDs associated with them. You can then import DNS zones and assign them to those Resource IDs. When complete, you will be able to pull up the Resource Record and see the DNS Zones associated to that Resource ID.

Sample CSV File

```
my-zone.com,test-01,fun stuff, 174.23.14.4, 174.23.14.9
my-otherzone.com,test-02,great stuff, dns1.dns.net, dns2.dns.net
even-reverse-zones.arpa,test-03,amazing stuff
```

Note the columns are the "Zone Name", the "Resource ID", "Notes", "Master Server", "Slave Server"

> ⓘ **Importing DNS Server Linkages**
> When importing zones, you can use the "Master Server" and "Slave Server" columns to assign zones to specified DNS Servers. Please note that the IP address or FQDN of the DNS Server is supported in this field.

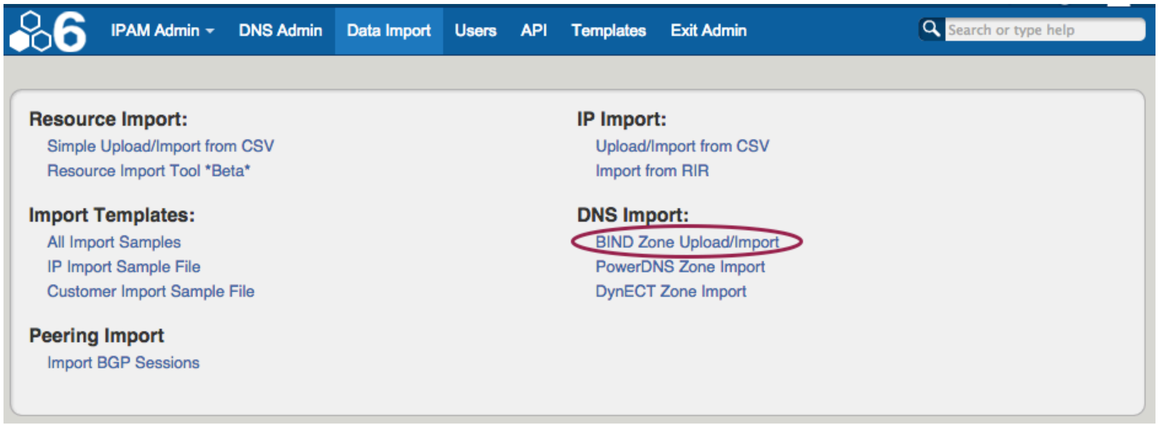
> ⚠ To successfully map to a DNS server, that server must already exist within Provision.

For a sample CSV: config.csv

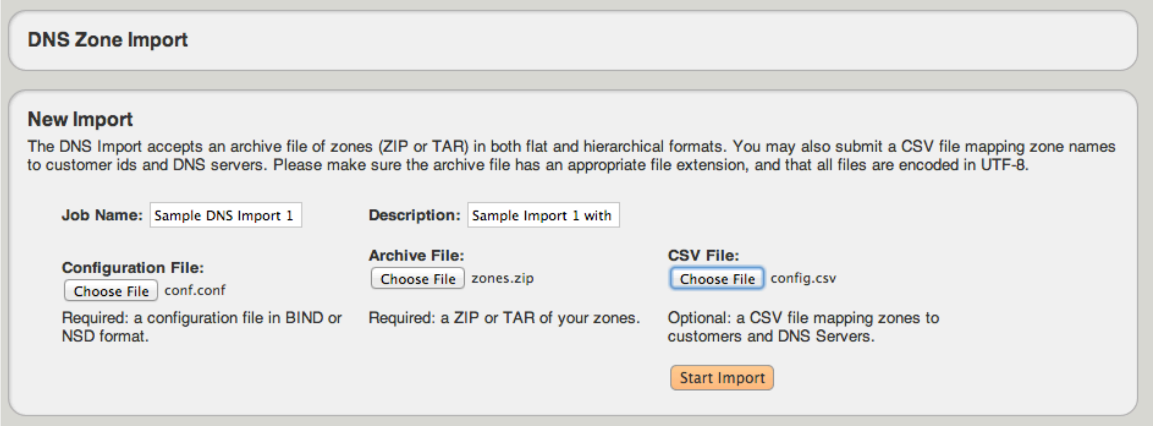
Importing your DNS Zones (BIND)

Step 1: Create a new DNS Import Job

Navigate to the **Data Import** Tab from the **Admin** button to import your data. Select "BIND Zone Upload/Import" under "DNS Import".



Create a Job Name and Description for the import. This is especially useful to keep track of progress in cases the data arrives from multiple sources, or will require multiple stages of manual review. Select the appropriate Configuration File (required), Archive File (required), and CSV File (optional) that you prepared above by selecting the "Choose File" button(s) under each section, and browsing to the correct file location. Then hit "Start Import".



DNS Zone Import

New Import

The DNS Import accepts an archive file of zones (ZIP or TAR) in both flat and hierarchical formats. You may also submit a CSV file mapping zone names to customer ids and DNS servers. Please make sure the archive file has an appropriate file extension, and that all files are encoded in UTF-8.

Job Name: Sample DNS Import 1

Description: Sample Import 1 with

Configuration File: conf.conf

Required: a configuration file in BIND or NSD format.

Archive File: zones.zip

Required: a ZIP or TAR of your zones.

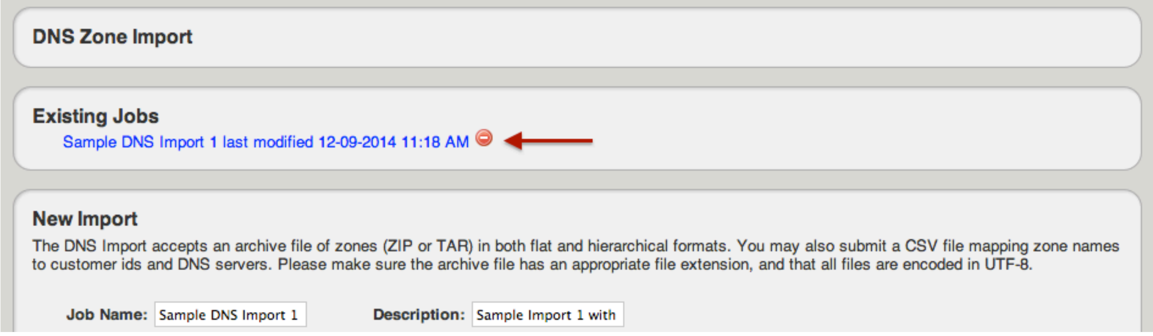
CSV File: config.csv

Optional: a CSV file mapping zones to customers and DNS Servers.

Working with Large or Multiple Data Sets
Although you cannot add new files to an existing job, for jobs with multiple sources for data (which may have different formatting), you can simply create separate jobs and descriptions for each source - no need to manually combine the data into one file before importing. The Import tool's mapping and editing functions will allow for the data to be reconciled in ProVision.

For large data sets where multiple stages of manual review might be needed, you can create a new job using the same set of data files in order to work in parallel on a different portion of the data.

After importing, the new job will appear under the "Existing Jobs" section. To continue working with this job, select it from the list and the next step will appear on the page.



DNS Zone Import

Existing Jobs

Sample DNS Import 1 last modified 12-09-2014 11:18 AM

New Import

The DNS Import accepts an archive file of zones (ZIP or TAR) in both flat and hierarchical formats. You may also submit a CSV file mapping zone names to customer ids and DNS servers. Please make sure the archive file has an appropriate file extension, and that all files are encoded in UTF-8.

Job Name: Sample DNS Import 1

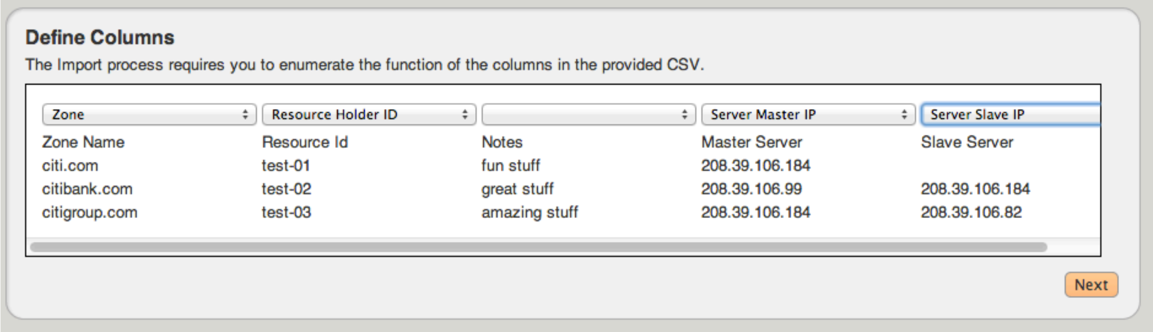
Description: Sample Import 1 with

Step 2: Map Data Columns (Optional)

If you chose to load an optional match CSV file to assign DNS Zones to Resource, a mapping step will be available. Otherwise, proceed to Step 3: Reviewing Data.

For DNS imports, four column definitions are available: **Zone**, **Resource ID**, **Server Master IP**, and **Server Slave IP**. Using the dropdown menu, select the appropriate definition for each of the imported columns. **Zone** and **Resource Holder ID** should each only have a single column selected, however, any number of columns may be defined as **Server Master IP** or **Server Slave IP**. Other columns which do not apply under the available definitions should be left as blank, and will be skipped during the upload process.

When completed, hit "Next".



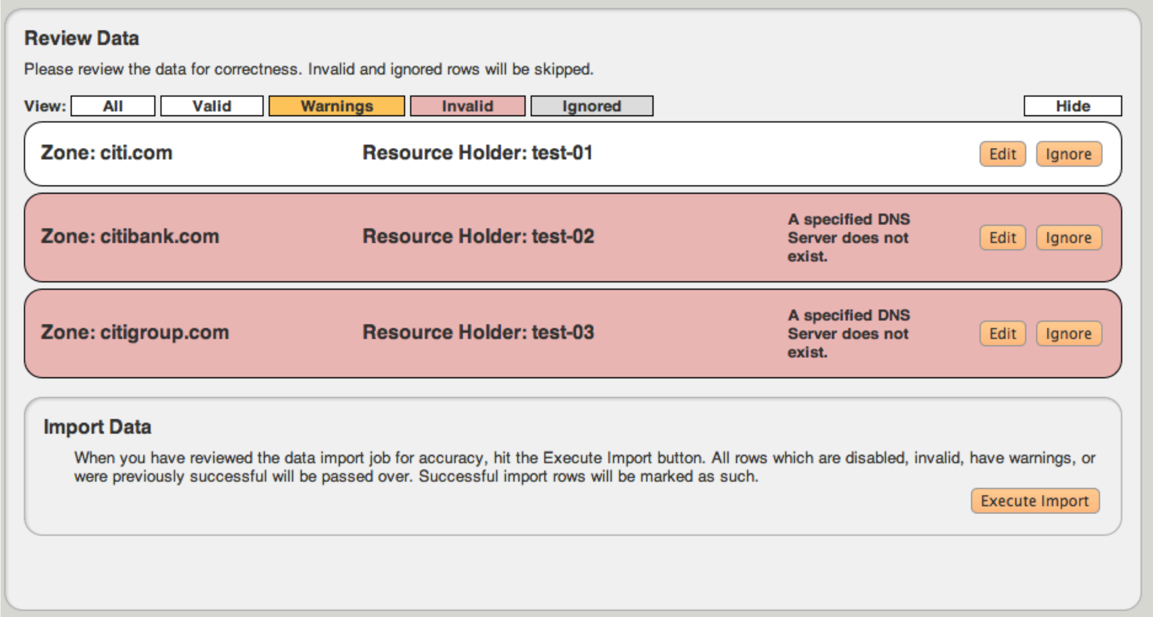
Define Columns

The Import process requires you to enumerate the function of the columns in the provided CSV.

Zone	Resource Holder ID		Server Master IP	Server Slave IP
Zone Name	Resource Id	Notes	Master Server	Slave Server
citi.com	test-01	fun stuff	208.39.106.184	
citibank.com	test-02	great stuff	208.39.106.99	208.39.106.184
citigroup.com	test-03	amazing stuff	208.39.106.184	208.39.106.82

Step 3: Reviewing Data

After supplying the file set and defining columns (if applicable), a review step is provided. The configuration file is broken into individual jobs, scanned for errors, and shown by row (in batches of 100) to be reviewed. Zones with errors will show as color coded. and can be filtered to be viewed by All, Valid, Warnings, Invalid, or Ignored. From here, the zone can be edited or ignored.



Review Data

Please review the data for correctness. Invalid and ignored rows will be skipped.

Zone: citi.com **Resource Holder: test-01**

Zone: citibank.com **Resource Holder: test-02** **A specified DNS Server does not exist.**

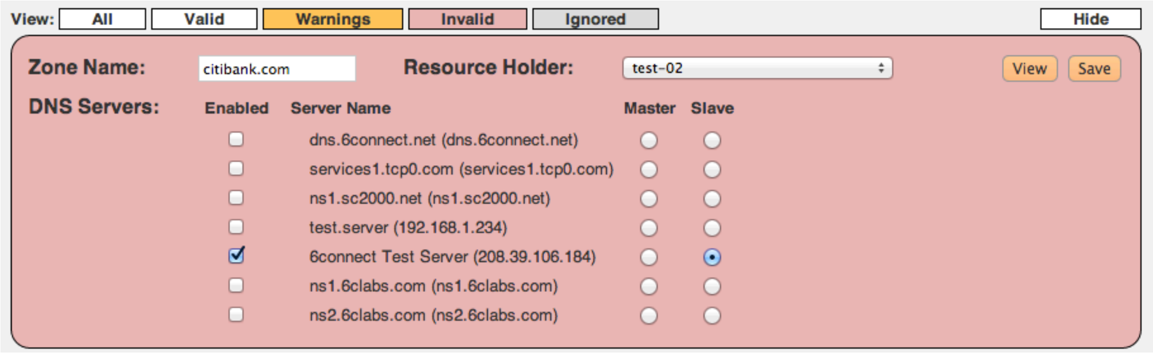
Zone: citigroup.com **Resource Holder: test-03** **A specified DNS Server does not exist.**

Import Data

When you have reviewed the data import job for accuracy, hit the Execute Import button. All rows which are disabled, invalid, have warnings, or were previously successful will be passed over. Successful import rows will be marked as such.

Editing the zone provides options to alter the Resource Holder, enable DNS servers, and redefine Master and Slaves.

After editing, hit "Save", and continue reviewing / editing data as desired.



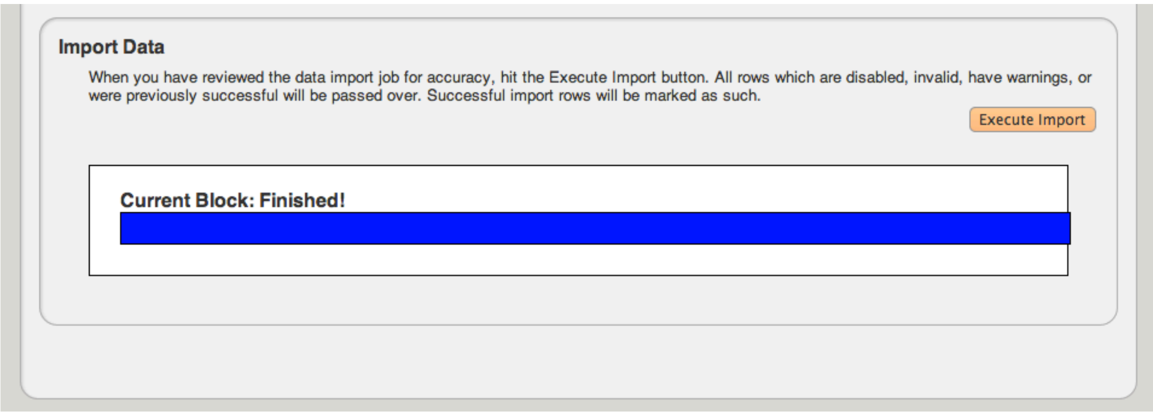
Zone Name: citibank.com **Resource Holder:** test-02

DNS Servers:

Enabled	Server Name	Master	Slave
☐	dns.6connect.net (dns.6connect.net)	○	○
☐	services1.tcp0.com (services1.tcp0.com)	○	○
☐	ns1.sc2000.net (ns1.sc2000.net)	○	○
☐	test.server (192.168.1.234)	○	○
☑	6connect Test Server (208.39.106.184)	○	●
☐	ns1.6clabs.com (ns1.6clabs.com)	○	○
☐	ns2.6clabs.com (ns2.6clabs.com)	○	○

When the review step is completed, hit the "Execute Import" button. A progress bar will appear to show progress and note errors if they occur.

When the bar reaches 100%, the import is complete.


Import Data

When you have reviewed the data import job for accuracy, hit the Execute Import button. All rows which are disabled, invalid, have warnings, or were previously successful will be passed over. Successful import rows will be marked as such.

Current Block: Finished!

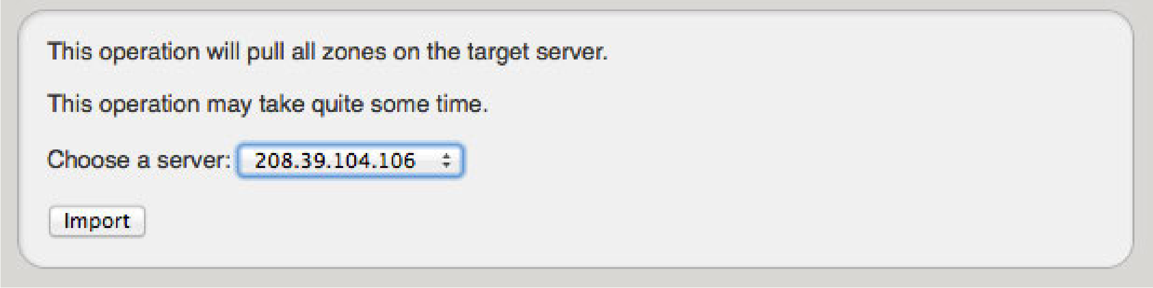
Importing your DNS Zones (PowerDNS)

Step 2: Import your PowerDNS zones

To import PowerDNS zones, first ensure the PowerDNS server has been set up under DNS Admin - Manage DNS Servers.

Once server setup has been verified, navigate to the **Data Import** Tab in the **Admin** section. Select the "Power DNS Zone Import" link.

To import your data, simply choose your PowerDNS server and click "Import".


This operation will pull all zones on the target server.

This operation may take quite some time.

Choose a server: 208.39.104.106

Users & Permissions

Overview

Users & Permissions is accessed from the Admin screen under the **Users** tab. Here, you will find tools for adding and managing permissions groups, users, and running queries for verifying a user's specific permissions.

The Permissions structure in ProVision is designed to give you as much flexibility as you need to accommodate most use cases. When mapping out the permissions structure for your organization, keep in mind who you want to access to application:

- Internal Users and Roles (Admins, Read Only, etc.)
- Partners related to multiple specific Resources/Accounts
- Customers/Departments with limited view to only their respective Resources/Accounts

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Permission Levels

Global Permissions

When you see a reference to a "TLR" - that is a "Top Level Resource". This Is the primary Resource under which all other resources fall under. ProVision currently only allows a single level of administrator permissions: Global Administrator.

Users with "Admin" access can assign/modify permissions for other users.

See Global Permissions for more details on configuring these elements.

Resource Permissions

An administrator can also set respective permissions for a given Resource (single or multiple). These permissions fall under Groups. So a Group is configured for the given group of Resource permissions, and then the User account is added.

See Users and Groups to learn how Resource Permissions are assigned.

See Resource Permissions for more details on configuring these elements.

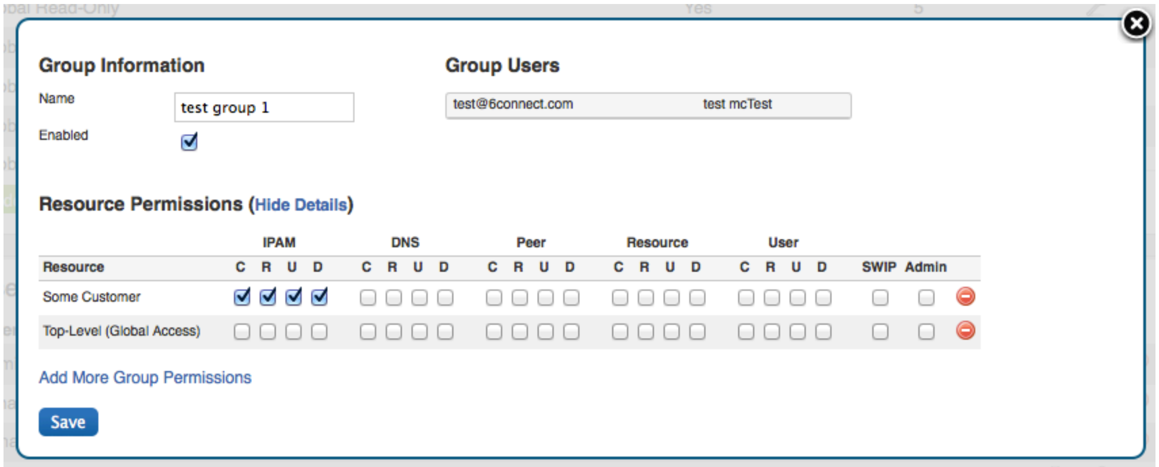
Table of contents

Global Permissions

Global Permissions apply to the "TLR" or "Top Level Resource" within ProVision.

Administration of these permissions require Administrative privileges. As an Admin, the user can then assign global permissions to groups and users. Depending on the requirement, the user can also have Resource specific permissions depending on how their group is configured.

Global Permission Details



Group Information

Name: test group 1

Enabled: ☑

Group Users

test@6connect.com test mcTest

Resource Permissions (Hide Details)

	IPAM				DNS				Peer				Resource				User						
Resource	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	SWIP	Admin	
Some Customer	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	⊖
Top-Level (Global Access)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	⊖

Add More Group Permissions

Global Permission	Description
Create	Ability to create records of a certain type
Read	Ability to read records of a certain type
Update	Ability to update existing records of a certain type
Delete	Ability to delete records of a certain type

Functional Area	Description
IPAM	IP Address Management functionality - this covers the IPAM Tab in addition to the IPAM "Gadget" that can be present in Resources.
DNS	DNS Zone/Zone Record Management functionality - this covers the DNS Tab in addition to the DNS "Gadget" that can be present in Resources.
Peering	Peering functionality - covers the Peering Tab, both the Communication Manager and the Session Manager.
Resources	Resource functionality - this controls access for Resources depending on either the TLR or the individual Resource.
User	User/Group management - this controls access for User and Group functions within the administrative area for ProVision.
SWIP*	This affects the SWIP/RPSL integration for ARIN/RIPE. This way a user can either be enabled to have this capability or not.
Admin*	This controls whether a user is a administrator for the global ProVision application.

ⓘ *

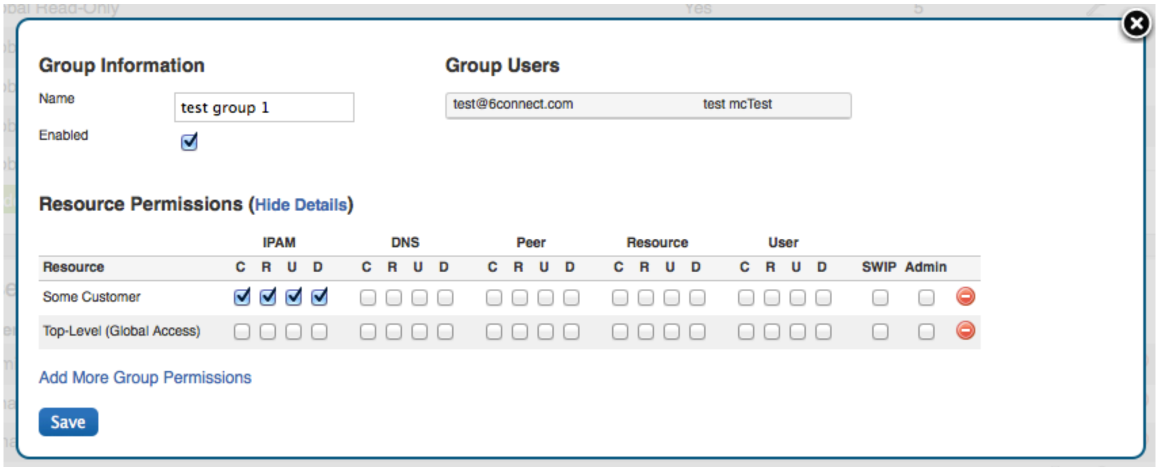
SWIP and Admin functions are only visible when Show Details is selected

Resource Permissions

Resource Permissions apply to designated Resources within ProVision.

Administration of these permissions require Administrative privileges. As an Admin, the user can then assign resource permissions to groups and users.

Resource Permission Details



Group Information

Name: test group 1

Enabled: ☑

Group Users

test@6connect.com test mcTest

Resource Permissions (Hide Details)

	IPAM				DNS				Peer				Resource				User						
Resource	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	SWIP	Admin	
Some Customer	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	⊖
Top-Level (Global Access)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	⊖

Resource Permission	Description
Create	Ability to create records of a certain type
Read	Ability to read records of a certain type
Update	Ability to update existing records of a certain type
Delete	Ability to delete records of a certain type

Functional Area	Description
IPAM	IP Address Management functionality - this covers the IPAM Tab in addition to the IPAM "Gadget" that can be present in Resources.
DNS	DNS Zone/Zone Record Management functionality - this covers the DNS Tab in addition to the DNS "Gadget" that can be present in Resources.
Peering	Peering functionality - covers the Peering Tab, both the Communication Manager and the Session Manager.
Resources	Resource functionality - this controls access for Resources depending on either the TLR or the individual Resource.
User	User/Group management - this controls access for User and Group functions within the administrative area for ProVision.
SWIP*	This affects the SWIP/RPSL integration for ARIN/RIPE. This way a user can either be enabled to have this capability or not.
Admin*	This controls whether a user is a administrator for the global ProVision application.

*

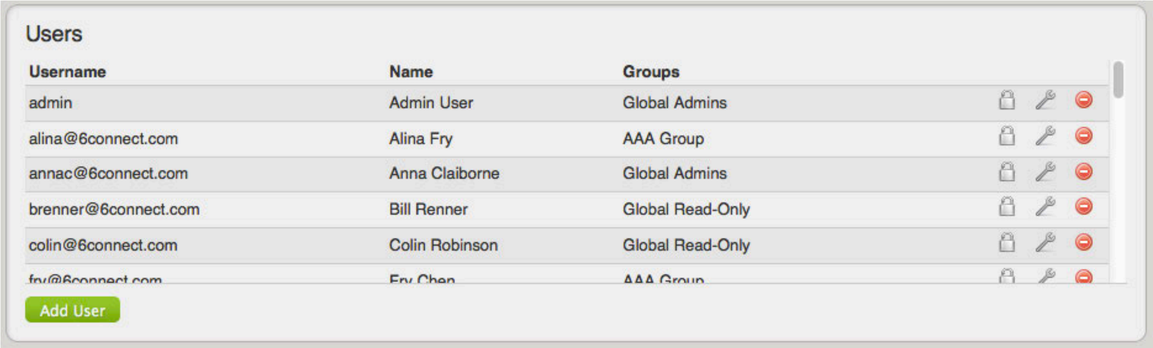
SWIP and Admin functions are only visible when Show Details is selected

Users and Groups

User Accounts

A User is defined as a single login account that accesses ProVision.

New Users can be created from the "Manage Users" Tab under the Admin area by clicking the green "Add User" button.

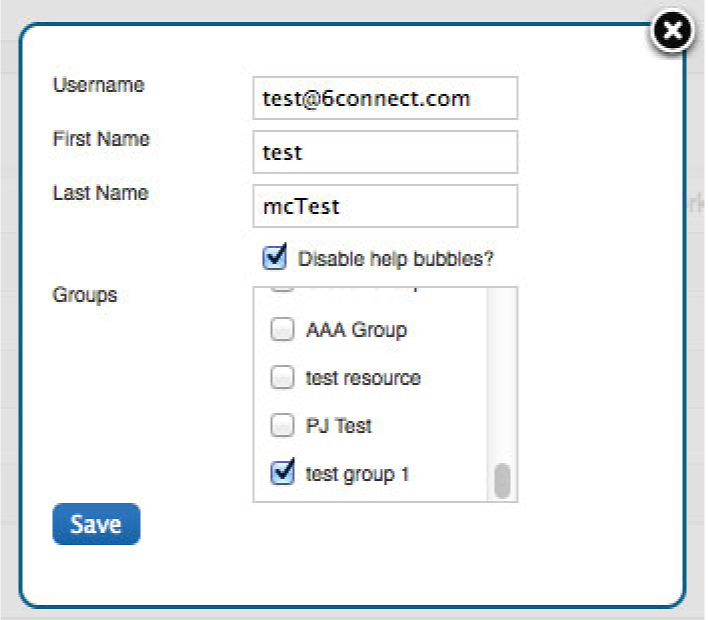


Users

Username	Name	Groups
admin	Admin User	Global Admins
alina@6connect.com	Alina Fry	AAA Group
annac@6connect.com	Anna Claiborne	Global Admins
brenner@6connect.com	Bill Renner	Global Read-Only
colin@6connect.com	Colin Robinson	Global Read-Only
fry@6connect.com	Fry Chen	AAA Group

Creating/Editing Accounts

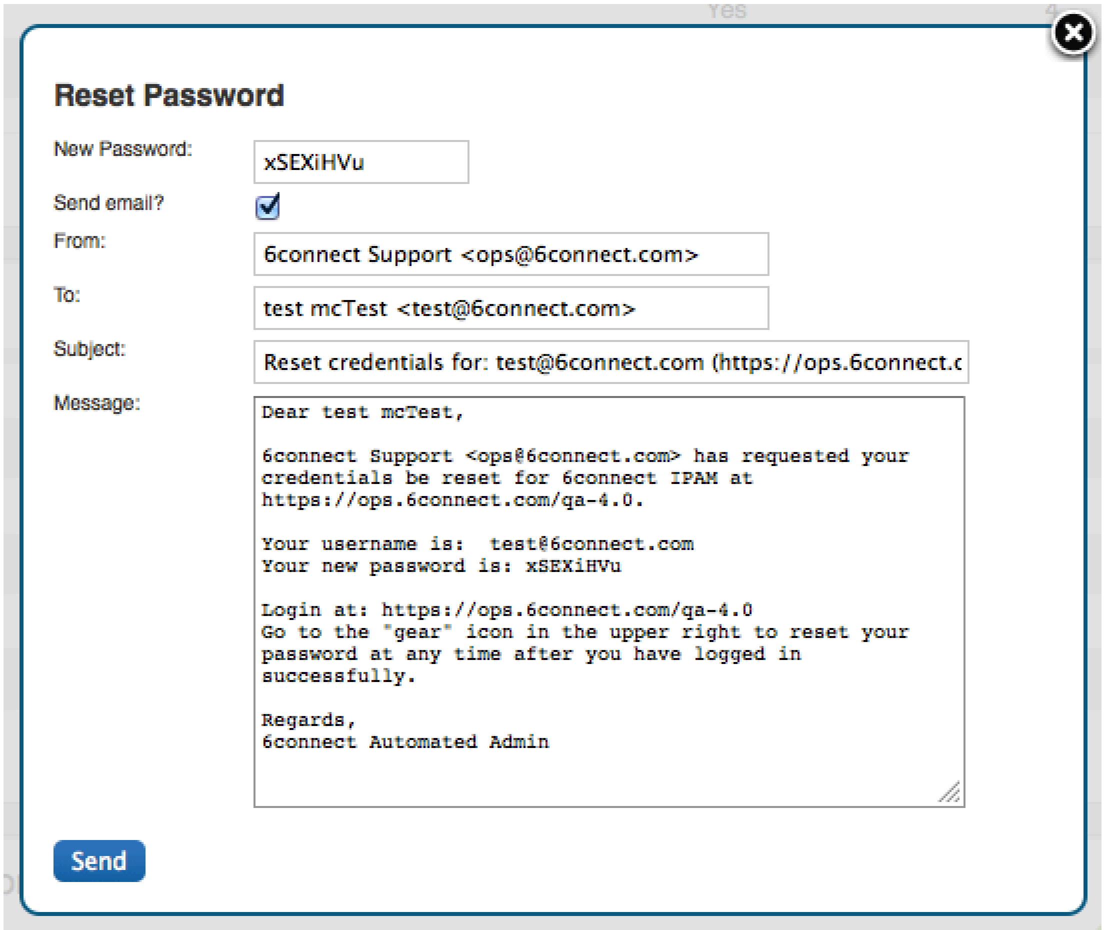
When creating or editing User accounts, you will be presented with the following options. Note that membership in multiple permission groups is allowed.



Username	test@6connect.com
First Name	test
Last Name	mcTest
	☑ Disable help bubbles?
Groups	☐ AAA Group ☐ test resource ☐ PJ Test ☑ test group 1

Setting/Resetting User Passwords

When you click on the padlock icon, you will be presented with options to set a new password and/or send a password reset email to the intended user account.



Reset Password

New Password: xSEXiHVu

Send email? ☑

From: 6connect Support <ops@6connect.com>

To: test mcTest <test@6connect.com>

Subject: Reset credentials for: test@6connect.com (https://ops.6connect.c

Message:

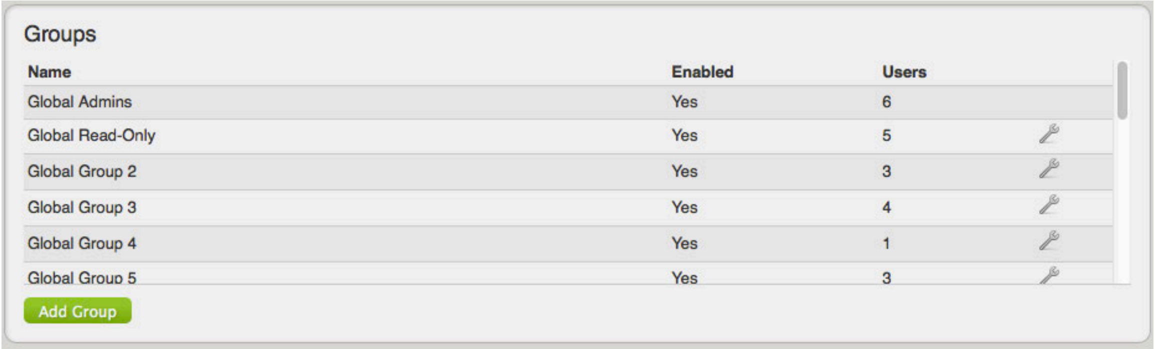
```
Dear test mcTest,

6connect Support <ops@6connect.com> has requested your
credentials be reset for 6connect IPAM at
https://ops.6connect.com/qa-4.0.

Your username is:  test@6connect.com
Your new password is: xSEXiHVu

Login at: https://ops.6connect.com/qa-4.0
Go to the "gear" icon in the upper right to reset your
password at any time after you have logged in
successfully.

Regards,
6connect Automated Admin
```

User Groups

ProVision administrators can also create permission groups to assign users to. This allows more control over user roles. The two default groups are:

- Global Admin
- Global Read-Only

New Groups can be created by ProVision administrators by pressing the green "Add Group" button.



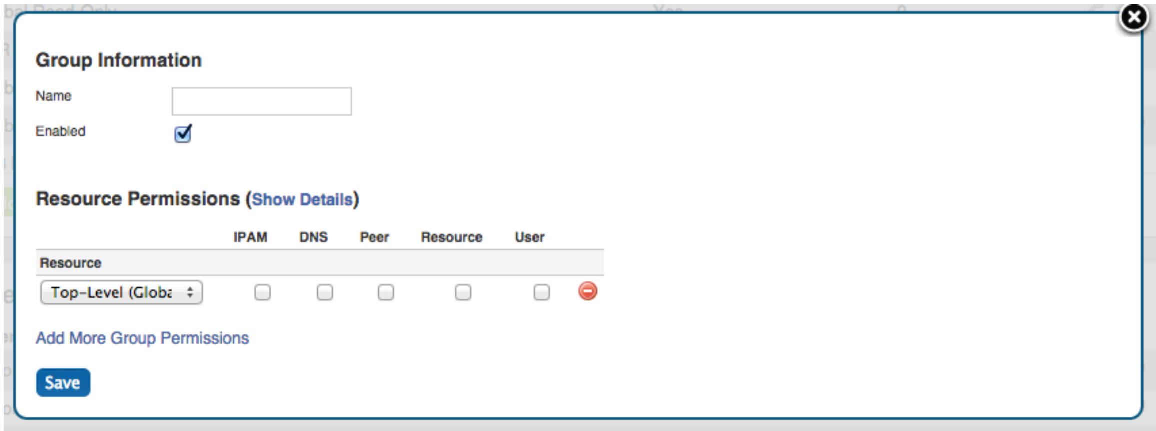
Groups

Name	Enabled	Users
Global Admins	Yes	6
Global Read-Only	Yes	5
Global Group 2	Yes	3
Global Group 3	Yes	4
Global Group 4	Yes	1
Global Group 5	Yes	3

Overlapping group and user permissions
Permissions are inherited based on the hierarchy of the objects, unless you specify a different permission!

Add a Group

After hitting the "Add Group" button, the Group Information screen will pop up.



Group Information

Name

Enabled ☑

Resource Permissions (Show Details)

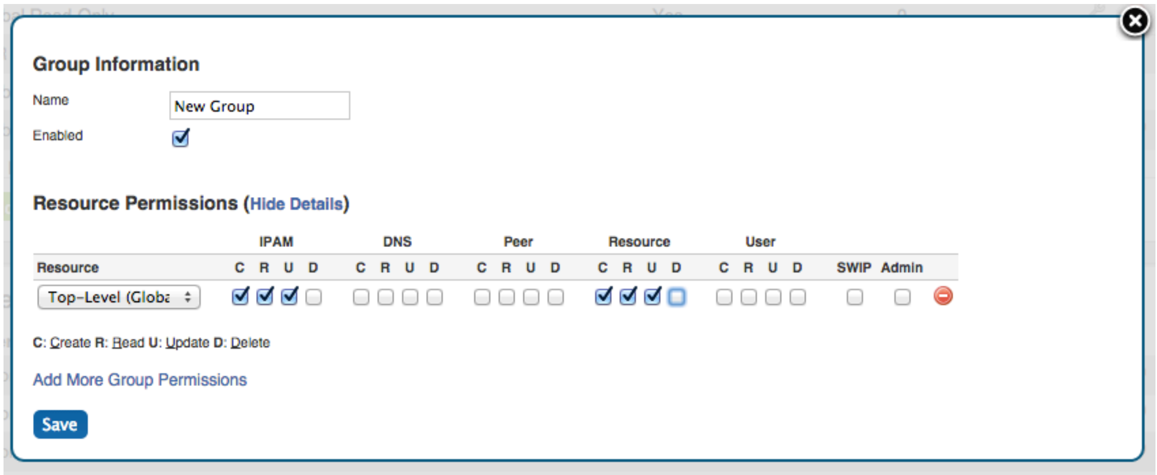
Resource	IPAM	DNS	Peer	Resource	User
Top-Level (Globa	☐	☐	☐	☐	☐

Add More Group Permissions

Save

Add in the name of the new group, and set the permissions for that group by defining the resource(s) in the dropdown menu, checking the functional areas that you want accessible. Click "Show Details" to fine tune the functional areas into Create/Read/Update/Delete level permissions. To add permissions for additional Resources, click "Add More Group Permissions", select the Resource, and check the desired permissions. To delete a Resource from the permissions list, simply click the red icon.

In the example below, New Group has top-level (Global) permissions to Create, Read, and Update IPAM and Resource functions, but not to delete or access other areas. For more detail on top-level and resource permissions, see Global Permissions and Resource Permissions.



Group Information

Name New Group

Enabled ☑

Resource Permissions (Hide Details)

	IPAM				DNS				Peer				Resource				User					
Resource	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	SWIP	Admin
Top-Level (Globa	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐

C: Create R: Read U: Update D: Delete

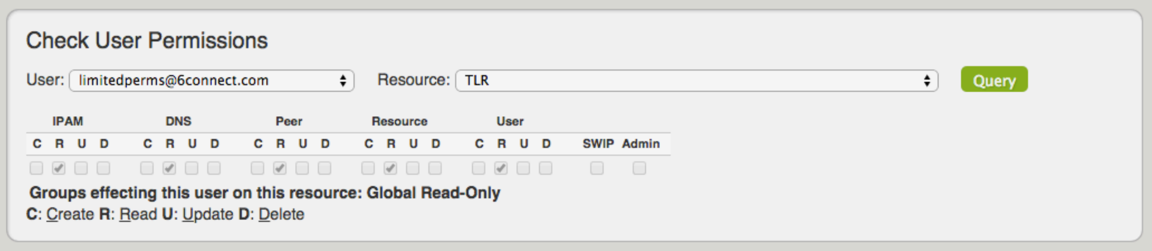
Add More Group Permissions

Save

Click "Save" when complete. After adding the group, you can add users to the group by selecting it when editing a user account.

Verifying Permissions

To verify the permissions of a certain user who is a member of a group, simply select their user account from the dropdown menu and click on the green "Query" button. The resulting output will display the Resources the user has access to along with the specific permissions for each one.



User: limitedperms@6connect.com

Resource: TLR

IPAM				DNS				Peer				Resource				User					
C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	SWIP	Admin
☐	☑	☐	☐	☐	☑	☐	☐	☐	☑	☐	☐	☐	☑	☐	☐	☐	☑	☐	☐	☐	☐

Groups effecting this user on this resource: Global Read-Only

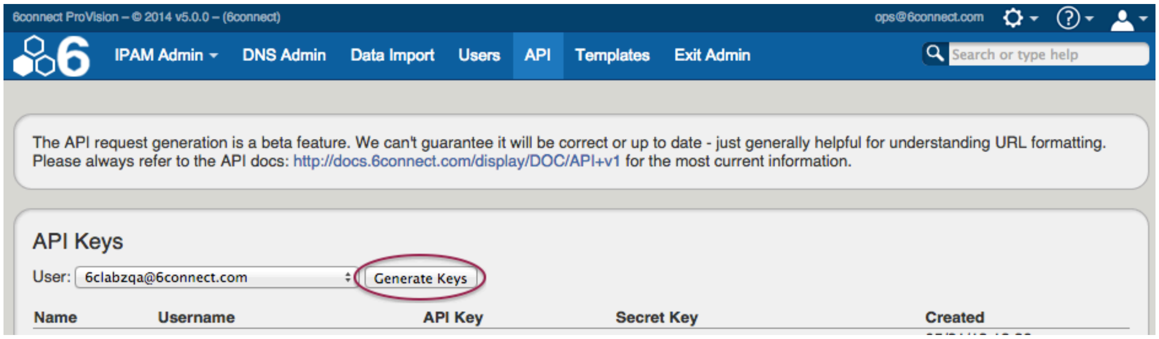
C: Create **R**: Read **U**: Update **D**: Delete

API Tab

API Tab

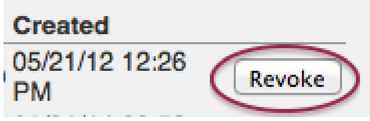
The **API** tab allows you to create and manager API keys for users.

To create a key, simply select the user, and click on "Generate Keys". The Name, Username, API Key, Secret Key, and Created date information will be added to the list below.



The API request generation is a beta feature. We can't guarantee it will be correct or up to date - just generally helpful for understanding URL formatting. Please always refer to the API docs: http://docs.6connect.com/display/DOC/API+v1 for the most current information.

To revoke a user's key, click "Revoke" at the end of their entry.



For detailed information on working with API features, please refer to ProVision Developer Tools and API v1.

ProVision Developer Tools

Developer Tools

6connect ProVision can integrate with your existing tools and workflow through use of the API and CLI. The 6connect API allows you to access the data and functions of the 6connect web tools to run advanced commands in ProVision, and supports a wide variety of update and deletion conditions not available in the UI.

To use the API, you will need a basic understanding of object oriented programming in PHP and the right tools installed on your system.

Table of contents

API v1

1 - Overview

6connect API - Overview

The 6Connect API is a RESTful API to access your data in the 6Connect tools. ReST relies on stateless, client-server communication, and is usually always implemented using the HTTP protocol (the 6Connect API uses HTTPS). It is a simple and lightweight alternative to Web Services and can implemented in nearly any language. The 6Connect API operates similarly to other popular ReST APIs you may have worked with, such as Facebook or Twitter. You simply create an HTTP GET or POST request according to our standard, send it to the server, and receive data back.

To learn more about request formatting, making requests, and the tools available, visit Making API Requests.
You can also get the PHP SDK for PHP libraries and sample code.

Here are some important details about our ReST implementation:

- The API only comes with the full 6Connect IPAM product. If you would like to upgrade to the full version, contact sales@6Connect.com.
- All transactions are over HTTPS (SSL - port 443) only. Any transaction not using SSL will be rejected, and you will have potentially exposed sensitive data.
- All API results are formatted in JSON. XML support is coming soon.
- All requests are either HTTP GET or POST requests. We suggest using POST if the length of data in the request is over 8KB.
- You can use any language you would like to query the API. We currently have an SDK for PHP. Looking at the sample code would probably help you implement it in any language though.

2 - Making API Requests

6connect API - Making API Requests

API requests can be generated within the web UI by the API Request Generator, or generated programatically in any language.

An API request looks like this:
https://cloud.6connect.com/ex/api/v1/api.php?target=ipam&action=get&type=IP&mask=24

An API response is a JSON-encoded text string, and looks like this:

```
{"success":1, "message":"1 blocks found",
"data":[{"id":"7539","oct1":"1","oct2":"2","oct3":"3","oct4":"0","mask":"24","child1":null
"is_aggregate":"1","custid":"holding","last_updated_time":"2012-03-20
09:49:00","description":null,"parent":null,"rir":"ARIN","notes":"2012-03-20
09:49:00","generic_code":null,"region":null,"vlan":null,"arin_net_id":null,"arin_cust_id":
00:00:00","assigned_time":"2012-03-20 09:45:12"}]}
```

Instructions on decoding this return data can be found in the API endpoint documentation pages.

Using API Keys:
When using the API without pre-established authentication to ProVision, you must include both your API Key and a specially-prepared query hash parameter, like so:

> https://cloud.6connect.com/ex/api/v1/api.php?target=ipam&action=get&type=IP&mask=24&apiKey=116-MX15LUYY78ZZTW5&hash=8jxj4IApYmgb5IZ

API Keys can be generated from your ProVision instance by navigating to the Admin panel by using the gear icon in the upper right hand corner, then navigating to the API tab. The API tab will present the API authentication information in the following format:

> API Key: 38-TMHQV8CV2XZYC2ZS
>
> Secret Key: 6e04e5822ce90feaa8947ded46c46878

The secret key serves as an API password and is used in the creation of the API Authentication hash. The formula for creating a API query hash from an API query and a Secret Key is the following:

> Hash = Base64Encode(Sha256HMACHash (QueryString, SecretKey))

In PHP, this would be performed with the following line of code:

> $hash = *base64_encode(hash_hmac('sha256', $_SERVER['QUERY_STRING'], $secretKey, TRUE));*

⚠ **Because the hash function is computed based on the query string, you must calculate a unique hash for every API request!**

ⓘ **Example**

Lets say you wanted to create a hash for the following API request:

> https://cloud.6connect.com/6c_375/api/v1/api.php?target=ipam&action=get&type=IP&mask=24

And that your API Key and Secret Key are as follows:

> API Key: 32-5DAYTJQY2TZHOFOB
>
> Secret Key: 48b278ec873bda4738923dbc467f8669

The first step is to append your API Key to the URL. The API Key indicates which user is executing the API query.

> https://cloud.6connect.com/6c_375/api/v1/api.php?target=ipam&action=get&type=IP&mask=24&apiKey=32-5DAYTJQY2TZHOFOB

The first step is to isolate the Query String from the request URL. The Query String is everything which follows the question mark. So,

Query String: target=ipam&action=get&type=IP&mask=24&apiKey=32-5DAYTJQY2TZHOFOB

The next step is to calculate the SHA256 hash of this string with your Secret Key. In PHP, this would be:

$sha256 = hash_hmac('sha256', "target=ipam&action=get&type=IP&mask=24&apiKey=32-5DAYTJQY2TZHOFOB", "48b278ec873bda4738923dbc467f8669", TRUE);

As this value has been 256-bit hashed, it will contain many unprintable characters. The solution to this is to encode it in base 64 for transport. Again, in PHP:

$hash = *base64_encode($sha256);*

Calculating it out yields the completed hash:

$hash = yneSFMyxPPe+3W4IOkVp50K3VStatBcRRak+2ygDUWQ=

The calculated hash can then be appended to the full API Query URL to form a completed request:

https://cloud.6connect.com/6c_375/api/v1/api.php?target=ipam&action=get&type=IP&mask=24&apiKey=32-5DAYTJQY2TZHOFOB

A Note on False Positives

ProVision utilizes several possible authentication schemes of which key-based API authentication is only one. Session-based, username/password authentication is used for the majority of user interaction with the ProVision front end. Because session information is stored in browsers cookies, a browser can be authenticated to execute API commands as long as the session is active.

Unfortunately, this can lead to confusion when using a machine-based API as the user might use an authenticated browser session to test API-Key based API queries. These queries will always succeed regardless of whether the API Query Hash was calculated correctly as the system defaults to Session-based authentication when it is available.

To ensure that session-based authentication is not polluting your API-Key based testing, always use a separate browser which is not logged in to your ProVision instance to test API queries.

Other Languages

The 6Connect API can be used in just about any scripting or programming language. We have a PHP SDK that provides example code, and several useful functions for interacting with the API. Even if you don't want to use PHP, the samples will help you create code in other languages.

3 - SDK - PHP

6connect API - Getting Started with the SDK for PHP

The 6connect API allows you to access to data and functions of the 6connect web tools. The SDK for PHP will help you get this setup quickly by outlining the requirements, prerequisites and provide sample code.

Prerequisites

The API only comes with a licensed 6connect ProVision application. If you would like access to a ProVision license please contact sales@6connect.com.

Create Your API Credentials

To use the 6connect SDK for PHP, you will need a 6connect API Key and Secret Key.

To create your API Key and Secret Key:

- Log into your 6connect instance (hosted or local)
- Click on the Admin icon, and go into the Administration section.
- Click on the "API" tab.
- Select the user from the drop down you want to enable API access for, and click "Generate Keys".
- The API Key and the Secret Key will now appear directly below that.

*Note that generating a new API will automatically revoke an older API Key.

> ⓘ 6connect recommends that each user accessing the API have their own API key configured. However, you can alternatively setup API users by functionality or roles. While the platform is flexible, you should follow your organizations security policies.

Important!

> ⚠ Your Secret Key is a secret! Only you and 6connect should ever know this information. It is important to keep it confidential to protect the privacy of your data. Store it securely and never share this key with other users or place it on other systems. Never include the secret key in requests to 6connect, support requests to 6connect, and never e-mail it to anyone. Do not share it outside your organization. No one who legitimately represents 6connect will ever ask you for your Secret Key.

Requirements

Aside from following the prerequisites, you will need a basic understanding of object oriented programming in PHP and the right tools installed on your system to use the API.

Minimum Requirements

- PHP 5.5 or newer.
- PHP JSON and PCRE extensions (XML will be coming soon).
- Curl PHP extension compiled with OpenSSL libraries. Click here for more information on curl.

If you aren't sure what is running on your system, you can create a php page on your system and call phpinfo() and view this page in a browser, or run php -i on the command line.

Install the SDK

Download the file 6connect-PHP-SDKv2.tar.gz

Configure the SDK Security Credentials

- Extract the zipped tar file to a directory.
- Open the api-config.php located in the downloaded SDK files.
- Read through the file and place in your instance name (or path for local installs), API Key and Secret Key information as specified.
- Make sure all files are in the same directory (the core class looks for a config file in the same directory by default).
- Run the sample code api-examples.php!

Important!

You must setup user API access before running the sample. See the previous section "Create Your API Credentials" for more information.

Need More Information?

If you need more general information on the API, try the API Overview.
If you need information on methods available via the API, look at the API Reference.
The SDK also contains a README file with other useful information particular to php.

API Module - Admin and Audit

Admin and Audit

This section covers the functions found under the Admin section of ProVision.

- Authentication Testing
- Log Management
- Zone Templates

Authentication Testing

Authentication Testing

<table>
<tr><th colspan="2"><em>testSSH</em></th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=auth&action=testSSH</td></tr>
<tr><td>Description</td><td>Returns success or failure of a connection to an external server via SSH.</td></tr>
<tr><td>Returns</td><td><strong>Examples:</strong>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"Success!"</td></tr>
<tr><td>ERROR</td><td><em>{'success':0, 'message':'error message'}</em></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>SSHServer</td><td>STRING</td><td>totally.awesome.dom</td><td>IP or FQDN of server.</td></tr>
<tr><td>SSHPort</td><td>NUMBER</td><td>22</td><td>Port ssh is running on.</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>username</td><td>STRING</td><td>jsmith</td><td>Username on target server.</td></tr>
<tr><td>password</td><td>STRING</td><td>password123</td><td>Password for user.</td></tr>
<tr><td>directory</td><td>STRING</td><td>/tmp</td><td>Directory to attempt to access after successful login.</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=auth&action=testSSH&username=jsmith&passw</td></tr>
</table>

<table>
<tr><th colspan="2"><em>testLDAP</em></th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=auth&action=testLDAP</td></tr>
</table>

<table>
<tr><td>Description</td><td>Test basic connectivity to an LDAP server. Does not test actual authenticaion against server.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: <i>{'success':1, 'id':'12345'}</i>
ERROR: <i>{'success':0, 'message':'unable to add block'}></i></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>ldapServer</td><td>STRING</td><td>ldap.awesome.com</td><td>IP or FQDN of the LDAP server.</td></tr>
<tr><td>ldapPort</td><td>NUMBER</td><td>389</td><td>User-defined block code as defined in Admin-IPAM settings: Generic Code Per Block Name</td></tr>
<tr><td>ldapMode</td><td>STRING</td><td>SSL</td><td>Options are: SSL, TLS, or None.</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=auth&action=testLDAP&ldapPort=389&ldapServe</td></tr>
</table>

testSecure64

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=auth&action=testSecure64</td></tr>
<tr><td>Description</td><td>Returns success or failure of a connection to an Secure64 DNS appliance.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"Success!"</td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table>
</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>SSHServer</td><td>STRING</td><td>totally.awesome.com</td><td>IP or FQDN of server.</td></tr>
<tr><td>SSHPort</td><td>NUMBER</td><td>22</td><td>Port ssh is running on.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>username</td><td>STRING</td><td>jsmith</td><td>Username on target server.</td></tr>
<tr><td>password</td><td>STRING</td><td>password123</td><td>Password for user.</td></tr>
<tr><td>directory</td><td>STRING</td><td>/tmp</td><td>Directory to attempt to access after successful login.</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=auth&action=testSecure64&username=jsmith&pa</td></tr>
</table>

Log Management

- Log Management
    - Get

Log Management

<table>
<tr><th colspan="2"><em><strong>Get</strong></em></th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=log&action=get</td></tr>
<tr><td>Description</td><td>Returns a list of log entries. Use optional parameters to filter the list.</td></tr>
<tr><td>Returns</td><td><strong>Examples:</strong>
<table>
<tr><td>SUCCESSFUL</td><td><em>{"success":1,"message":"Search Successful.","data":[{"logId":"31568 "2012-05-07 17:44:43", "logLevel":"INFO","userId":"39","use "anna@6connect.com ","logCategory": "User","message": "Anna Claiborne (anna@6connect.com
) logged in via local authentication","ip":"107.111.0.228'</em></td></tr>
<tr><td>ERROR</td><td><em>{'success':0, 'message':'error message'}</em></td></tr>
</table>
<strong>Data Detail</strong></td></tr>
</table>

Name	Type	Example	Description
logId	INTEGER	24	Unique log entry id.
time	DATETIME	2012-05-07 22:10:07	Date and time year to second.
logLevel	STRING	NOTICE	Standard syslog log levels in verbose format (EMERG, ALERT, CRIT, ERR, WARNING, NOTICE, INFO, DEBUG).
userId	Integer	11	The unique user id associated with the log entry.
userName	STRING	anna@6connect.com	The unique user name associated with the log entry.
logCategory	STRING	IPAM	The 6connect category for the log entry (User, IPAM, Resource Holder, DNS, Peering, Assistant, NTP, Reporting).
message	STRING	Created new children from 1.0.0.0/24	The detailed log message.
ip	STRING	107.111.0.228	The remote IP address of the user who took the action being logged.

Required Parameters	None
Optional Parameters	

Name	Type	Example	Description

likeFlag	BOOL	1	When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.
logId	INTEGER	24	Unique log entry id.
timeStart	DATETIME	2012-05-07 [21:00:00]	Retrieve logs starting at this Date and optional time year to second.
timeEnd	DATETIME	2012-05-07 [22:00:00]	Retrieve logs ending at this Date and optional time year to second.
limit	INTEGER	100	Total log entries to retrieve. Default limit is 1000 records.
offset	INTEGER	50	Offset from 0 to retrieve log entries
userName	STRING	anna@6connect.com	The unique user name associated with the log entry.
logCategory	STRING	IPAM	The 6connect category for the log entry (User, IPAM, Resource Holder, DNS, Peering, Assistant, NTP, Reporting).

logLevel	STRING	NOTICE	Standard syslog log levels in verbose format (EMERG, ALERT, CRIT, ERR, WARNING, NOTICE, INFO, DEBUG).
ip	STRING	1.2.3.4	The remote IP address of the user whose action was logged
block	STRING	1.2.3.4/8	Used to return any actions performed on the specified block.

Example URL	/api/v1/api.php?target=log&action=get

Zone Templates

Zone Templates

<table>
<tr><th colspan="2"><em>Get</em></th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=zoneTemplate&action=get</td></tr>
<tr><td>Description</td><td>Returns success or failure of a connection to an external server via SSH.</td></tr>
<tr><td>Returns</td><td><strong>Examples:</strong>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"Found 1 records for template \"Awesome Template\".","data":{"templateId":"1
Template","created":"2013-07-31 14:01:24","modified":"2013-07-31 14:01:24","userId":"112","soa":null,"</td></tr>
<tr><td>ERROR</td><td><em>{'success':0, 'message':'error message'}</em></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>templateId</td><td>NUMBER</td><td>3</td><td>ID of the specific template to get.</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zoneTemplate&action=get</td></tr>
</table>

<table>
<tr><th colspan="2"><em>Update</em></th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=zoneTemplate&action=update</td></tr>
<tr><td>Description</td><td>Create a new template or update an existing template.</td></tr>
</table>

<table>
<tr>
<td>Returns</td>
<td><b>Examples:</b>
SUCCESSFUL: {"success":1,"message":"Template updated","data":{"templateId":"1011","name":"Awesome Template","created":"2013-08-05 23:15:52","modified":"2013-08-05 23:15:52","userId":"112","soa":"ns1.test.net hostmaster.ns1.test.net","refresh":"14400","retry":"3600","expire":"60480

ERROR: <i>{'success':0, 'message':'Error updating template: error details'}></i></td>
</tr>
<tr>
<td>Required Parameters</td>
<td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>name</td><td>STRING</td><td>Test Template</td><td>The name of the template to be created or updated.</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
<tr>
<td>Optional Parameters</td>
<td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>soa</td><td>STRING</td><td>ns1.test.net hostmaster.ns1.test.net</td><td>A valid SOA for the template in for format</td></tr>
<tr><td>ttl</td><td>INTEGER</td><td>86400</td><td>The TTL for the zone template, which is the default expiration time for all records without their own TTL.</td></tr>
<tr><td>refresh</td><td>INTEGER</td><td>14400</td><td>The time period for slaves to refresh the zone.</td></tr>
<tr><td>retry</td><td>INTEGER</td><td>3600</td><td>Time that a slave should retry refreshing the zone in case of incident.</td></tr>
<tr><td>expire</td><td>INTEGER</td><td>604800</td><td>Time for a slave to expire a zone.</td></tr>
<tr><td>mininum</td><td>INTEGER</td><td>3600</td><td>The maximum caching time in the event of failed lookups.</td></tr>
</table>
</td>
</tr>
</table>

count_records	INTEGER	5	Number of host records submitted with the update. All the following parameters names should be followed with their position in the count. In this example, the first record would have all the parameters for the first record followed by _1, the second record _2, and so on. This will be the order all records in the template follow.
host_1	STRING		The DNS record value.
ttl_1	INTEGER	3600	TTL of the specific host record.
type_1	STRING	A	A valid DNS record type.
value_1	IP	1.2.3.4	A valid IPv4 or IPv6 address.

Example URL	api/v1/api.php?target=zoneTemplate&action=update&templateId=1011& &refresh=14400&retry=3600&expire=604800&minimum=3600&value_0

Delete	
URL	/api/v1/api.php?target=zoneTemplate&action=delete
Description	Deletes a DNS template.

<table>
<tr><td>Returns</td><td><strong>Examples:</strong>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"Template \"Test Template\" delete."}</td></tr>
<tr><td>ERROR</td><td>{"success":0,"message":"No template found for templateId \"1005\"."}</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>templateId</td><td>INTEGER</td><td>3</td><td>ID of the template to delete.</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None.</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zoneTemplate&action=delete&templateId=1005</td></tr>
</table>

API Module - DHCP

DHCP Management Version 2

Overview

DHCP Management Version 2 integrates DHCP management with ProVision's resource and permissions hierarchy, as well as the IP Management system. Individual DHCP servers can be assigned via Resource Permissions to different internal user groups, to be managed by only the appropriate parties.

Under DHCPv2 there is no distinct “DHCP Server” type or section – instead there is a “DHCP Module” which, when attached as a child to an existing resource, transforms it into a DHCP-enabled device. The most common use is to take the generic “Server” Section and turn it into a DHCP Server by attaching the DHCP Module as a child. This configuration allows users to add functionality to a basic resource and provides a cleaner management interface.

API Updates

The DHCPv1 API operated via calls to the DHCPServer and the DHCPEntry endpoint families. However, now that DHCPv2 is contained entirely within the resource system, most of the API calls to manipulate DHCP data do so using the Resource family of API endpoints to modify specific Resource attributes reserved for DHCP functionality.

DHCP API How-To

Relate with Resources

The DHCPv2 system builds upon the ProVision Resource API. With the exception of a few configuration commands all DHCPv2 API commands use the Resource family of API endpoints.

How to attach the DHCP Module as a child

As described above, DHCPv2 functionality is enabled on a particular resource by attaching a DHCP Module as a child. A command to do this is as follows:

```
            [ProVision root]/api/v1/api.php?target=resource&action=add

            data:
meta[type]: dhcp_module
meta[name]: [parent resource id] DHCP Module
meta[parent_id]: [parent resource id]
```

The special resource type “dhcp_module” indicates to ProVision that the DHCP system is enabled for the parent object. The attributes associated with the “dhcp_module” resource govern the DHCP system's behavior.

Updating the attributes of a DHCP Server uses a Resource Update command:

```
[ProVision root]/api/v1/api.php?target=resource&action=update&meta[id]=2178
&meta[type]=dhcp_module&fields[_dhcp_attributes][]={"type":"ISC","notes":"notes go
here","username":"username","port":"port","config_test":"/etc/init.d/dhcpd
configtest","server_stop":"/etc/init.d/dhcpd stop","server_start":"/etc/init.d/dhcpd
start","config_path":"/tmp/dhcpd.conf","option_routers":"192.168.0.0","option_domain_na
line 1","freeLine2":"free line 2","freeLine3":"free line 3"}
```

This command appears rather complicated, but can be broken apart into reasonable pieces. The first section:

```
target=resource&action=update&meta[id]=2178&meta[type]=dhcp_module
```

is familiar from other parts of ProVision. We are updating a resource of type “dhcp_module” whose resource id is 2178. The second section of the command details the update values, starting with

```
fields[_dhcp_attributes][]=
```

which contains a JSON-encoded string of all the fields specific to a DHCP server's function. When expanded into its full object form it is substantially easier to digest:

```
{
            "type":"ISC",
            "notes":"notes go here",
            "username":"username",
            "port":"port",
            "config_test":"/etc/init.d/dhcpd configtest",
            "server_stop":"/etc/init.d/dhcpd stop",
            "server_start":"/etc/init.d/dhcpd start",
            "config_path":"/tmp/dhcpd.conf",
            "option_routers":"192.168.0.0",
            "option_domain_name_servers":"ns1.6connect.com",
            "option_domain_name":"6connect.com",
            "authoritative":"1",
            "default_lease_time":"600",
            "max_lease_time":"7200",
            "local_port":"67",
            "log_facility":"local7",
            "password":"password",
            "server_ip":"192.168.0.1",
            "freeLines":3,
            "freeLine1":"free line 1",
            "freeLine2":"free line 2",
            "freeLine3":"free line 3"
}
```

This object describes all the most common DHCP server configuration options. For a full explanation of each of the fields, see the Detailed API Specification later in this document.

Please note that the object above must be passed to the DHCP system as a JSON-encoded string. It must be passed into the special "_dhcp_attributes" attribute for it to be functional, as in the example URL.

Create DHCP IP Aggregates

For details on how to manage IP aggregates using ProVision's IPAM API, see API Module - IPAM.

Of particular interest to DHCP management is the addition of DHCP aggregates, which are sections of IP space marked as available for use by the DHCPv2 system.

How to add a DHCP Aggregate

An example command to add a DHCP Aggregate is:

```
[ProVision root]/api/v1/api.php?target=ipam&action=add&block=192.168.0.0/24&rir=
1918&vlan=&tags=&region=&resourceId=1282&allowSubAssignments=true
```

The important part to note is that the IP block is being assigned to resourceId 1282, which corresponds to the DHCP Available resource. The DHCP Available resource is a system-level resource which is used to hold all unassigned DHCP IP addresses. Every instance has its own DHCP Available resource, whose id can be found with the following command:

```
[ProVision root]/api/v1/api.php?target=resource&action=get&slug=dhcp-available
```

New DHCP subnets and hosts draw their IPs from this pool. If there are no IPs in the DHCP Available pool new subnets and hosts will not be able to be created.

DHCP IP aggregates are fetched, updated, split, and deleted using the standard IPAM management API endpoints. Please see the IPAM API Documentation. for details.

Subnets and Hosts

Every DHCP configuration file consists primarily of Subnet and Host declarations, mapping out what IP addresses are available for what purpose. In DHCPv2, DHCP Pools are reusable components that can be attached to several DHCP Servers in order to build flexible, responsive DHCP configurations.

In ProVision DHCPv2 all DHCP Pools regardless of whether they span Subnets or individual Hosts require that a "dhcp_pool" resource be created to govern them.

How to create DHCP Pools

Similar to how the "dhcp_module" resource was created above, the command to create a DHCP Pool is as follows:

```
[ProVision root]/api/v1/api.php?target=resource&action=add&meta[type]=dhcp_pool
&meta[name]=New
Subnet&fields[_dhcp_type][]=subnet&fields[_dhcp_pool_attributes][]={"mac":"","rangeStar
Line 1","freeLine2":"Free Line 2","freeLine3":"Free Line 3"}
```

The first half of this command is relatively straightforward:

```
target=resource&action=add&meta[type]=dhcp_pool&meta[name]=New Subnet
```

This section informs the API that we wish to create a new, empty “dhcp_pool” resource whose name is “New Subnet.”

```
fields[_dhcp_type][]=subnet&fields[_dhcp_pool_attributes][]={"mac":"","rangeStart":"",
"rangeEnd":"","freeLines":3,"freeLine1":"Free Line 1","freeLine2":"Free Line
2","freeLine3":"Free Line 3"}
```

The second half of the command behaves in a similar manner to the “dhcp_module.” The “_dhcp_pool_attributes” field holds a JSON-encoded string which describes the dhcp_pool resource. When expanded, the JSON string becomes the following object:

```
{
            "mac":"",
            "rangeStart":"",
            "rangeEnd":"",
            "freeLines":3,
            "freeLine1":"Free Line 1",
            "freeLine2":"Free Line 2",
            "freeLine3":"Free Line 3"
}
```

For a full explanation of each of the fields, see the Detailed API Specification.

Please note that the object above must be passed to the DHCP system as a JSON-encoded string. It must be passed into the “_dhcp_pool_attributes” attribute for it to be functional, as in the example URL.

Once a dhcp_pool resource is in the system it can be updated with IP data obtained from the IP Management system. Under DHCPv2, the DHCP system uses all the standard IPAM API endpoints and can make use of both the smartAssign and the directAssign methods. Please see the IPAM API documentation for details.

How to smart-assign a DHCP IP range from the DHCP Available resource to a dhcp_pool resource

An example command for smart-assigning a DHCP IP range from the DHCP Available resource to a newly-created dhcp_pool resource is as follows:

```
[ProVision root]/api/v1/api.php?target=ipam&action=smartAssign&resourceId=2180&
type=ipv4&mask=31&rir=1918&assignedResourceId=1282
```

In this example we are using the IPAM API endpoint to smart-assign an IPv4 /31 from the DHCP Available resource (resource id 1282) to the newly-created dhcp_pool object (resource id 2180). This action removes this IP range from the available pool and prevents it from being used by other parts of ProVision.

Once an IP block is assigned to a dhcp_pool it should be updated with the proper range start and range end. A Resource Update command is used for this.

```
[ProVision root]/api/v1/api.php?target=resource&action=update&meta[type]=dhcp_pool&
meta[name]=Another
Test&fields[_dhcp_type][]=subnet&fields[_dhcp_pool_attributes][]={"mac":"","rangeStart"
```

The key information here is that the “rangeStart” and the “rangeEnd” fields in the JSON-encoded '_dhcp_pool_attributes' attribute have been populated with the beginning and end of the IP range assigned by smart-assign. Also note that a new field is being populated as '_dhcp_ip_id', which contains the IPAM id of the newly-assigned IP block.

When assigning dhcp_pools covering a single host the steps are much the same, but the 'mac' field in the '_dhcp_pool_attributes' object must be populated with the MAC address of the host in question.

Linking Subnets and Hosts with DHCP Servers

DHCP Pools exist as re-usable components which can be individually assigned to any number of DHCP Servers in order to assemble flexible DHCP Configurations. Once created, a DHCP Pool is not attached to any DHCP Server in the system. DHCP Pools must be linked to a server for the pool to be included in DHCP configuration pushes.

How to link a dhcp_pool and a DHCP Server

An example of building a link between a dhcp_pool and a DHCP Server is:

```
[ProVision root]/api/v1/api.php?target=resource&action=addLink&resource_id1=2178&
resource_id2=1452&relation=dhcpPoolLink
```

The Resource Linkage system controls which DHCP Pools are associated with a given DHCP Server. In the case of linking a DHCP Pool to a DHCP Server, the relation used is “dhcpPoolLink”. This is a directional link, so it is important that resource_id1 and resource_id2 do not get confused.

```
relation:  “dhcpPoolLink”
resource_id1:  the id of the dhcp_module this pool is being linked to
resource_id2:  the id of the dhcp_pool being linked
```

⚠ It is very important that resource_id1 not be confused with resource_id2. The link will not function with the values reversed.

To undo the above and break a DHCP Pool link, use the same command but substitute “deleteLink” for the action “addLink”.

```
[ProVision root]/api/v1/api.php?target=resource&action=deleteLink&resource_id1=2178&
resource_id2=2179&relation=dhcpPoolLink
```

Pushing Configurations

Pushing configuration files and restarting a DHCP server is a fairly straightforward process.

How to push configuration files

Once the server has been configured according to the previous sections, hitting the following API endpoint will trigger a DHCP push:

```
[ProVision root]/api/v1/api.php?target=dhcp&action=push&id=2178
```

The “id” in the above string is the id of the dhcp_module resource attached to the server you whose configuration is to be pushed. The API return payload will contain success or failure codes, as well as a description of any errors which might have occurred.

When a DHCP configuration file is pushed an SSH connection is opened to the configured server using the user, password, and port supplied to the '_dhcp_attributes' attribute on the dhcp_module resource. If the system successfully connects, it will assemble a DHCP configuration from the information given to the dhcp_module's '_dhcp_attribute' attribute and then parse and add in all linked dhcp_pool resources.

After the assembled file has been transferred to the DHCP server it will be placed in the location given by 'config_path' on the dhcp_module, and then the command described in 'config_test' will be run to determine whether or not this new file parses correctly. If 'config_test' is blank or omitted, this step is skipped.

If the file parses correctly the DHCP will be stopped and restarted according to the 'server_stop' and 'server_start' commands on the DHCP module. If there are errors at any point the system backs out, replaces old config files, and reports the errors via the 'message' return field of the API call.

Detailed API Specification

A detailed listing of API endpoints related to DHCP Servers, Pools, and Links can be found here:

- API Module - DHCPv2

API Module - DHCPv2

DHCPv2 Module

The DHCPv2 system is built upon the Resource API, so actions relating to DHCP tasks are largely expressed in terms of Resource actions.

This section describes common DHCP tasks and how they are accomplished via the DHCPv2 system.

get all DHCP-enabled resources	
Description	Finds all resources from section 'dhcp_module,' which indicates that their parents are DHCP-enabled. Adding in other Resource-Get API parameters can filter this list further.
URL	/api/v1/api.php?target=resource&action=get&type=dhcp_module
Returns	**Examples:**

SUCCESSFUL:	{"success":1,"message":"Search successful","data":[{"id":"1432", "name":"1392 DHCP Module" ,"slug":"1392-dhcp-module", "type":"dhcp_module", "parent_id":"1392", "category_id":null, "attr":{"_dhcp_attributes":"{\"type\":\ \"notes\":\"\", \"username\":\"\", \"port\":\"\", \"config_test\":\"\/etc\/init.d\/dhcpd configtest\", \"server_stop\":\"\/etc\/init.d\/dhcpd stop\", \"server_start\":\"\/etc\/init.d\/dhcpd start\", \"config_path\":\"\", \"option_routers\":\"\", \"option_domain_name_servers\":\" \"option_domain_name\":\"\", \"authoritative\":\"1\", \"default_lease_time\":\"600\", \"max_lease_time\":\"7200\", \"local_port\":\"67\", \"log_facility\":\"local7\", \"password\":\"\", \"server_ip\":\"10.0.0.0\", \"freeLines\":0}", "_dhcp_config_id":"33"}}], "result_count":1, "found_count":1}
ERROR:	{"success":0, "message":"error message"}

Return Detail:

Name	Type	Description
id	INTEGER	ID of the dhcp_module resource
name	STRING	The name of the dhcp_module
slug	STRING	The unique reference string for this resource
type	STRING	Always 'dhcp_module
parent_id	INTEGER	The resource to which the dhcp_module is attached
category_id	INTEGER	The category to which this dhcp_module is associated
result_count	INTEGER	How many dhcp_modules are returned in this search.
found_count	INTEGER	How many dhcp_modules were found in this query, without pagination.

Attributes:

Key	Type	Description
_dhcp_attributes	JSON	A JSON-encoded string containing all the specific configuration parameters which govern this DHCP server. An expansion of the JSON object is given below in the Data Attributes section.
_dhcp_config_id	INTEGER	A reference to the DHCP Config file written within the system. This field is maintained by the DHCPv2 system itself and should not be set externally.

create a new DHCP-enabled resource

<table>
<tr><td>Description</td><td>A resource becomes a DHCP-enabled by adding a special "dhcp_module" resource as a child. This action is identical to a normal Resource Create command.</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=add&meta[type]=dhcp_module
DHCP Module&meta[parent_id]=2163</td></tr>
<tr><td>Returns</td><td>
<b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Resource added","data":{"id": 2165,"name" :"2163 DHCP Module","slug": "2163-dhcp-module-2","type" :"dhcp_module","parent_id": 2163,"category_id": null,"attr":[]}}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<b>Return Detail:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>ID of the newly created dhcp_module</td></tr>
<tr><td>name</td><td>STRING</td><td>The name of the dhcp_module</td></tr>
<tr><td>slug</td><td>STRING</td><td>The unique reference string for this resource</td></tr>
<tr><td>type</td><td>STRING</td><td>Always 'dhcp_module'</td></tr>
<tr><td>parent_id</td><td>INTEGER</td><td>The resource to which the dhcp_module is attached</td></tr>
<tr><td>category_id</td><td>INTEGER</td><td>The category to which this dhcp_module is associated</td></tr>
</table>
</td></tr>
</table>

update a DHCP-enabled resource with new configuration info

<table>
<tr><td>Description</td><td>Modifying an existing dhcp_module uses the identical commands as all other Resource-Update actions. An example of configuring a DHCP server is given below.</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=update&meta[id]=2178
&meta[type]=dhcp_module&fields[_dhcp_attributes][]={"type":"ISC","not
go
here","username":"username","port":"port","config_test":"/etc/init.d/dhcp
configtest","server_stop":"/etc/init.d/dhcpd
stop","server_start":"/etc/init.d/dhcpd
start","config_path":"/tmp/dhcpd.conf","option_routers":"192.168.0.0","op
line 1","freeLine2":"free line 2","freeLine3":"free line 3"}</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success": 1,"message":
"Resource Updated","data":
{"id":"2166" ,"name":"2163
DHCP Module",
"slug":"2163-dhcp-module-3"
,"type":"dhcp_module",
"parent_id":"2163",
"category_id":null
,"attr":{"_dhcp_attributes":
"{\"type\":\"ISC\",
\"notes\":\"notes go here\",
\"username\":\"username\",
\"port\":\"port\",
\"config_test\":\"\\\/etc\\\/init.d\\\/dhcp
configtest\"
,\"server_stop\":\"\\\/etc\\\/init.d\\\/dh
stop\"<br>,\"server_start\":\"\\\/etc\\\/init.d\\\/dh
start\",\"config_path\":\"\\\/tmp\\\/dhc
\"option_routers\":\"192.168.0.0\",
\"option_domain_name_servers\":\"
\"option_domain_name\":\"6connec
\"authoritative\":\"1\",
\"default_lease_time\":\"600\",
\"max_lease_time\":\"7200\",
\"local_port\":\"67\",
\"log_facility\":\"local7\"
,\"password\":\"**********\",
\"server_ip\":\"192.168.0.1\",
\"freeLines\":3,
\"freeLine1\":\"free line 1\",
\"freeLine2\":\"free line 2\",
\"freeLine3\":\"free line 3\"}"}}}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error
message"}</td></tr>
</table>
<b>Return Detail:</b></td></tr>
</table>

Name	Type	Description
id	INTEGER	ID of the newly created dhcp_module
name	STRING	The name of the dhcp_module
slug	STRING	The unique reference string for this resource
type	STRING	Always 'dhcp_module'
parent_id	INTEGER	The resource to which the dhcp_module is attached
category_id	INTEGER	The category to which this dhcp_module is associated

Attributes:

Key	Type	Description
_dhcp_attributes	JSON	A JSON-encoded string containing all the specific configuration parameters which govern this DHCP server. An expansion of the JSON object is given below in the Data Attributes section.

remove DHCP functionality from a resource

Description	To remove DHCP functionality, delete the dhcp_module child resource. This operation uses general Resource->Delete functionality.
URL	/api/v1/api.php?target=resource&action=delete&id=2166

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table><tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Deleted 2163-dhcp-module-3 (#2166)"}</td></tr><tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr></table></td></tr>
</table>

get all DHCP Pools

<table>
<tr><td>Description</td><td>As with the dhcp_module commands, the API endpoints governing DHCP IP Pools use the general Resource system. All the modifiers that can be applied to a Resource-Get can be used to filter this query.</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=get&type=dhcp_pool</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table><tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Search successful","data":[{"id":"1482","nar
],"result_count":1,"found_count":1}</td></tr><tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr></table>
<b>Return Detail:</b></td></tr>
</table>

Name	Type	Description
id	INTEGER	ID of the dhcp_pool resource
name	STRING	The name of the dhcp_pool
slug	STRING	The unique reference string for this resource
type	STRING	Always 'dhcp_pool'
parent_id	INTEGER	The resource to which the dhcp_pool is attached
category_id	INTEGER	The category to which this dhcp_pool is associated
result_count	INTEGER	How many dhcp_pools are returned in this search.
found_count	INTEGER	How many dhcp_pools were found in this query, without pagination.

Attributes:

Key	Type	Description
_dhcp_type	STRING	Either 'subnet' or 'host'. Determines whether this DHCP Pool is describing a Subnet or a Host.
_dhcp_pool_attributes	JSON	A JSON-encoded string containing all the specific configuration parameters which govern this DHCP Pool. An expansion of the JSON object is given below in the Data Attributes section.
_dhcp_ip_id	INTEGER	The id of the IPAM subnet or host which is assigned to this DHCP Pool

create a new DHCP Pool resource

<table>
<tr><td>Description</td><td>Uses the general Resource-Add endpoint to create a DHCP Pool resource.</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource& action=add& meta[type]=dhcp_pool& meta[name]=New Subnet& fields[_dhcp_type][]=host& fields[_dhcp_pool_attributes][]={"mac":"aa:bb:cc:dd:ee:ff", "rangeStart":"", "rangeEnd":"", "freeLines":3, "freeLine1":"Free Line 1", "freeLine2":"Free Line 2", "freeLine3":"Free Line 3"}</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Resource added","data":{"id":2167,"name":"N
Subnet","slug":"new-subnet","type":
","parent_id":1,"category_id":null,"a</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<b>Return Detail:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>ID of the newly created dhcp_pool</td></tr>
<tr><td>name</td><td>STRING</td><td>The name of the dhcp_pool</td></tr>
<tr><td>slug</td><td>STRING</td><td>The unique reference string for this resource</td></tr>
<tr><td>type</td><td>STRING</td><td>Always 'dhcp_pool'</td></tr>
<tr><td>parent_id</td><td>INTEGER</td><td>The parent resource; by default the TLR.</td></tr>
<tr><td>category_id</td><td>INTEGER</td><td>The category to which this dhcp_pool is associated</td></tr>
</table>
</td></tr>
</table>

update a DHCP Pool

Description	Modifying an existing dhcp_pool uses the identical commands as all other Resource-Update actions.

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=resource& action=update& meta[type]=dhcp_pool& meta[name]=Another Test& fields[_dhcp_type][]=subnet& fields[_dhcp_pool_attributes][]={"mac":"", "rangeStart":"10.10.10.4", "rangeEnd":"10.10.10.5", "freeLines":3, "freeLine1":"example1", "freeLine2":"example2", "freeLine3":"example3"}&fields[_dhcp_ip_id][]=92430&meta[id]=2165</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1, "message":"Resource Updated", "data":{"id":"2165", "name":"Another Test", "slug":"2163-dhcp-module-2", "type":"dhcp_module", "parent_id":"2163", "category_id":null,"attr":{"_dhcp_typ
,"_dhcp_pool_attributes":"{\"mac\":\'
\"rangeStart\":\"10.10.10.4\", \"rangeEnd\":\"10.10.10.5\", \"freeLines\":3, \"freeLine1\":\"example1\", \"freeLine2\":\"example2\", \"freeLine3\":\"example3\"}", "_dhcp_ip_id":"92430"}}}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<b>Return Detail:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>ID of the newly created dhcp_module</td></tr>
<tr><td>name</td><td>STRING</td><td>The name of the dhcp_module</td></tr>
<tr><td>slug</td><td>STRING</td><td>The unique reference string for this resource</td></tr>
<tr><td>type</td><td>STRING</td><td>Always 'dhcp_module'</td></tr>
<tr><td>parent_id</td><td>INTEGER</td><td>The resource to which the dhcp_module is attached</td></tr>
<tr><td>category_id</td><td>INTEGER</td><td>The category to which this dhcp_module is associated</td></tr>
</table>
<b>Attributes:</b></td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><th>Key</th><th>Type</th><th>Description</th></tr>
<tr><td>_dhcp_type</td><td>STRING</td><td>Either 'subnet' or 'host'. Determines whether this DHCP Pool is describing a Subnet or a Host.</td></tr>
<tr><td>_dhcp_pool_attributes</td><td>JSON</td><td>A JSON-encoded string containing all the specific configuration parameters which govern this DHCP Pool. An expansion of the JSON object is given below in the Data Attributes section.</td></tr>
<tr><td>_dhcp_ip_id</td><td>INTEGER</td><td>The id of the IPAM subnet or host which is assigned to this DHCP Pool</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th colspan="2"><i>delete a DHCP Pool</i></th></tr>
<tr><td>Description</td><td>To delete a DHCP Pool, use the standard Resource-Delete functionality</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=delete&id=2165</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Deleted 2165-another-subnet-3 (#2165)"}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th colspan="2"><i>assigning an IP address or blocks to a DHCP Pool</i></th></tr>
<tr><td>Description</td><td>Assigning IP addresses or blocks to a DHCP Pool resource removes them from the available pool so they cannot be assigned out again. This procedure uses all the standard IPAM assignment functions, so long as the resource assigned <b>from</b> is the DHCP Available resource.</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=smartAssign&resourceId=2162&typ</td></tr>
</table>

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table><tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Assigned 10.8.1.4\/31 to 208.39.104.106 (2162) via Smart Assign","id":94468,"data":{"id":9446
20:17:32","description":null,"parent"
20:17:32","asn":null,"allowSubAssig
- 10.8.1.5","tags":["DHCP"]}}</td></tr><tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr></table>
<b>Return Detail:</b>
For a detailed breakdown of this endpoint's return data, please see the IPAM documentation.</td></tr>
</table>

get all DHCP Pool linkages

Description	The association between DHCP Pools and DHCP Modules belongs to the Resource Linkage family of endpoints. The 'relation' field should be set to the 'dhcpPoolLink' type to pull only DHCP Pool linkage information.
URL	/api/v1/api.php?target=resource&action=getLink&relation=dhcpPoolLink

<table>
<tr>
<td>Returns</td>
<td>
<b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1 ,"message":"Search successful", "data":{"meta":{"totalRecords":"3", "retrieved":3}, "0":{"id":"22", "resource_id1":"1292", "resource_id2":"1302", "relation":"dhcpPoolLink"}, "1":{"id":"2", "resource_id1":"1292", "resource_id2":"1452", "relation":"dhcpPoolLink"}, "2":{"id":"12", "resource_id1":"1422", "resource_id2":"1482", "relation":"dhcpPoolLink"}}}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<b>Return Detail:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>Id of the pool-module linkage</td></tr>
<tr><td>resource_id1</td><td>INTEGER</td><td>The id of the dhcp_module resource</td></tr>
<tr><td>resource_id2</td><td>INTEGER</td><td>The id of the dhcp_pool resource</td></tr>
<tr><td>relation</td><td>STRING</td><td>The relation type. Always 'dhcpPoolLink'</td></tr>
</table>
<b>Meta Attributes:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>totalRecords</td><td>INTEGER</td><td>How many records were found by this query, without pagination.</td></tr>
<tr><td>retrieved</td><td>INTEGER</td><td>How many records were returned by this query, with pagination.</td></tr>
</table>
</td>
</tr>
</table>

add a new DHCP Pool linkage

<table>
<tr><td>Description</td><td>Adds a new link between a DHCP Pool and a dhcp_module resource. A single pool can be linked to many dhcp_modules, and a single dhcp_module can have any number of linked pools.</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=addLink&resource_id1=1292&r</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Resource link added"}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<b>Data Detail:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>resource_id1</td><td>INTEGER</td><td>The id of the dhcp_module resource</td></tr>
<tr><td>resource_id2</td><td>INTEGER</td><td>The id of the dhcp_pool resource</td></tr>
<tr><td>relation</td><td>STRING</td><td>The relation type being added. Always 'dhcpPoolLink'</td></tr>
</table></td></tr>
</table>

delete DHCP Pool linkages

<table>
<tr><td>Description</td><td>Deletes a link between a dhcp_module and a dhcp_pool. Uses the standard Resource Linkage endpoints.</td></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=deleteLink&id=22</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Resource link(s) deleted."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
</table>

push a DHCP config

Description	Builds a DHCP configuration from the attributes assigned to a dhcp_module and all of the linked dhcp_pools. Pushes that config to the configured DHCP server, tests it against the config parsing function, then restarts the server with the new configuration.

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=dhcp&action=push&id=1292</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Pushes Attempted.","data":[[1,"1292","381 DHCP Module","Configuration successfully pushed."]]}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<b>Data Detail</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>The id of the dhcp_module resource whose configuration is to be pushed.</td></tr>
</table>
</td></tr>
</table>

Data Attributes

<table>
<tr><th colspan="2"><i>_dhcp_attributes</i></th></tr>
<tr><td>Description</td><td>The _dhcp_attributes data attribute holds the specific settings used to generate a DHCP configuration file, place it on a server via SCP, and restart that server via a SSH session.</td></tr>
<tr><td>Example:</td><td>{"type":"ISC", "notes":"notes here", "username":"username", "port":"22", "config_test":"/etc/init.d/dhcpd configtest", "server_stop":"/etc/init.d/dhcpd stop", "server_start":"/etc/init.d/dhcpd start", "config_path":"/tmp/dhcpd.conf", "option_routers":"", "option_domain_name_servers":"", "option_domain_name":"", "authoritative":"1", "default_lease_time":"600", "max_lease_time":"7200", "local_port":"67", "log_facility":"local7", "password":"", "server_ip":"10.0.0.0", "freeLines":0}</td></tr>
<tr><td></td><td><b>Data Description</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>type</td><td>STRING</td><td>The type of DHCP server being administered. Currently only 'ISC' is supported.</td></tr>
<tr><td>notes</td><td>STRING</td><td>Notes associated with this DHCP server</td></tr>
<tr><td>server_ip</td><td>STRING</td><td>The IP address of the DHCP server</td></tr>
</table>
</td></tr>
</table>

username	STRING	The SSH username employed when transferring the DHCP configuration file to the server.
password	STRING	The SSH password employed when transferring the DHCP configuration file to the server.
port	INTEGER	The SSH port employed when transferring the DHCP configuration file to the server.
config_test	STRING	The command to test if a configuration file parses correctly. ex: /etc/init.d/dhcpd configtest
server_stop	STRING	The command to stop the DHCP server. ex: /etc/init.d/dhcpd stop
server_start	STRING	The command to start the DHCP server. ex: /etc/init.d/dhcpd start
config_path	STRING	Where to place the configuration file on the server.
authoritative	BOOL	Whether or not this DHCP server is authoritative.
default_lease_time	INTEGER	The default lease time for IPs distributed by this DHCP server.
max_lease_time	INTEGER	The max lease time for IPs distributed by this DHCP server.
local_port	INTEGER	The port on which this DHCP server listens
option_routers	STRING	The information which populates the "routers" option in the DHCP configuration

option_domain_name_servers	STRING	The information which populates the "domain_name_servers option in the DHCP configuration
option_domain_name	STRING	The information which populates the "domain_name" option in the DHCP configuration
log_facility	STRING	The log facility to which this DHCP Server sends its logging information
freeLines	INTEGER	As this system cannot hope to support all the thousands of different DHCP configurations, ProVision's DHCPv2 system includes a mechanism for adding "free lines" to the end of certain DHCP config sections so that administrators can customize their DHCP config file to their needs. The "freeLines" field indicates how many of these lines exist to be inserted after the general server definition section but before the subnets and hosts are enumerated.

freeLine#	STRING	Free line data to be inserted after the general server definition section but before the subnets and hosts are enumerated. There can be multiple instances of this attribute, numbered appropriately. ex: "freeLine1", "freeLine2", "freeLine3", etc. The number of freeLine# entries must match the number in the "freeLines" attribute.

_dhcp_pool_attributes

Description	A JSON-encoded string containing all the specific configuration parameters which govern this DHCP Pool.
Example:	{"mac":"ab:cc:de:ff:aa:bc","rangeStart":"13.0.0.0","rangeEnd":"13.0.0.25 "freeLines1":"free line"}

Data Description

Name	Type	Description
mac	STRING	Only used when setting up a DHCP Host-type Pool. Holds the MAC address of the system to which the IP will be associated.
rangeStart	STRING	Only used when setting up a DHCP Subnet-type Pool. Holds the beginning of the Subnet range being allocated.
rangeEnd	STRING	Only used when setting up a DHCP Subnet-type Pool. Holds the end of the Subnet range being allocated.

freeLines	INTEGER	As this system cannot hope to support all the thousands of different DHCP configurations, ProVision's DHCPv2 system includes a mechanism for adding "free lines" to the end of certain DHCP config sections so that administrators can customize their DHCP config file to their needs. The "freeLines" field indicates how many of these lines exist to be inserted within the DHCP Pool declaration.
freeLine#	STRING	Free line data to be inserted after the general server definition section but before the subnets and hosts are enumerated. There can be multiple instances of this attribute, numbered appropriately. ex: "freeLine1", "freeLine2", "freeLine3", etc. The number of freeLine# entries must match the number in the "freeLines" attribute.

API Module - DNS

- DNS Server Control
    - get
    - add
    - delete
    - update
    - transferByServer
    - transferSingle
- DNS Zone Control
    - get
    - search
    - update
    - add
    - delete
    - getRecordTypes
    - getFile
    - getDSFile
    - checkZone
    - getArchivedZone
- DNS Record Control
    - get
    - update
    - add
    - delete
    - switch
- Server-Zone Linkage
    - get
    - add
    - delete
- Name Server Control
    - get
    - add
    - delete
    - setDefault
    - orderUp
    - orderDown

DNS Server Control

get	
URL	/api/v1/api.php?target=dnsServer&action=get
Description	If provided with an id, fetches that DNS Server from the database. If not, fetches a list of all stored DNS Servers
Returns	**Examples:**

SUCCESSFUL:	{"success":1,"message":"Fetch Sucessful.","data":[{"id":"10","serve "username":"user", "password":"vwvddp","port":"2600", "SCP","remote_directory":"zones", "named_conf_path":"\/etc\/zones"," :null,"dyn_DNSSEC_contact":null, "powerdns_backend":"Bind","db_us "server_type":"slave","SOA":null,"m "{\"customer_name\":\"\",\"server_ty ,\"SOA\":\"\",\"remote_directory\":\"z \"named_conf_path\":\"\\\/etc\\\/zone \"dyn_DNSSEC_contact\" :\"\",\"post_command\":\"\" ,\"pre_command\":\"\",\"powerdns_b \"db_username\":\"\",\"db_passwor "testID":"963","zoneCount":"8","vie \"server_id\":\"10\",\"name\":\"_6con]}
ERROR:	{"success":0, "message":"error message"}

Data Detail:

Name	Type	Description
id	INTEGER	Server ID
server	STRING	Server Name
username	STRING	Login Name
password	CRYPT	Login Password
port	INTEGER	Port the Server listens on
zoneCount	INTEGER	The number of zones attached to this server.
options	JSON	The options entry is a JSON-encoded string containing a variety of server-specific configuration options. This string will vary widely by server type and configuration. The following are a selection of common settings.

transfer_type	STRING	Protocol used for transfer of DNS zones and records. Valid settings include SCP, PowerDNS, Secure64, Secure64Signer
server_type	STRING	Whether this server is a master or a slave server
SOA	STRING	The SOA entry to be used for zones on this server
remote_directory	STRING	The directory where SCP will place the zone files.
named_conf_path	STRING	The path to the zone files used within the named.conf file.
pre_command	STRING	The command executed on the server before the zones are transferred
post_command	STRING	The command executed on the server after the transfer is complete
enable_views	INTEGER	Whether or not Views are enabled
views	JSON	The views entry is a JSON-encoded string containing all the information about the Views attached to this server, if any exist.
id	INTEGER	The View ID
server_id	INTEGER	The ID of the server the View is attached to
name	STRING	The name of the View
description	STRING	A description of the View
timestamp	INTEGER	The UNIX timestamp of when the view was created.

<table>
<tr><td></td><td><table><tr><td>extras</td><td>JSON</td><td>A JSON-encoded array of the extra attributes printed out in the view definition in the config file.</td></tr></table></td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td><table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>id</td><td>INTEGER</td><td>15</td><td>The server id to fetch.</td></tr></table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=dnsServer&action=get&id=15</td></tr>
</table>

<table>
<tr><th colspan="2">add</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=dnsServer&action=add</td></tr>
<tr><td>Description</td><td>Adds a new DNS Server</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table><tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Add Successful."}</td></tr><tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr></table></td></tr>
</table>

Required Parameters

Name	Type	Example	Description
server	STRING	dns.yourdomain.com	IP or FQDN of the DNS Server
password	STRING	password1	Login password for Server
transferType	STRING	SCP	Protocol used for transfer of DNS zones and records. Valid settings include SCP, PowerDNS, Secure64, Secure64Signer
serverType	STRING	Master	Values are 'Master' or 'Slave' only
displayName	STRING	Primary NS	The name displayed representing the DNS server, can be the same as server or different
SOA	STRING	ns1.6connect.com hostmaster.6connect.com	Server of Authority record for DNS server

Optional Parameters

These optional parameters vary according to what type of server is being configured.

Name	Type	Example	Description
customerName	STRING	/tmp/zones	Customer Name
remoteDirectory	STRING	/tmp/zones	Zone Directory on Server
port	INTEGER	22	Port for ssh or scp access to server
namedConfPath	STRING	/tmp	The path to the zone files used within the named.conf file.

preCommand	STRING	/path/to/stuff/precommand	Command to execute before zone transfer
postCommand	STRING	/path/to/stuff/postcommand	Command to execute after zone transfer
DNSSECContact	STRING	joeuser	For use with Dyn dns service
username	STRING	bobuser	Login name for Server
active	INTEGER	0	Values 0 or 1 only, sets the server to inactive on 0 value
masterid	INTEGER	53	Master server ID. If a server is a slave, masterid points to its master.
powerDNSBackend	STRING	Bind or MySQL	pDNS server backend type
dbDatabaseName	STRING	pdns_1	DB name for pDNS servers with MySQL powerDNSBacker type
dbPort	INTEGER	3306	Port for for pDNS servers with MySQL powerDNSBacker type
dbUsername	STRING	someuser	DB username for pDNS servers with MySQL powerDNSBacker type
dbPassword	STRING	somepass	DB password for pDNS servers with MySQL powerDNSBacker type

Example URL	/api/v1/api.php?target=dnsServer&action=add&server=dns.yourdomain.com&transferType=Secure64&displayName=PrimaryNS&serverType=master&password=password1&SOA=ns1.6connect.com.+hostmaster.6connect.com.

delete	
URL	/api/v1/api.php?target=dnsServer&action=delete
Description	Deletes a DNS Server

Returns	**Examples:**
	SUCCESSFUL: {"success":1,"message":"Delete Successful."}
	ERROR: {"success":0, "message":"error message"}

Required Parameters	**Name**: id **Type**: INTEGER **Example**: 5 **Description**: ID of server to delete
Optional Parameters	None
Example URL	/api/v1/api.php?target=dnsServer&action=delete&id=5

update	
URL	/api/v1/api.php?target=dnsServer&action=update
Description	Updates an existing DNS Server with new information.

Returns	**Examples:**
	SUCCESSFUL: {"success":1,"message":"Update Successful."}
	ERROR: {"success":0, "message":"error message"}

Required Parameters

Name	**Type**	**Example**	**Description**
id	INTEGER	5	ID of server
server	STRING	dns.yourdomain.com	IP or FQDN of the DNS Server
SOA	STRING	ns1.6connect.com hostmaster.6connect.com	Server of Authority record for DNS server
transferType	STRING	SCP	Protocol used for transfer of DNS zones and records. Valid settings include SCP, PowerDNS, Secure64, Secure64Signer

Optional Parameters

These optional parameters vary according to what type of server is being configured.

Name	**Type**	**Example**	**Description**
active	INTEGER	0	Values 0 or 1 only, sets the server to inactive on 0 value
customerName	STRING	/tmp/zones	Customer Name
dbDatabaseName	STRING	pdns_1	DB name for pDNS servers with MySQL powerDNSBacke type
dbPassword	STRING	somepass	DB password for pDNS servers with MySQL powerDNSBacke type
dbPort	INTEGER	3306	Port for for pDNS servers with MySQL powerDNSBacke type

dbUsername	STRING	someuser	DB username for pDNS servers with MySQL powerDNSBacken type
displayName	STRING	Primary NS	The name displayed representing the DNS server, can be the same as server or different
DNSSECContact	STRING	joeuser	For use with Dyn dns service
enable_views	INTEGER	1	Whether or not Views are enabled. Valid values are '1' for enable or '0' for do not enable
masterid	INTEGER	53	Master server ID. If a server is a slave, masterid points to its master.
namedConfPath	STRING	/tmp	The path to the zone files used within the named.conf file.
password	STRING	password1	Login password for Server
port	INTEGER	22	Port for ssh or scp access to server
powerDNSBackend	STRING	Bind or MySQL	pDNS server backend type
postCommand	STRING	/path/to/stuff/postcommand	Command to execute after zone transfer
preCommand	STRING	/path/to/stuff/precommand	Command to execute before zone transfer
remoteDirectory	STRING	/tmp/zones	Zone Directory on Server

<table>
<tr><td></td><td><table>
<tr><td>serverType</td><td>STRING</td><td>Master</td><td>Values are 'Master' or 'Slave' only</td></tr>
<tr><td>username</td><td>STRING</td><td>bobuser</td><td>Login name for Server</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api.php?target=dnsServer&action=update&id=74&transferType=SCP&s
dns.yourdomain.com
&SOA=ns1.6connect.com.+hostmaster.6connect.com.</td></tr>
</table>

<table>
<tr><th colspan="2">transferByServer</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=dnsServer&action=transferByServer</td></tr>
<tr><td>Description</td><td>Performs a full zone push on a DNS Server, executing pre and post commands, transferring files, and restarting services.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Transfer Successful."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td><table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>push</td><td>INTEGER</td><td>1</td><td>The ID of the server to push zones to</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=dnsServer&action=transferByServer&push=1</td></tr>
</table>

<table>
<tr><th colspan="2">transferSingle</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=dnsServer&action=transferSingle</td></tr>
<tr><td>Description</td><td>Transfers a single Zone file to all its associated DNS Servers, along with updated server configurations.
Performs pre and post commands on the target servers, transfers the zone file(s), and restarts services.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Updated Zone: $name.zone on $server via SCP"}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>zoneid</td><td>INTEGER</td><td>35</td><td>The ID of the zone to push</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=dnsServer&action=transferSingle&zoneid=35</td></tr>
</table>

DNS Zone Control

<table>
<tr><th colspan="2">get</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=zone&action=get</td></tr>
<tr><td>Description</td><td>Accepts search criteria to retrieve a list of all matching DNS Zones and associated Records.
Search can be performed on any combination of Zone and Record attributes.</td></tr>
<tr><td>Returns</td><td>
<b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Search Successful.","data":[
{"zoneId":"932","zoneName":"185.1
"zoneSerial":"2013040302","zoneR
"zoneTags":null,"zoneTTL":"28800"
"recordHost":
"185.160.209.inaddr.arpa.","record
"recordOrdering":"1",
"recordErrors":null,"assetId":"0","us
]}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<b>Data Detail:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>zoneId</td><td>INTEGER</td><td>The Id of the Zone entry. A single Zone entry might have multiple Records.</td></tr>
<tr><td>zoneName</td><td>STRING</td><td>The Zone name.</td></tr>
<tr><td>zoneResourceId</td><td>INTEGER</td><td>The resource Id associated with this Zone.</td></tr>
<tr><td>zoneSerial</td><td>INTEGER</td><td>Zone Serial.</td></tr>
<tr><td>zoneRefresh</td><td>INTEGER</td><td>Zone Refresh.</td></tr>
</table>
</td></tr>
</table>

zoneRetry	INTEGER	Zone Retry.
zoneExpire	INTEGER	Zone Expire.
zoneMinimum	INTEGER	Zone Minimum.
zoneSOA	STRING	Zone SOA.
zoneTags	STRING	All the tags associated with this Zone.
zoneTTL	STRING	Zone TTL.
zoneEnableDNSSEC	BOOL	Whether or not DNSSEC is enabled for this Zone.
zoneAutoCheck	BOOL	Whether or not this zone is configured to be automatically validated on load/edit.
recordId	INTEGER	The Id of this Record Entry. It is always included with its parent Zone.
recordHost	STRING	The Hostname of this Record.
recordType	STRING	The Record Type (MX,NS,A,PTR,etc)
recordValue	STRING	The Value of this Record.
recordDescription	STRING	A short description of this Record.
recordTTL	STRING	The TTL of this Record.
recordOrdering	INTEGER	The numerical order in which the record appears in the zone.
recordErrors	STRING	A string containing any detected problems with this record
userCanCreate	BOOL	Whether or not the user has DNS CREATE permissions on this zone's resource
userCanUpdate	BOOL	Whether or not the user has DNS UPDATE permissions on this zone's resource

<table>
<tr><td></td><td>
<table>
<tr><td>userCanDelete</td><td>BOOl</td><td>Whether or not the user has DNS DELETE permissions on this zone's resource</td></tr>
<tr><td>unpagedRows</td><td>INTEGER</td><td>If pagination is used, this value will contain a total count of records had the pagination not been used.</td></tr>
</table>
</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>likeFlag</td><td>BOOL</td><td>1</td><td>When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.</td></tr>
<tr><td>generalFlag</td><td>BOOL</td><td>1</td><td>When 1, searches over the provided parameters using OR. If 0 or omitted, uses AND.</td></tr>
<tr><td>selectCount</td><td>INTEGER</td><td>30</td><td>When supplied only returns the first X entries</td></tr>
<tr><td>selectOffset</td><td>INTEGER</td><td>10</td><td>When supplied, only returns entries after record X</td></tr>
<tr><td>sortArray</td><td>JSON</td><td>{"zoneName":"desc","zoneMask":"a</td><td>A JSON-encoded object containing a list of columns to sort on and the direction in which to sort. Any API variable may be used for sorting. Valid sort directions are ASC and DESC.</td></tr>
</table>
</td></tr>
</table>

Name	Type	Example	Description
zoneId	INTEGER	123	The Zone Id to search for.
zoneName	STRING	foo	The Zone Name to search for.
zoneResourceId	INTEGER	5	The Resource Id to search for.
zoneSerial	INTEGER	2012033001	The Zone Serial to search for.
zoneRefresh	INTEGER	36000	The Zone Refresh to search for.
zoneRetry	INTEGER	800	The Zone Retry to search for.
zoneExpire	INTEGER	6090000	The Zone Expire to search for.
zoneMinimum	INTEGER	10	The Zone Minimum to search for.
zoneSOA	STRING	200	The Zone SOA to search for.
zoneTags	STRING	client,production	Zone Tags to search for.
zoneTTL	INTEGER	3600	The Zone TTL to search for.
zoneEnableDNSSEC	INTEGER	1	Search based on DNSSEC settings.
recordId	INTEGER	123	The Record Id to search for.
recordZoneId	INTEGER	123	The parent Zone to search for.
recordHost	STRING	@	The Record Host to search for.
recordType	STRING	NS	The Record Type to search for.
recordValue	STRING	ns1.dns.6connect.com.	The Record Value to search for.

recordDescription	STRING	Description	Search based on Record Description.
recordTTL	STRING	3600	The Record TTL to search for.

Example URL	/api/v1/api.php?target=zone&action=get&zoneId=123

search

URL	/api/v1/api.php?target=zone&action=search
Description	Accepts search criteria to retrieve a list of all matching DNS Zones but NO associated Records. Search can be performed on any combination of Zone and Record attributes.
Returns	**Examples:**

SUCCESSFUL:	{"success":1,"message":"Search Successful.","data":[{"zoneId":"123"
ERROR:	{"success":0, "message":"error message"}

Data Detail:

Name	Type	Description
zoneId	INTEGER	The Id of the Zone entry. A single Zone entry might have multiple Records.
zoneName	STRING	The Zone name.
zoneResourceId	INTEGER	The resource Id associated with this Zone.
zoneSerial	INTEGER	Zone Serial.
zoneRefresh	INTEGER	Zone Refresh.
zoneRetry	INTEGER	Zone Retry.
zoneExpire	INTEGER	Zone Expire.
zoneMinimum	INTEGER	Zone Minimum.
zoneSOA	STRING	Zone SOA.
zoneTags	STRING	All the tags associated with this Zone.
zoneTTL	STRING	Zone TTL.

<table>
<tr><td></td><td>
<table>
<tr><td>zoneEnableDNSSEC</td><td>BOOL</td><td>Whether or not DNSSEC is enabled for this Zone.</td></tr>
<tr><td>zoneAutoCheck</td><td>BOOL</td><td>Whether or not this zone is configured to be automatically validated on load/edit.</td></tr>
<tr><td>recordCount</td><td>INTEGER</td><td>How many records are associated with this zone.</td></tr>
<tr><td>userCanCreate</td><td>BOOL</td><td>Whether or not the user has DNS CREATE permissions on this zone's resource</td></tr>
<tr><td>userCanUpdate</td><td>BOOL</td><td>Whether or not the user has DNS UPDATE permissions on this zone's resource</td></tr>
<tr><td>userCanDelete</td><td>BOOl</td><td>Whether or not the user has DNS DELETE permissions on this zone's resource</td></tr>
<tr><td>unpagedRows</td><td>INTEGER</td><td>If pagination is used, this value will contain a total count of records had the pagination not been used.</td></tr>
</table>
</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td></td></tr>
</table>

Name	Type	Example	Description
likeFlag	BOOL	1	When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.
generalFlag	BOOL	1	When 1, searches over the provided paramenters using OR. If 0 or omitted, uses AND.
selectCount	INTEGER	30	When supplied only returns the first X entries
selectOffset	INTEGER	10	When supplied, only returns entries after record X
sortArray	JSON	{"zoneName":"desc","zoneMask":"a	A JSON-encoded object containing a list of columns to sort on and the direction in which to sort. Any API variable may be used for sorting. Valid sort directions are ASC and DESC.

Name	Type	Example	Description
zoneId	INTEGER	123	The Zone Id to search for.
zoneName	STRING	foo	The Zone Name to search for.
zoneResourceId	INTEGER	5	The Resource Id to search for.
zoneSerial	INTEGER	2012033001	The Zone Serial to search for.

zoneRefresh	INTEGER	36000	The Zone Refresh to search for.
zoneRetry	INTEGER	800	The Zone Retry to search for.
zoneExpire	INTEGER	6090000	The Zone Expire to search for.
zoneMinimum	INTEGER	10	The Zone Minimum to search for.
zoneSOA	STRING	200	The Zone SOA to search for.
zoneTags	STRING	client,production	Zone Tags to search for.
zoneTTL	INTEGER	3600	The Zone TTL to search for.
zoneEnableDNSSEC	INTEGER	1	Search based on DNSSEC settings.
recordId	INTEGER	123	The Record Id to search for.
recordZoneId	INTEGER	123	The parent Zone to search for.
recordHost	STRING	@	The Record Host to search for.
recordType	STRING	NS	The Record Type to search for.
recordValue	STRING	ns1.dns.6connect.com.	The Record Value to search for.
recordDescription	STRING	Description	Search based on Record Description.
recordTTL	STRING	3600	The Record TTL to search for.

Example URL	/api/v1/api.php?target=zone&action=search&zoneId=123

update

URL	/api/v1/api.php?target=zone&action=update

<table>
<tr><td>Description</td><td>First performs a search based on the submitted Zone and Record criteria, then performs an Update across those entries based on new values.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Update Successful."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>likeFlag</td><td>BOOL</td><td>1</td><td>When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.</td></tr>
<tr><td>generalFlag</td><td>BOOL</td><td>1</td><td>When 1, searches over the provided parameters using OR. If 0 or omitted, uses AND.</td></tr>
</table>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>searchZoneId</td><td>INTEGER</td><td>123</td><td>The Zone Id to search for.</td></tr>
<tr><td>searchZoneName</td><td>STRING</td><td>foo</td><td>The Zone Name to search for.</td></tr>
<tr><td>searchZoneResourceId</td><td>INTEGER</td><td>5</td><td>The Resource Id to search for.</td></tr>
<tr><td>searchZoneSerial</td><td>INTEGER</td><td>2012033001</td><td>The Zone Serial to search for.</td></tr>
<tr><td>searchZoneRefresh</td><td>INTEGER</td><td>36000</td><td>The Zone Refresh to search for.</td></tr>
<tr><td>searchZoneRetry</td><td>INTEGER</td><td>800</td><td>The Zone Retry to search for.</td></tr>
</table></td></tr>
</table>

searchZoneExpire	INTEGER	6090000	The Zone Expire to search for.
searchZoneMinimum	INTEGER	10	The Zone Minimum to search for.
searchZoneSOA	STRING	200	The Zone SOA to search for.
searchZoneTags	STRING	client,production	Zone Tags to search for.
searchZoneTTL	INTEGER	3600	The Zone TTL to search for.
searchZoneEnableDNSSEC	INTEGER	1	Search based on DNSSEC settings.
searchRecordId	INTEGER	123	The Record Id to search for.
searchRecordHost	STRING	@	The Record Host to search for.
searchRecordType	STRING	NS	The Record Type to search for.
searchRecordValue	STRING	ns1.dns.6connect.com.	The Record Value to search for.
searchRecordDescription	STRING	Description	Search based on Record Description.
searchRecordTTL	STRING	3600	The Record TTL to search for.

Name	Type	Example	Description
updateZoneName	STRING	foo	The Zone name to replace into the searched rows.
updateZoneResourceId	INTEGER	5	The Resource Id to replace into the searched rows.

updateZoneSerial	INTEGER	2012033001	The Zone Serial to replace into the searched rows.
updateZoneRefresh	INTEGER	36000	The Zone Refresh to replace into the searched rows.
updateZoneRetry	INTEGER	800	The Zone Retry to replace into the searched rows..
updateZoneExpire	INTEGER	6090000	The Zone Expire to replace into the searched rows.
updateZoneMinimum	INTEGER	10	The Zone Minimum to replace into the searched rows.
updateZoneSOA	STRING	200	The Zone SOA to replace into the searched rows.
updateZoneTags	STRING	client,production	Zone Tags to replace into the searched rows.
updateZoneTTL	INTEGER	3600	The Zone TTL to replace into the searched rows.
updateZoneEnableDNSSEC	INTEGER	1	Update DNSSEC Settings.
updateRecordHost	STRING	@	The Record Host to replace into the searched rows.
updateRecordType	STRING	NS	The Record Type to replace into the searched rows.

updateRecordValue	STRING	ns1.dns.6connect.com.	The Record Value to replace into the searched rows.
updateRecordDescription	STRING	Description	Update Record Descriptions.
updateRecordTTL	STRING	3600	The Record TTL to replace into the searched rows.
updateZoneAutoCheck	BOOL	1	Whether or not this zone is configured to be automatically validated on load/edit.

Name	Type	Example	Description
recordZoneId	INTEGER	123	The parent zone ID

Example URL	/api/v1/api.php?target=zone&action=update&searchZoneId=123&updateZoneExpire=6090000

add	
URL	/api/v1/api.php?target=zone&action=add
Description	Adds a new DNS Zone.
Returns	**Examples:**

SUCCESSFUL:	{"success":1,"message":"Add Successful.","data":123}
ERROR:	{"success":0, "message":"error message"}

Data Detail:

Name	Type	Description
data	INTEGER	The Id of the new Zone entry.

<table>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>zoneName</td><td>STRING</td><td>254.221.67.in-addr.arpa</td><td>The name for the new Zone.</td></tr>
<tr><td>zoneResourceId</td><td>STRING</td><td>123</td><td>Resource Id for the new Zone.</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td></td></tr>
</table>

Name	Type	Example	Description
likeFlag	BOOL	1	When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.
zoneIpver	STRING	IPv6	The IP Version.
zoneLocalSigning	BOOL	1	Whether or not this zone should be signed by the ProVision server when DNSSEC is enabled. If set to false, ProVision will deliver the zone unsigned to the DNS server and the signing / updating process should be triggered by the post-push command
zoneSerial	INTEGER	2012033001	Serial for the new Zone.
zoneRefresh	INTEGER	36000	Refresh for the new Zone.
zoneRetry	INTEGER	800	Retry for the new Zone.
zoneExpire	INTEGER	6090000	Expire for the new Zone.
zoneMinimum	INTEGER	10	Minimum for the new Zone.
zoneSOA	STRING	200	SOA for the new Zone.
zoneTags	STRING	client,production	Tags for the new Zone.
zoneTTL	STRING	3600	TTL for the new Zone.
zoneEnableDNSSEC	INTEGER	1	Whether or not this new zone uses DNSSEC.

<table>
<tr><td></td><td></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zone&action=add&zoneName=254.221.67.in-addr.arpa&zoneResourceId=123&zoneSerial=2012033001</td></tr>
</table>

<table>
<tr><th colspan="2">delete</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=zone&action=delete</td></tr>
<tr><td>Description</td><td>Performs a search over the Zones and Records dataset and deletes all found Zones, plus all associated Records of those Zones.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Zones and Associated Records Deleted."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>No specific parameter is required, however, one or more optional parameters must be used for a successful return</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>deleteZoneId</td><td>INTEGER</td><td>123</td><td>The Zone Id to search for.</td></tr>
<tr><td>deleteZoneName</td><td>STRING</td><td>foo</td><td>The Zone Name to search for.</td></tr>
<tr><td>deleteZoneResourceId</td><td>INTEGER</td><td>5</td><td>The Resource Id to search for.</td></tr>
<tr><td>deleteZoneSerial</td><td>INTEGER</td><td>2012033001</td><td>The Zone Serial to search for.</td></tr>
<tr><td>deleteZoneRefresh</td><td>INTEGER</td><td>36000</td><td>The Zone Refresh to search for.</td></tr>
<tr><td>deleteZoneRetry</td><td>INTEGER</td><td>800</td><td>The Zone Retry to search for.</td></tr>
<tr><td>deleteZoneExpire</td><td>INTEGER</td><td>6090000</td><td>The Zone Expire to search for.</td></tr>
<tr><td>deleteZoneMinimum</td><td>INTEGER</td><td>10</td><td>The Zone Minimum to search for.</td></tr>
<tr><td>deleteZoneSOA</td><td>STRING</td><td>200</td><td>The Zone SOA to search for.</td></tr>
</table></td></tr>
</table>

deleteZoneTags	STRING	client,production	Zone Tags to search for.
deleteZoneTTL	INTEGER	3600	The Zone TTL to search for.
deleteZoneEnableDNSSEC	INTEGER	1	Search based on DNSSEC settings.
deleteRecordId	INTEGER	123	The Record Id to search for.
deleteRecordHost	STRING	@	The Record Host to search for.
deleteRecordType	STRING	NS	The Record Type to search for.
deleteRecordValue	STRING	ns1.dns.6connect.com.	The Record Value to search for.
deleteRecordDescription	STRING	Description	Search based on Record Description.
deleteRecordTTL	STRING	3600	The Record TTL to search for.
deleteRecordZoneId	INTEGER	123	The parent zone ID

Example URL	/api/v1/api.php?target=zone&action=delete&deleteZoneId=123

getRecordTypes

URL	/api/v1/api.php?target=zone&action=getRecordTypes
Description	Returns a list of all Record Types allowed by the system.
Returns	**Examples:**

SUCCESSFUL:	{"success":1,"message":"Search Successful.","data":[{"recordType":"
ERROR:	{"success":0, "message":"error message"}

Data Detail:

Name	Type	Description
recordType	STRING	A Record Type

Required Parameters	None

Optional Parameters	None
Example URL	/api/v1/api.php?target=zone&action=getRecordTypes

getFile

URL	/api/v1/api.php?target=zone&action=getFile&zoneId=50
Description	Returns a fully written zone file. If one does not exist, returns false.
Returns	A Zone File
Required Parameters	

Name	Type	Example	Description
zoneId	INTEGER	50	The Id of the zone to retrieve.
format	ENUMERATED	'html' or ''	If html, the zone file will be formatted for display via a web browser. If blank or omitted, the zone file will be formatted for display in a file system.
unsigned	BOOL	1	For a DNSSEC-enabled zone, determines whether or not the system retrieves the signed or unsigned zone file. Ignored for non-DNSSEC zones.

Optional Parameters	None
Example URL	/api/v1/api.php?target=zone&action=getFile&zoneId=50&zoneId=50&format=html&unsigned=1

getDSFile

URL	/api/v1/api.php?target=zone&action=getDSFile
Description	Returns a fully written zone DS key file. If one does not exist, returns false.
Returns	A Zone DS Key File

<table>
<tr><td>Required Parameters</td><td><table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>zoneId</td><td>INTEGER</td><td>50</td><td>The Id of the zone whose DS keys are to be retrieved.</td></tr></table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zone&action=getDSFile&zoneId=50</td></tr>
</table>

checkZone

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=zone&action=checkZone</td></tr>
<tr><td>Description</td><td>Runs a zone file through Named checkzone</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table><tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"No errors found."}</td></tr><tr><td>ERROR:</td><td>{"success":0,"message":"21: ignoring out-of-zone data (veggie.com) 22: ignoring out-of-zone data (veggie.com) dns_rdata_fromtext: 23: near '2001:db8:': bad IPv6 address dns_rdata_fromtext: 24: near '1.2.3.': bad dotted quad dns_rdata_fromtext: 25: near '2001::db8::\/32': bad IPv6 address "}</td></tr></table></td></tr>
<tr><td>Required Parameters</td><td><table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>zoneId</td><td>INTEGER</td><td>50</td><td>The Id of the zone to check.</td></tr></table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zone&action=checkZone&zoneId=50</td></tr>
</table>

getArchivedZone

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=zone&action=getArchivedZone</td></tr>
<tr><td>Description</td><td>Searches for all archived versions of the a zone. Zones are archived every time changes are pushed to their DNS Server.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b></td></tr>
</table>

SUCCESSFUL:	{"success":1,"message":"Search Successful.","data":[{"zoneArchiveI :"2768","zoneId":"1227", "zoneArchiveTimestamp":"1375298 "zoneArchiveFingerprint":"d060e59 "zoneMask":null,"zoneSerial": "2013073105","zoneRefresh":"1440 "zoneMinimum":"3600", "zoneSOA":null,"zoneTags":null,"zo "zoneResourceId":"1013","zonePre]}
ERROR:	{"success":0, "message":"error message"}

Data Detail:

Name	Type	Description
zoneId	INTEGER	The Id of the Zone entry to find archived versions of.
zoneArchiveId	INTEGER	The ID of the Archive Entry
zoneArchiveTimestamp	INTEGER	A timestamp marking when this zone was archived.
zoneArchiveFingerprint	STRING	A hash value identifying this zone. Used for comparing versions.
zoneName	INTEGER	Zone Name.
zoneSerial	INTEGER	Zone Serial.
zoneRefresh	INTEGER	Zone Refresh.
zoneRetry	INTEGER	Zone Retry.
zoneExpire	INTEGER	Zone Expire.
zoneMinimum	INTEGER	Zone Minimum.
zoneSOA	STRING	Zone SOA.
zoneTags	STRING	Zone Tags.
zoneTTL	INTEGER	Zone TTL.
zoneEnableDNSSEC	STRING	Whether or not this version had DNSSEC enabled.
zoneResourceId	STRING	Zone Resource ID
zonePreviousViewLinkage	JSON	A JSON-encoded array of views this zone was linked to.

<table>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>zoneId</td><td>INTEGER</td><td>123</td><td>The Zone Id to search for.</td></tr>
<tr><td>zoneArchiveId</td><td>INTEGER</td><td>123</td><td>The Zone Archive Id</td></tr>
<tr><td>zoneArchiveTimestamp</td><td>INTEGER</td><td>2012033001</td><td>The Zone Archive Timestamp</td></tr>
<tr><td>fetchArchiveFile</td><td>BOOL</td><td>1</td><td>Whether or not to return the full Zone file with the result set..</td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zone&action=getArchivedZone&zoneId=123</td></tr>
</table>

DNS Record Control

<table>
<tr><th colspan="2">get</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=record&action=get</td></tr>
<tr><td>Description</td><td>Accepts search criteria to retrieve a list of all matching DNS Records. Search can be performed on any combination of Zone and Record attributes.</td></tr>
</table>

<table>
<tr>
<td>Returns</td>
<td>
<p><b>Examples:</b></p>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Search Successful.","data":[{"recordId":"30</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
<p><b>Data Detail:</b></p>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>recordId</td><td>INTEGER</td><td>The ID of this Record Entry. It is always included with its parent Zone.</td></tr>
<tr><td>recordZoneId</td><td>INTEGER</td><td>The ID of this Record's parent Zone.</td></tr>
<tr><td>recordHost</td><td>STRING</td><td>The Hostname of this Record.</td></tr>
<tr><td>recordType</td><td>STRING</td><td>The Record Type (MX,NS,A,PTR,etc)</td></tr>
<tr><td>recordValue</td><td>STRING</td><td>The Value of this Record.</td></tr>
<tr><td>recordDescription</td><td>STRING</td><td>A short description of this Record.</td></tr>
<tr><td>recordTTL</td><td>STRING</td><td>The TTL of this Record.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Required Parameters</td>
<td>None</td>
</tr>
<tr>
<td>Optional Parameters</td>
<td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>likeFlag</td><td>BOOL</td><td>1</td><td>When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.</td></tr>
<tr><td>selectCount</td><td>INTEGER</td><td>30</td><td>When supplied only returns the first X entries</td></tr>
<tr><td>selectOffset</td><td>INTEGER</td><td>10</td><td>When supplied, only returns entries after record X</td></tr>
</table>
</td>
</tr>
</table>

Name	Type	Example	Description
recordId	INTEGER	123	The Record ID to search for.
recordZoneId	INTEGER	123	The parent Zone to search for.
recordHost	STRING	@	The Record Host to search for.
recordType	STRING	NS	The Record Type to search for.
recordValue	STRING	ns1.dns.6connect.com.	The Record Value to search for.
recordDescription	STRING	Description	Search based on Record Description.
recordTTL	STRING	3600	The Record TTL to search for.

Name	Type	Example	Description
zoneId	INTEGER	123	The Zone Id to search for.
zoneName	STRING	foo	The Zone Name to search for.
zoneResourceId	INTEGER	5	The Resource Id to search for.
zoneCustName	STRING	foo	The Customer Name to search for.
zoneIpver	STRING	IPv6	The IP Version to search for.
zoneSerial	INTEGER	2012033001	The Zone Serial to search for.
zoneRefresh	INTEGER	36000	The Zone Refresh to search for.
zoneRetry	INTEGER	800	The Zone Retry to search for.
zoneExpire	INTEGER	6090000	The Zone Expire to search for.
zoneMinimum	INTEGER	10	The Zone Minimum to search for.
zoneSOA	STRING	200	The Zone SOA to search for.
zoneTags	STRING	client,production	Zone Tags to search for.
zoneTTL	INTEGER	3600	The Zone TTL to search for.
zoneEnableDNSSEC	INTEGER	1	Search based on DNSSEC settings.

Example URL	/api/v1/api.php?target=record&action=get&selectCount=30&zoneId=123

update

URL	/api/v1/api.php?target=record&action=update

<table>
<tr><td>Description</td><td>First performs a search based on the submitted Zone and Record criteria, then performs an Update across those entries based on new values.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Update Successful."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>likeFlag</td><td>BOOL</td><td>1</td><td>When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.</td></tr>
<tr><td>generalFlag</td><td>BOOL</td><td>1</td><td>When 1, searches over the provided parameters using OR. If 0 or omitted, uses AND.</td></tr>
</table>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>searchZoneId</td><td>INTEGER</td><td>123</td><td>The Zone ID to search for.</td></tr>
<tr><td>searchZoneName</td><td>STRING</td><td>foo</td><td>The Zone Name to search for.</td></tr>
<tr><td>searchZoneCustId</td><td>INTEGER</td><td>5</td><td>The Customer ID to search for.</td></tr>
<tr><td>searchZoneSerial</td><td>INTEGER</td><td>2012033001</td><td>The Zone Serial to search for.</td></tr>
<tr><td>searchZoneRefresh</td><td>INTEGER</td><td>36000</td><td>The Zone Refresh to search for.</td></tr>
<tr><td>searchZoneRetry</td><td>INTEGER</td><td>800</td><td>The Zone Retry to search for.</td></tr>
</table></td></tr>
</table>

searchZoneExpire	INTEGER	6090000	The Zone Expire to search for.
searchZoneMinimum	INTEGER	10	The Zone Minimum to search for.
searchZoneSOA	STRING	200	The Zone SOA to search for.
searchZoneTags	STRING	client,production	Zone Tags to search for.
searchZoneTTL	INTEGER	3600	The Zone TTL to search for.
searchZoneEnableDNSSEC	INTEGER	1	Search based on DNSSEC settings.
searchRecordId	INTEGER	123	The Record ID to search for.
searchRecordHost	STRING	@	The Record Host to search for.
searchRecordType	STRING	NS	The Record Type to search for.
searchRecordValue	STRING	ns1.dns.6connect.com.	The Record Value to search for.
searchRecordDescription	STRING	Description	Search based on Record Description.
searchRecordTTL	STRING	3600	The Record TTL to search for.
searchZoneResourceId	INTEGER	5	The Resource Id to search for.
searchRecordZoneId	INTEGER	123	The Zone ID of the Record to search for.

Name	Type	Example	Description
updateZoneName	STRING	foo	The Zone name to replace into the searched rows.

updateZoneSerial	INTEGER	2012033001	The Zone Serial to replace into the searched rows.
updateZoneRefresh	INTEGER	36000	The Zone Refresh to replace into the searched rows.
updateZoneRetry	INTEGER	800	The Zone Retry to replace into the searched rows..
updateZoneExpire	INTEGER	6090000	The Zone Expire to replace into the searched rows.
updateZoneMinimum	INTEGER	10	The Zone Minimum to replace into the searched rows.
updateZoneSOA	STRING	200	The Zone SOA to replace into the searched rows.
updateZoneTags	STRING	client,production	Zone Tags to replace into the searched rows.
updateZoneTTL	INTEGER	3600	The Zone TTL to replace into the searched rows.
updateZoneEnableDNSSEC	INTEGER	1	Update DNSSEC Settings.
updateRecordHost	STRING	@	The Record Host to replace into the searched rows.
updateRecordType	STRING	NS	The Record Type to replace into the searched rows.

updateRecordValue	STRING	ns1.dns.6connect.com.	The Record Value to replace into the searched rows.
updateRecordDescription	STRING	Description	Update Record Descriptions.
updateRecordTTL	STRING	3600	The Record TTL to replace into the searched rows.
updateZoneResourceId	INTEGER	5	The Resource Id to replace into the searched rows.
updateZoneAutoCheck	BOOL	1	Whether or not this zone is configured to be automatically validated on load/edit.

Example URL	/api/v1/api.php?target=record&action=update&searchZoneId=123&searchZoneTags=client&updateZoneTTL=3600

add

URL	/api/v1/api.php?target=record&action=add
Description	Adds a new Record to a supplied Zone.
Returns	**Examples:**

SUCCESSFUL:	{"success":1,"message":"Add Successful.","data":123}
ERROR:	{"success":0, "message":"error message"}

Data Detail:

Name	Type	Description
data	INTEGER	The ID of the new Record entry.

<table>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>newRecordZoneId</td><td>INTEGER</td><td>123</td><td>The Zone ID of the new Record.</td></tr>
<tr><td>newRecordHost</td><td>STRING</td><td>@</td><td>New Host Name.</td></tr>
<tr><td>newRecordType</td><td>STRING</td><td>PTR</td><td>New Record Type.</td></tr>
<tr><td>newRecordValue*</td><td>STRING</td><td>123</td><td>New Record Value.</td></tr>
<tr><td colspan="4">*newRecordValue required only for certain Record Types</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>likeFlag</td><td>BOOL</td><td>1</td><td>When 1, string searches are done via LIKE with wildcards at both ends. When 0, strict comparison is used.</td></tr>
<tr><td>newRecordDescription</td><td>STRING</td><td>Description.</td><td>Notes for the Record.</td></tr>
<tr><td>newRecordTTL</td><td>INTEGER</td><td>3600</td><td>Record TTL.</td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=record&action=add&newRecordZoneId=123&newRecordHost=@host&newRecordType=PTR&newRecordTTL=3600</td></tr>
</table>

delete

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=record&action=delete</td></tr>
<tr><td>Description</td><td>Performs a search over the Zones and Records dataset and deletes all found Records, but leaves their parent Zones intact.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Deletion Successful."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>
</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
</table>
</td></tr>
</table>

deleteZoneId	INTEGER	123	The Zone ID to search for.
deleteZoneName	STRING	foo	The Zone Name to search for.
deleteZoneCustId	INTEGER	5	The Customer ID to search for.
deleteZoneIpver	STRING	IPv6	The IP Version to search for.
deleteZoneSerial	INTEGER	2012033001	The Zone Serial to search for.
deleteZoneRefresh	INTEGER	36000	The Zone Refresh to search for.
deleteZoneRetry	INTEGER	800	The Zone Retry to search for.
deleteZoneExpire	INTEGER	6090000	The Zone Expire to search for.
deleteZoneMinimum	INTEGER	10	The Zone Minimum to search for.
deleteZoneSOA	STRING	200	The Zone SOA to search for.
deleteZoneTags	STRING	client,production	Zone Tags to search for.
deleteZoneTTL	INTEGER	3600	The Zone TTL to search for.
deleteZoneEnableDNSSEC	INTEGER	1	Search based on DNSSEC settings.
deleteRecordId	INTEGER	123	The Record ID to search for.
deleteRecordHost	STRING	@	The Record Host to search for.
deleteRecordType	STRING	NS	The Record Type to search for.
deleteRecordValue	STRING	ns1.dns.6connect.com.	The Record Value to search for.
deleteRecordDescription	STRING	Description	Search based on Record Description.

<table>
<tr><td></td><td><table>
<tr><td>deleteRecordTTL</td><td>STRING</td><td>3600</td><td>The Record TTL to search for.</td></tr>
<tr><td>deleteZoneResourceId</td><td>INTEGER</td><td>5</td><td>The Resource Id to search for.</td></tr>
<tr><td>deleteZoneCustName</td><td>STRING</td><td>foo</td><td>The Customer Name to search for.</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=record&action=delete&deleteZoneName=foo</td></tr>
</table>

<table>
<tr><th colspan="2">switch</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=record&action=switch</td></tr>
<tr><td>Description</td><td>Switches the order of two record entries.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"Record Moved."}</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td><table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>moveWhichId</td><td>INTEGER</td><td>123</td><td>The Record Id to be moved.</td></tr>
<tr><td>moveAfterId</td><td>INTEGER</td><td>42</td><td>The Id of the Record the first Record is to be moved after.</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=record&action=switch&moveWhichId=123&moveAfterId=42</td></tr>
</table>

Server-Zone Linkage

get	
URL	/api/v1/api.php?target=zoneLinkage&action=get
Description	Searches for Server-Zone Linkages. If no search parameters are supplied, all linkages are returned.

<table>
<tr><td>Returns</td><td>

Examples:

<table>
<tr><td>SUCCESSFUL:</td><td>{"success":1,"message":"2 rows retrieved.","data":[{"id":"285","zoneI</td></tr>
<tr><td>ERROR:</td><td>{"success":0, "message":"error message"}</td></tr>
</table>

Data Detail:

<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>The Linkage Id.</td></tr>
<tr><td>zoneId</td><td>INTEGER</td><td>The ZoneId involved in this link.</td></tr>
<tr><td>serverId</td><td>INTEGER</td><td>The ServerId involved in this link.</td></tr>
<tr><td>serverName</td><td>STRING</td><td>The server name</td></tr>
<tr><td>serverType</td><td>STRING</td><td>The server transfer type</td></tr>
<tr><td>serverMasterType</td><td>STRING</td><td>Whether this server is a master or a slave.</td></tr>
<tr><td>zoneName</td><td>STRING</td><td>The zone name</td></tr>
<tr><td>resourceId</td><td>INTEGER</td><td>The Resource Id the Zone is attached to.</td></tr>
</table>

</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>

<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>15</td><td>Fetches the linkage with the matching id.</td></tr>
<tr><td>serverId</td><td>INTEGER</td><td>15</td><td>Fetches all linkages with the matching serverId.</td></tr>
<tr><td>zoneId</td><td>INTEGER</td><td>15</td><td>Fetches all linkages with the matching zoneId.</td></tr>
</table>

</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zoneLinkage&action=get&id=15</td></tr>
</table>

add

URL	/api/v1/api.php?target=zoneLinkage&action=add
Description	Adds a new link between a DNS Server and a Zone

Returns	**Examples:**
	SUCCESSFUL: {"success":1,"message":"Link Added."}
	ERROR: {"success":0, "message":"error message"}

Required Parameters	see table below
Optional Parameters	None
Example URL	/api/v1/api.php?target=zoneLinkage&action=add&serverId=16&zoneId=105&serverSlave=0

Name	Type	Example	Description
serverId	INTEGER	16	The DNS Server Id.
zoneId	INTEGER	105	The Zone Id.
serverSlave	BOOL	1	Whether or not this zone is a master or a slave on the linked server. Values are: 1 for slave, 0 for master.

delete

URL	/api/v1/api.php?target=zoneLinkage&action=delete
Description	Deletes a link between a DNS Server and a Zone

Returns	**Examples:**
	SUCCESSFUL: {"success":1,"message":"Link Deleted."}
	ERROR: {"success":0, "message":"error message"}

Required Parameters	None

<table>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>15</td><td>Fetches the linkage with the matching id.</td></tr>
<tr><td>serverId</td><td>INTEGER</td><td>15</td><td>Fetches all linkages with the matching serverId.</td></tr>
<tr><td>zoneId</td><td>INTEGER</td><td>15</td><td>Fetches all linkages with the matching zoneId.</td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=zoneLinkage&action=delete</td></tr>
</table>

Name Server Control

<table>
<tr><th colspan="2">get</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=nameServer&action=get</td></tr>
<tr><td>Description</td><td>Fetches a list of all stored Name Servers</td></tr>
<tr><td>Returns</td><td>
<b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td><i>{"success":1,"message":"Fetch Sucessful.","data":[{"id":"1","namese</i></td></tr>
<tr><td>ERROR:</td><td><i>{"success":0, "message":"error message"}</i></td></tr>
</table>
<b>Data Detail:</b>
<table>
<tr><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>Server ID</td></tr>
<tr><td>nameserver</td><td>STRING</td><td>Server Name</td></tr>
<tr><td>add_to_zones_default</td><td>BOOL</td><td>Whether or not this is a default server.</td></tr>
<tr><td>ordering</td><td>INTEGER</td><td>Display order</td></tr>
<tr><td>uses</td><td>INTEGER</td><td>How many zones have been assigned to this NameServer</td></tr>
</table>
</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
</table>

<table>
<tr><td>Optional Parameters</td><td><table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>default</td><td>INTEGER</td><td>1</td><td>Set server as default</td></tr></table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=nameServer&action=get&default=1</td></tr>
</table>

add

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=nameServer&action=add</td></tr>
<tr><td>Description</td><td>Adds a new DNS Server</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table><tr><td>SUCCESSFUL:</td><td><i>{"success":1,"message":"Add Successful."}</i></td></tr><tr><td>ERROR:</td><td><i>{"success":0, "message":"error message"}</i></td></tr></table></td></tr>
<tr><td>Required Parameters</td><td><table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>newServer</td><td>STRING</td><td>ns.yourdomain.com</td><td>Name of the NameServer</td></tr></table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=nameServer&action=add&newServer=ns.yourdomain.com</td></tr>
</table>

delete

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=nameServer&action=delete</td></tr>
<tr><td>Description</td><td>Deletes a NameServer</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table><tr><td>SUCCESSFUL:</td><td><i>{"success":1,"message":"Server Deleted."}</i></td></tr><tr><td>ERROR:</td><td><i>{"success":0, "message":"error message"}</i></td></tr></table></td></tr>
<tr><td>Required Parameters</td><td><table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>id</td><td>INTEGER</td><td>5</td><td>ID of server to delete.</td></tr></table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=nameServer&action=delete&id=5</td></tr>
</table>

<table>
<tr><th colspan="2">setDefault</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=nameServer&action=setDefault</td></tr>
<tr><td>Description</td><td>Default NameServers have all new zones added to them as they are created. Multiple NameServers can be classified as Default.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td><i>{"success":1, "message":"Success."}</i></td></tr>
<tr><td>ERROR:</td><td><i>{"success":0, "message":"error message"}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>5</td><td>ID of server to modify.</td></tr>
<tr><td>value</td><td>INTEGER</td><td>1</td><td>1 = Default, 0 = Normal</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=nameServer&action=setDefault&id=3&value=1</td></tr>
</table>

<table>
<tr><th colspan="2">orderUp</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=nameServer&action=orderUp</td></tr>
<tr><td>Description</td><td>Swaps the index order of the targeted NameServer with that of the one above it.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td><i>{"success":1,"message":"Reorderin Successful."}</i></td></tr>
<tr><td>ERROR:</td><td><i>{"success":0, "message":"error message"}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>5</td><td>ID of server to modify.</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=nameServer&action=orderUp&id=3</td></tr>
</table>

<table>
<tr><th colspan="2">orderDown</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=nameServer&action=orderDown</td></tr>
<tr><td>Description</td><td>Swaps the index order of the targeted NameServer with that of the one below it.</td></tr>
</table>

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL:</td><td>*{"success":1,"message":"Reorderin Successful."}*</td></tr>
<tr><td>ERROR:</td><td>*{"success":0, "message":"error message"}*</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>5</td><td>ID of server to activate.</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=nameServer&action=orderDown&id=5</td></tr>
</table>

API Module - IPAM

IP Address Management (IPv4 and IPv6)

Get	
URL	/api/v1/api.php?target=ipam&action=get
Description	Returns a list of IP blocks. Use optional parameters to filter the list. If multiple parameters are specified, only blocks matching all parameters will be returned.

<table>
<tr><td>Returns</td><td>

Examples:

<table>
<tr><td>SUCCESSFUL</td><td>*{ "success": 1, "message": "1 blocks found. ", "data": [{ "id": 5890, "type": "ipv4", "top_aggregate": null, "cidr": "192.168.0.0\/24", "formatted_ip": "192.168.0.0\/24", "address": "3232235520", "end_address": "3232235775", "mask": 24, "child1": null, "child2": null, "is_assigned": 0, "is_swipped": 0, "is_aggregate": 1, "custid": 81, "resource_id": 81, "resource_name": "Available", "last_updated_time": null, "description": null, "parent": null, "rir": "1918", "lir_id": null, "notes": null, "generic_code": null, "code": null, "region": "SFO", "vlan": 100, "arin_net_id": null, "arin_cust_id": null, "org_id": null, "arin_swip_time": null, "assigned_time": null, "asn": null, "allowSubAssignments": false, "permissions": { "permissionIPAMRead": "1", "permissionIPAMUpdate": "1", "permissionIPAMCreate": "1", "permissionSWIP": "1", "permissionAdmin": "1" }, "range": "192.168.0.0 - 192.168.0.255", "tags": ["Customer", "PTP"] }] }*</td></tr>
<tr><td>ERROR</td><td>*{'success':0, 'message':'error message'}*</td></tr>
</table>

</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>

Name	Type	Example	Description
address	INTEGER	1125449728	IP address of the block in decimal format
asn	INTEGER	1000	Filters blocks based on their ASN

</td></tr>
</table>

allowSubAssignments	BOOL	true	Filters blocks based on wether they allow sub-assignments or not. Acceptable values: "true" or "false"
block	STRING	213.37.29.0/24	CIDR block description
code	STRING	Code X	User-defined block code as defined in Admin-IPAM settings: Generic Code Per Block Name
endAddress	INTEGER	1125453823	End IP address of the block in decimal format
id	INTEGER	1234	The ID of the block
isAggregate	BOOL	true	Indicates if the block has been split into children or not. A value of 'true' will return blocks with no children.
isAssigned	BOOL	true	Acceptable values: "true" or "false"
isSwipped	BOOL	true	Acceptable values: "true" or "false"
lirId	INTEGER	101	The numeric ID of an LIR resource the block should be linked to
mask	INTEGER	24	Integer bitmask
region	STRING	SFO	The value from the list of name/value pairs which make up the list of available regions

resourceHolderId	STRING	`cust-001`	(**Deprecated**: Use resourceQuery instead) A custom ID which can be used to link resources in the 6Connect database back to your organization.
resourceId	INTEGER	1234	The ID of the resource the block is assigned to
resourceQuery	JSON	`{"custom_id":"cust-001"}`	A JSON object representing a valid resource query. Any parameters that can be used for a Resource GET API call can be used. Use of the resourceQuery parameter will return blocks assigned to any of the resources returned by that query.
rir	STRING	ARIN	Acceptable values: ARIN, RIPE, APNIC, AfriNIC, LACNIC, 1918
search	STRING	192.168	If a search term is provided, all IPAM fields including assigned Resource Holder name will be checked with a LIKE comparison to find matching blocks
selectCount	INTEGER	50	# of blocks to get

selectOffset	INTEGER	25	Offset for results set; useful for paging (e.g. selectCount = 50, selectOffset = 100 would return the 3rd page of 50 results)
sortField	STRING	cidr	Attribute to sort blocks by. Accepable values: cidr, mask, rir, vlan, code, updateTime
sortOrder	INTEGER	ASC	ASC or DESC
tags	STRING	customer,vpn	Comma-separate list of tags
tagsMode	STRING	"Strict" or "Exclude"	"strict" - matches ONLY blocks that have the EXACT set of tags of specified. "exclude" - matches ONLY blocks which are NOT tagged with any of the blocks specified.
topAggregateId	INTEGER	1234	The ID of the aggregate block to which the block belongs
type	STRING	"ipv4" or "ipv6"	IP type
vlan	INTEGER	123	VLAN for the block

Example URL	/api/v1/api.php?target=ipam&action=get&rir=ARIN&tags=customer,vpn

Add

URL	/api/v1/api.php?target=ipam&action=add
Description	Adds an IPv4 or IPv6 block

<table>
<tr>
<td>Returns</td>
<td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{"success":1,"message":"Block 192.168.0.0/24 (12345) added", "id":12345, "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }</i></td></tr>
<tr><td>ERROR</td><td><i>{ "success":0, "message":"error message" }</i></td></tr>
</table>
</td>
</tr>
<tr>
<td>Required Parameters</td>
<td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>block</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block description</td></tr>
<tr><td>rir</td><td>STRING</td><td>ARIN</td><td>Acceptable values: ARIN, RIPE, APNIC, AfriNIC, LACNIC, 1918</td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>allowDuplicate</td><td>BOOL</td><td>true</td><td>Allow the creation of duplicate blocks. The default behavior is to reject duplicates.</td></tr>
<tr><td>allowSubAssignments</td><td>BOOL</td><td>true</td><td>Does the block allow sub-assignments? If the block is assigned and allowSubAssignm is "true", children split from this block will be able to be assigned to different resources. Acceptable values: "true" or "false"</td></tr>
<tr><td>asn</td><td>INTEGER</td><td>1000</td><td>ASN for the block</td></tr>
<tr><td>code</td><td>STRING</td><td>Code X</td><td>User-defined block code as defined in Admin-IPAM settings: Generic Code Per Block Name</td></tr>
<tr><td>region</td><td>STRING</td><td>SFO</td><td>The value from the list of name/value pairs which make up the list of available regions</td></tr>
<tr><td>tags</td><td>STRING</td><td>customer,vpn</td><td>Comma-separate list of tags</td></tr>
<tr><td>vlan</td><td>INTEGER</td><td>123</td><td>VLAN for the block</td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=add&block=213.37.29.0/24 &rir=ARIN</td></tr>
</table>

Update

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=update</td></tr>
<tr><td>Description</td><td>Updates detail data about an IP block.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td>SINGLE BLOCK</td><td><i>{"success":1,"message" 192.168.0.0/24 (12345) updated", "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }</i></td></tr>
<tr><td>SUCCESSFUL</td><td>MULTIPLE BLOCKS</td><td><i>{"success":1,"message" blocks updated", "data":[{ "id":12345, "cidr":192.168.0.0/24", ...}, {"id":12346, "cidr", "192.168.0.1/32", ...}] }</i></td></tr>
<tr><td>ERROR</td><td></td><td><i>{ "success":0, "message":"error message" }</i></td></tr>
</table></td></tr>
<tr><td></td><td></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Allow Multiple</th><th>Description</th></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>Yes</td><td>ID of the IP block. Multiple block IDs can be specified in a comma-separ list.</td></tr>
<tr><td>block*</td><td>STRING</td><td>192.0.0.0/24</td><td>Yes</td><td>CIDR or the block. Multiple CIDRs can be specified in a comma-separ list.</td></tr>
<tr><td colspan="5">*Either block or id can be used, but only one must be provided</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
</table></td></tr>
</table>

allowSubAssignments	BOOL	true	Does the block allow sub-assignments If the block is assigned and allowSubAssignm is "true", children split from this block will be able to be assigned to different resources. Acceptable values: "true" or "false"
asn	INTEGER	1000	ASN for the block
code	STRING	Code X	Arbitrary user-defined block code
lirId	INTEGER	101	The numeric ID of an LIR resource the block should be linked to
notes	STRING	Words	Misc. Notes
region	STRING	Chicago, IL	The region this IP block is assigned to.
propagate	BOOL	true	Propagates all attribute values to any smaller child blocks of the block being updated. ***Available in version 5.1.0***
rir	STRING	ARIN	Acceptable values: ARIN, RIPE, APNIC, AfriNIC, LACNIC, 1918
tags	STRING	Customer, vpn	Comma-separate list of tags

tags_action	STRING	replace	What action to take on the supplied tags. This action must be taken in conjunction with the tags parameter. Valid settings for tags_action are: replace, add, delete. When tags_action is set to 'replace', all tags on an IP block are replaced with those
vlan	NUMERIC	123	VLAN for the block

Example URL	/api/v1/api.php?target=ipam&action=update&block=192.0.0.0/24&notes=Notes_here

Delete

URL	/api/v1/api.php?target=ipam&action=delete
Description	Deletes an aggregate block
Returns	Examples

SUCCESSFUL	*{"success":1,"message":"Aggregate deleted: 192.168.0.0/24", "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }*
ERROR	*{ "success":0, "message":"error message" }*

Required Parameters

Name	Type	Example	Description
block*	STRING	213.37.29.0/24	CIDR block description
id*	INTEGER	125	ID of the IP block
*Either block or id can be used, but only one must be provided			

<table>
<tr><td>Optional Parameters</td><td><table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>force</td><td>BOOL</td><td>true</td><td>Forces the aggregate block to be deleted even if the block is split or contains sub blocks which are assigned. The default behavior is to reject attempts to delete blocks which have been split or are assigned.</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=delete&block=213.37.29.0/24</td></tr>
</table>

Add Tag

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=add</td></tr>
<tr><td>Description</td><td>Adds a tag to an IP block.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b><table>
<tr><td>SUCCESSFUL</td><td><i>{ "success":1,"message":"Tag Added.", "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }</i></td></tr>
<tr><td>ERROR</td><td><i>{ "success":0, "message":"error message" }</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td><table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the block</td></tr>
<tr><td>block*</td><td>STRING</td><td>192.0.0.0/24</td><td>CIDR of the block</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
<tr><td>tag</td><td>STRING</td><td>Customer</td><td>The tag to add</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=addTag&id=125&tag=Customer</td></tr>
</table>

Delete Tag

URL	/api/v1/api.php?target=ipam&action=deleteTag
Description	Removes a tag from an IP block.

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{ "success":1,"message":"Tag Removed.", "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }</i></td></tr>
<tr><td>ERROR</td><td><i>{ "success":0, "message":"error message" }</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the block</td></tr>
<tr><td>block*</td><td>STRING</td><td>192.0.0.0/24</td><td>CIDR of the block</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
<tr><td>tag</td><td>STRING</td><td>Customer</td><td>The tag to delete</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=deleteTag&id=125&tag=Customer</td></tr>
</table>

Smart Assign

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=smartAssign</td></tr>
<tr><td>Description</td><td>Selects a block based on supplied parameters (rir, tags, etc.) and assigns to an Resource Holder.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{ "success":1,"message":"Assigned 192.168.0.0/24 to Resource (1234) via Smart Assign", "id":12345, "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }</i></td></tr>
<tr><td>ERROR</td><td><i>{ "success":0, "message":"error message" }</i></td></tr>
</table></td></tr>
</table>

Required Parameters

Name	Type	Example	Description
mask	INTEGER	24	The size of the block to be assigned
rir	STRING	ARIN	Acceptable values: ARIN, RIPE, APNIC, AfriNIC, LACNIC, 1918
resourceId*	INTEGER	1234	Integer ID of the resource to assign the block to
resourceQuery*	JSON	`{"custom_id":"cust-001"}`	A JSON object representing a valid resource query. Any parameters that can be used for a Resource GET API call can be used. Use of the resourceQuery parameter will return blocks assigned to any of the resources returned by that query.
*Either resourceId or resourceQuery can be used, but only one must be provided			
resourceHolderId	STRING	`cust-001`	(**Deprecated**: Use resourceQuery instead) A custom ID which can be used to link resources in the 6Connect database back to your organization.
type	STRING	"IPv4" or "IPv6"	The type of block to assign

<table>
<tr><td>Optional Parameters*</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>assignedResourceId</td><td>INTEGER</td><td>123</td><td>The ID of the resource the block is assigned to</td></tr>
<tr><td>code</td><td>STRING</td><td>Code X</td><td>Arbitrary user-defined block code</td></tr>
<tr><td>lirId</td><td>INTEGER</td><td>101</td><td>The ID of an LIR resource</td></tr>
<tr><td>region</td><td>STRING</td><td>Ashburn</td><td>Region to assign from</td></tr>
<tr><td>tags</td><td>STRING</td><td>customer,vpn</td><td>Comma separated string of tags. Matches blocks which have at least the set of tag specified by this parameter</td></tr>
<tr><td>tagsMode</td><td>STRING</td><td>"strict" or "exclude"</td><td>"strict" - matches ONLY blocks that have the EXACT set of tags of specified.
"exclude" - matches ONLY blocks which are NOT tagged with any of the blocks specified.</td></tr>
<tr><td>vlan</td><td>INTEGER</td><td>1023</td><td>VLAN designated to a given block</td></tr>
</table>
*Additional or fewer "optional" parameters may be required in order to result in a successful assignment, depending on the attributes of available blocks.
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=smartAssign&mask=24&type=IPv4</td></tr>
</table>

Direct Assign	
URL	/api/v1/api.php?target=ipam&action=directAssign
Description	Assigns a block to an Resource Holder

<table>
<tr>
<td>Returns</td>
<td>

Examples:

<table>
<tr><td>SUCCESSFUL</td><td>SINGLE BLOCK</td><td><i>{ "success":1,"message": 192.168.0.0/24 to Resource (1234)", "id":12345, "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }</i></td></tr>
<tr><td>SUCCESSFUL</td><td>MULTIPLE BLOCKS</td><td><i>{ "success":1,"message": 5 blocks to Resource (1234) via Direct Assign", "data":{ "ids":[12345, 12346, 12347, ...] } }</i></td></tr>
<tr><td>ERROR</td><td></td><td><i>{ "success":0, "message":"error message" }</i></td></tr>
</table>

</td>
</tr>
</table>

<table>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>block*</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block description</td></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the IP block, comma separated list of ids, or json encoded array of ids</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
<tr><td>resourceHolderId**</td><td>STRING</td><td><code>cust-001</code></td><td>(<b>Deprecated</b>: Use resourceQuery instead)
A custom ID which can be used to link resources in the 6Connect database back to your organization.</td></tr>
<tr><td>resourceId**</td><td>INTEGER</td><td>1234</td><td>Integer ID of the resource to assign the block to</td></tr>
<tr><td>resourceQuery**</td><td>JSON</td><td><code>{"custom_id":"cust-001"}</code></td><td>A JSON object representing a valid resource query. Any parameters that can be used for a Resource GET API call can be used. Use of the resourceQuery parameter will return blocks assigned to any of the resources returned by that query.</td></tr>
<tr><td colspan="4">**Either resourceId, resourceQuery, or resourceHolderId can be used, but only one must be provided</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Optional Parameters*</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>code</td><td>STRING</td><td>Code X</td><td>Arbitrary user-defined block code</td></tr>
<tr><td>lirId</td><td>INTEGER</td><td>101</td><td>The ID of an LIR resource</td></tr>
<tr><td>region</td><td>STRING</td><td>Ashburn</td><td>Region to assign from</td></tr>
<tr><td>rir</td><td>STRING</td><td>ARIN</td><td>Acceptable values: ARIN, RIPE, APNIC, AfriNIC, LACNIC, 1918</td></tr>
<tr><td>tags</td><td>STRING</td><td>customer,vpn</td><td>Comma separated string of tags. Matches blocks which have at least the set of tag specified by this parameter</td></tr>
<tr><td>tagsMode</td><td>STRING</td><td>"strict" or "exclude"</td><td>"strict" - matches ONLY blocks that have the EXACT set of tags of specified.
"exclude" - matches ONLY blocks which are NOT tagged with any of the blocks specified.</td></tr>
<tr><td>vlan</td><td>INTEGER</td><td>1023</td><td>VLAN designated to a given block</td></tr>
</table>
*Additional or fewer "optional" parameters may be required in order to result in a successful assignment, depending on the attributes of available blocks.
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=directAssign&block=213.37.29.0/24</td></tr>
</table>

Unassign	
URL	/api/v1/api.php?target=ipam&action=unassign
Description	Reclaims the specified block to be reassigned in the future

<table>
<tr><td>Returns</td><td><b>Examples:</b><table>
<tr><td>SUCCESSFUL</td><td><i>{ "success":1,"message":"192.168.0. unassigned", "id":12345, "data":{ "id":12345, "cidr":192.168.0.0/24", ...} }</i></td></tr>
<tr><td>ERROR</td><td><i>{ "success":0, "message":"error message" }</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td><table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>block*</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block description</td></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the IP block</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td><table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>skipHolding</td><td>BOOL</td><td>true</td><td>If set to true (skipHolding=true then the holding tank is skipped. If set to false, or not included, normal holding tank rules apply. <b><i>Available in version 5.1.0</i></b>
Acceptable values: "true" or "false"</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=unassign&block=213.37.29.0/24</td></tr>
</table>

<table>
<tr><th colspan="2">Simple Reassign</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=simpleReassign</td></tr>
<tr><td>Description</td><td>ARIN SWIP - simple reassign. Creates an ARIN customer record for the assigned resource and reassigns the block to the ARIN customer record.</td></tr>
</table>

<table>
<tr><td>Returns</td><td>**Examples:**
<table>
<tr><td>SUCCESSFUL</td><td>*{ "success":1,"message":"Sent ARIN SWIP with action simpleReassign for 67.221.244.0/28 for Acme, Message: Success" }*</td></tr>
<tr><td>ERROR</td><td>*{ "success":0, "message":"error message" }*</td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>blockId</td><td>INTEGER</td><td>1234</td><td>ID of the block to reassing</td></tr>
<tr><td>resourceId</td><td>INTEGER</td><td>1234</td><td>ID of resource representing the customer to reassign to</td></tr>
<tr><td>lirId</td><td>INTEGER</td><td>1234</td><td>ID of the LIR to use for reassignment</td></tr>
<tr><td>entityHandle</td><td>STRING</td><td>CONNE-81</td><td>The Org ID for the LIR.</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>netName</td><td>STRING</td><td>NET-ACME-67-221-244-0-28</td><td>Optional name for the network to override the default. The default net name will be created using the Net Name Prefix and IP address for the block.</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=simpleReassign&resourceId=121&</td></tr>
</table>

Get Tags List

URL	/api/v1/api.php?target=ipam&action=getTagList
Description	Returns a list of all valid IP Tags in the database.

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{"success":1,"message":"Tags Retrieved.","data":[{"value":"IT","na
Mobile"},{"value":"PTP","name":"Po
to
Point"},{"value":"Prod","name":"Pro
Machines"},{"value":"VOIP","name"</i></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
</table>

Add Tag To List

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=addTagToList</td></tr>
<tr><td>Description</td><td>Adds a tag to the IPAM tag list</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{"success":1,"message":"Tag Added."}</i></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>newTag</td><td>STRING</td><td>Loopback C</td><td>The value to add to the list of name/value pairs which make up the list of available regions</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=addTagToList&newTag=Loopback C</td></tr>
</table>

Get RIRs List

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=getRIRList</td></tr>
<tr><td>Description</td><td>Returns a list of all valid RIRs in the database.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{"success":1,"message":"RIRs Retrieved.","data":[{"value":"ARIN",</i></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
</table>

Get Regions List

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=getRegionList</td></tr>
<tr><td>Description</td><td>Returns a list of all valid Regions in the database.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{"success":1,"message":"Regions Retrieved.","data":[{"value":"ANY"," Region"},{"value":"ASH1","name":" VA"},{"value":"BOS","name":"Bosto MA"},{"value":"CHI","name":"Chicag IL"},{"value":"DAL","name":"Dallas, TX"},{"value":"DEN","name":"Denve CO"},{"value":"FRKT","name":"Fran DE"},{"value":"LON1","name":"Lond UK"},{"value":"MIA","name":"Miami, FL"},{"value":"PAR","name":"Paris, FR"},{"value":"SFO","name":"San Francisco, CA"},{"value":"SEA","name":"Seattl WA"},{"value":"Tokyo","name":"Tok</i></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
</table>

Add Region To List

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=addRegionToList</td></tr>
<tr><td>Description</td><td>Adds a region to the IPAM region list</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><i>{"success":1,"message":"Region Added."}</i></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>newRegion</td><td>STRING</td><td>SFO</td><td>The value to add to the list of name/value pairs which make up the list of available regions</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=addRegionToList&newRegion=SF</td></tr>
</table>

Get Utilization

URL	/api/v1/api.php?target=ipam&action=utilization

Description	Gets the utilization percentages for a specific ip block or ip block and mask combination.

<table>
<tr>
<td>Returns</td>
<td><b>Examples:</b>
<table>
<tr>
<td>SUCCESSFUL</td>
<td>{
"success": 1,
"totalBlocks": 1,
"totalHosts": "256",
"hostsAssigned": 0,
"hostsAllocated": "256",
"hostsAvailable": "256",
"hostsInHolding": 0,
"availablePercentage": "100.00",
"assignedPercentage": "0.00",
"allocatedPercentage": "100.00",
"inHoldingPercentage": "0.00",
"resources": [{
"id": 351,
"name": "Customer 1",
"type": "entry",
"hosts": "256",
"blocks": "1",
"percentage": "100.00"
}],

"blocksAssigned":0,
"blocksAllocated": 1,
"blocksAvailable": "1",
"blocksInHolding": null,
"blocksAssignedPercentage": "0.00",
"blocksAllocatedPercentage": "100.00",
"blocksAvailablePercentage": "100.00",
"blocksInHoldingPercentage": "0.00"
}</td>
</tr>
<tr>
<td>ERROR</td>
<td><i>{'success':0, 'message':'error message'}</i></td>
</tr>
</table>
</td>
</tr>
</table>

<table>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>block*</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block description</td></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the IP block</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>mask</td><td>INTEGER</td><td>24</td><td>The specific mask size to retrieve utilization for. If using this parameter, the id parameter should be the id of the aggregate.</td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=utilization&id=125</td></tr>
</table>

Get Host Utilization

URL	/api/v1/api.php?target=ipam&action=getHostUtilization
Description	Gets the host utilization statistics with support for filters.

<table>
<tr>
<td>Returns</td>
<td>**Examples:**
<table>
<tr>
<td>SUCCESSFUL</td>
<td>{
"success": 1,
"totalHosts": "256",
"hostsAssigned": 0,
"hostsAllocated": "256",
"hostsAvailable": "256",
"hostsInHolding": 0,
"availablePercentage": "100.00",
"assignedPercentage": "0.00",
"allocatedPercentage": "100.00",
"inHoldingPercentage": "0.00",
"resources": [{
"id": 351,
"name": "Customer 1",
"type": "entry",
"hosts": "256",
"blocks": "1",
"percentage": "100.00"
}]
}</td>
</tr>
<tr>
<td>ERROR</td>
<td>*{'success':0, 'message':'error message'}*</td>
</tr>
</table>
</td>
</tr>
<tr>
<td>Required Parameters</td>
<td>
<table>
<tr>
<th>Name</th>
<th>Type</th>
<th>Example</th>
<th>Description</th>
</tr>
<tr>
<td>type</td>
<td>STRING</td>
<td>"ipv4" or "ipv6"</td>
<td>IP type</td>
</tr>
</table>
</td>
</tr>
</table>

<table>
<tr>
<td>Optional Parameters</td>
<td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Multiple Values</th><th>Description</th></tr>
<tr><td>code</td><td>STRING</td><td>"code-1"</td><td>Yes</td><td>User-defined block code as defined in Admin-IPAM settings: Generic Code Per Block Name</td></tr>
<tr><td>region</td><td>STRING</td><td>"SFO"</td><td>Yes</td><td>Region to assign from</td></tr>
<tr><td>rir</td><td>STRING</td><td>ARIN</td><td>No</td><td>Acceptable values: ARIN, RIPE, APNIC, AfriNIC, LACNIC, 1918</td></tr>
<tr><td>tags</td><td>STRING</td><td>"Customer"</td><td>Yes</td><td>Comma separated string of tags</td></tr>
<tr><td>vlan</td><td>INTEGER</td><td>1000</td><td>Yes</td><td>VLAN designated to a given block</td></tr>
</table>
NOTE: to filter using multiple values, pass the values as a JSON-encoded string representation of an array.
For example, to get utilization data for multiple tags, you could use the following URL:
<i>/api/v1/api.php?target=ipam&action=getHostUtilization&type=ipv4&tags</i>
</td>
</tr>
<tr>
<td>Example URL</td>
<td>/api/v1/api.php?target=ipam&action=getHostUtilization&type=ipv4 &tags=["Customer","PTP"]&region=SMF</td>
</tr>
</table>

Aggregate	
URL	/api/v1/api.php?target=ipam&action=aggregate
Description	Aggregates a selected block to the mask specified. If no mask specified, re-aggregates blocks to next parent. IE. calling aggregate on a /25 will aggregate both children back to the parent /24. All child blocks must be Available for aggregation to succeed.

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><code>{"success":1,"message":"10</code>
<code>aggregated into</code>
<code>10.2.0.0\/24","id":16326}</code></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the IP block.</td></tr>
<tr><td>block*</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block.</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>autoAggregateToMask</td><td>INTEGER</td><td>24</td><td>All blocks and IPs smaller than this netmask will be aggregated.</td></tr>
<tr><td>ignoreAssignments</td><td>BOOL</td><td>TRUE</td><td>If the ignoreAssignmen flag is not set the aggregation operation will fail if any children beneath the supplied autoAggregateTo are assigned or otherwise unavailable. If this option is set, it will unassign blocks prior to reaggregation.</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=aggregate&id=125&
autoAggregateToMask=24</td></tr>
</table>

Split

URL	/api/v1/api.php?target=ipam&action=split

<table>
<tr><td>Description</td><td>Splits a selected block to the mask specified. If no mask specified, it split blocks to next child. IE. calling aggregate on a /24 will split both parent to the child /25s. All parent blocks must be Available, or have Allow Sub Assignments on for a split to succeed.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"10
split into 10.1.0.0\/25
and
10.1.0.128\/25","data":{"c
,"child2":23451}}</td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the IP block.</td></tr>
<tr><td>block*</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block.</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>autoSplitToMask</td><td>INTEGER</td><td>24</td><td>Auto aggregate the block back to this mask size. Note all blocks up this mask size must be Available or call will fail.</td></tr>
<tr><td>autoSplitLimit</td><td>INTEGER</td><td>4</td><td>A number the power of 2 (^2).</td></tr>
</table></td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=split&block=213.37.29.0/24&autoSplitLimit=4</td></tr>
</table>

Scan Block	
URL	/api/v1/api.php?target=ipam&action=scanBlock
Description	Initiates an asynchronous ping (ICMP) scan of the target block specified. Results of the scan can be checked with get.

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><code>{"success":1,"message":"Pi scan started for 8.8.8.0\/27"}</code></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the IP block.</td></tr>
<tr><td>block*</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block.</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example</td><td>/api/v1/api.php?target=ipam&action=scanBlock&block=213.37.29.0/24</td></tr>
</table>

Get Scan Results

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=getScanResults</td></tr>
<tr><td>Description</td><td>Initiates an asynchronous ping (ICMP) scan of the target block specified. Results of the scan can be checked with get</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td><code>{"success":1,"data":{"bloc 11:07:10",</code>

<code>"data":[{"address":"8.8.8.</code></td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>block</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block.</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example</td><td>/api/v1/api.php?target=ipam&action=getScanResults&block= 213.37.29.0/24</td></tr>
</table>

Get Options

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=getOptions</td></tr>
<tr><td>Description</td><td>Returns a list of options available for the block</td></tr>
</table>

<table>
<tr><td>Returns</td><td><strong>Examples:</strong>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"Options for 14.0.0.0\/25 (125)","options":{"actions":["aggrega Split","masks":[26,27,28,29,30,31,3</td></tr>
<tr><td>ERROR</td><td><em>{'success':0, 'message':'error message'}</em></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>125</td><td>ID of the IP block</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=getOptions&id=125</td></tr>
</table>

Get Resource Hierarchy

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=getResourceHierarchy</td></tr>
<tr><td>Description</td><td>Returns the resource hierarchy for the block</td></tr>
<tr><td>Returns</td><td><strong>Examples:</strong>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":"1","data":[{"id":"402","na Labz"}]}</td></tr>
<tr><td>ERROR</td><td><em>{'success':0, 'message':'error message'}</em></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>125</td><td>ID of the IP block</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=getResourceHierarchy&id=125</td></tr>
</table>

Get VLAN

URL	/api/v1/api.php?target=ipam&action=getVlan
Description	Returns the VLAN for the block

<table>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"Found VLAN 1002 (14.0.0.0\/25)","data":{"id":125,"type
Labz","last_updated_time":"2015-0
12:30:37","description":null,"parent"
Notes","generic_code":"Datacenter
GA","vlan":1002,"arin_net_id":null,"
10:30:31","asn":"143","allowSubAss
-
14.0.0.127","tags":["Customer"]}}</td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id*</td><td>INTEGER</td><td>125</td><td>ID of the IP block</td></tr>
<tr><td>block*</td><td>STRING</td><td>213.37.29.0/24</td><td>CIDR block.</td></tr>
<tr><td colspan="4">*Either block or id can be used, but only one must be provided</td></tr>
</table></td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=getVlan&id=125</td></tr>
</table>

Process Holding Tank

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=processHoldingTank</td></tr>
<tr><td>Description</td><td>Processes the Holding Tank, returning held blocks to available status</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"1 IPv4 and 0 IPv6 blocks would be moved to the available pool. ","data":[{"id":77712,"type":"ipv4","t
holding","last_updated_time":"2014
11:25:41","description":null,"parent"
AZ","vlan":null,"arin_net_id":null,"ar
11:20:34","asn":null,"allowSubAssig
-
23.92.0.127","tags":["Customer","D</td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table></td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
</table>

<table>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>preview</td><td>BOOL</td><td>true</td><td>Shows what is going to be removed from the holding tank.
Acceptable values: "true" or "false"</td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=processHoldingTank&preview=true</td></tr>
</table>

IPAM API Calls Subject to Change:

Calls below this point are subject to change, and are not recommended for use in production code.

<table>
<tr><th colspan="2">Get Attribute List</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=ipam&action=getAttributeLists</td></tr>
<tr><td>Description</td><td>Returns a list of attributes</td></tr>
<tr><td>Returns</td><td>
Examples:
<table>
<tr><td>SUCCESSFUL</td><td>{"asns":[],"masks":["24"],"rirs":["1918
Lab
1","slug":"quito-lab-1","type":"dhcp_</td></tr>
<tr><td>ERROR</td><td>*{'success':0, 'message':'error message'}*</td></tr>
</table>
</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>125</td><td>ID of the IP block</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=ipam&action=getAttributeLists&id=125</td></tr>
</table>

API Module - LIR

- LIR Management
    - Get
    - Delete

LIR Management

Get	
URL	/api/v1/api.php?target=lir&action=get
Description	Returns a list of LIRs
Returns	**Examples:**

SUCCESSFUL

```
{
    "success": 1,
    "message": "2
objects found",
    "data": [
        {
            "id": "100",
            "name":
"RIPE Test LIR",
            "slug":
"ripe-test-lir",
            "entities":
[
                {

"mnt_by":
"mntner@email.com"

"mnt_by_password":
"password",

"admin_c":
"test-admin-c",

"tech_c": "test-tech-c",

"api_key": null
                }
            ],
            "rir":
"RIPE"
        },
        {
            "id": "101",
            "name":
"ARIN Test LIR",
            "slug":
"arin-test-lir",
            "entities":
[
                {

"org_handle": "TEST-10",
"admin_poc":
"TEST-ARIN",

"net_poc": "TEST-ARIN",

"abuse_poc": "",

"net_name_prefix":
"PRFX",

"api_key":
"API-XXXX-YYYY-ZZZZ-1234"
}
            ],
            "rir":
"ARIN",
            "asn":
"1000"
        }
```

```
    ]
}
```

ERROR

```
{
    "success":0,
    "message":"error
message"
}
```

Example URL	/api/v1/api.php?target=lir&action=get

Delete

URL	/api/v1/api.php?target=lir&action=delete&id=<ID>
Description	Deletes and LIR
Returns	**Examples:**

SUCCESSFUL

```
{
    "success": 1,
    "message": "LIR
deleted."
}
```

ERROR

```
{
    "success":0,
    "message":"error
message"
}
```

Example URL	/api/v1/api.php?target=lir&action=delete&id=100

API Module - Peering

Peering

<table>
<tr><th colspan="2">getCommunications</th></tr>
<tr><td>Base URL</td><td>/api/v1/api.php?target=peering&action=getCommunications</td></tr>
<tr><td>Description</td><td>Returns all communication data on peers at a particular exchange.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
<table>
<tr><td>SUCCESSFUL</td><td>{"success":1,"message":"8
records
found.","data":[{"name":"1&1
Internet","asn":"8560","request_stat
Technologies","asn":"20940","reque
IP
Networks","asn":"5580","request_st
Communications","asn":"7029","req
(Abovenet Communications
Inc.)","asn":"6461","request_status"
telecom","asn":"4323","request_stat</td></tr>
<tr><td>ERROR</td><td><i>{'success':0, 'message':'error message'}</i></td></tr>
</table>
</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>public_id</td><td>INTEGER</td><td>1</td><td>The unique numerical identifier of the exchange to retrieve peering communicaiton records for.</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=peering&action=getCommunications&public_id=1</td></tr>
</table>

<table>
<tr><th>getPeers</th></tr>
</table>

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=peering&action=getPeers</td></tr>
<tr><td>Description</td><td>Returns a list of all peers available at an exchange</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: {"success":1,"message":"184 peers
found.","data":[{"id":"262","public_id":"1","asn":"8560","name":"1&1
Internet","qualified":true,"is_peer":0,"request_status":"sent","info_prefixe
Clearing
House","qualified":true,"is_peer":0,"request_status":null,"info_prefixes":"
1
Hosting","qualified":true,"is_peer":0,"request_status":null,"info_prefixes":
Communications,
Inc.","qualified":true,"is_peer":0,"request_status":null,"info_prefixes":"20
Communications","qualified":true,"is_peer":0,"request_status":null,"info_
LLC","qualified":true,"is_peer":0,"request_status":null,"info_prefixes":"60
Inc","qualified":true,"is_peer":0,"request_status":null,"info_prefixes":"5","
(Abovenet Communications
Inc.)","qualified":true,"is_peer":0,"request_status":null,"info_prefixes":"20
Game Network,
Inc.","qualified":true,"is_peer":0,"request_status":null,"info_prefixes":null,

ERROR: {"success":1,"message":"No peers found."}</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>public_id</td><td>INTEGER</td><td>1</td><td>The unique numerical identifier of the exchange to retrieve peering communication records for.</td></tr>
<tr><td>id</td><td>INT</td><td>1</td><td>The unique numerical identifier of the peer in peeringDB.</td></tr>
<tr><td>asn</td><td>INT</td><td>4436</td><td></td></tr>
<tr><td>name</td><td>STRING</td><td>GTT</td><td></td></tr>
<tr><td>aka</td><td>STRING</td><td>nLayer</td><td></td></tr>
<tr><td>website</td><td>STRING</td><td>http://www.gt-t.net</td><td></td></tr>
<tr><td>notes_public</td><td>STRING</td><td></td><td></td></tr>
<tr><td>notes_private</td><td>STRING</td><td></td><td></td></tr>
<tr><td>irr_as_set</td><td>STRING</td><td>AS-NLAYER</td><td></td></tr>
</table>
</td></tr>
</table>

info_traffic	ENUM	1 Tbps+	enum('Not Disclosed','0-20 Mbps','20-100Mb Gbps','50-100 Gbps','100+ Gbps','100-200 Gbps','200-300 Gbps','300-500 Gbps','500-1000 Gbps','1 Tbps+') DEFAULT 'Not Disclosed'
info_ratio	ENUM	Mostly Outbound	enum('Not Disclosed','Heavy Outbound','Mostly Outbound','Balan Inbound','Heavy Inbound') DEFAULT 'Not Disclosed'
info_scope	ENUM	Global	enum('Not Disclosed','Regio America','Asia Pacific','Europe',' America','Global') DEFAULT NULL
info_type	ENUM	NSP	enum('Not Disclosed','NSP',' DEFAULT 'Not Disclosed'
info_prefixes	INT	10000	
info_lookingglass	STRING	http://lg.nlayer.net/	
info_routeserver	STRING	telnet://route-server.nlayer.net	
info_unicast	CHAR	1	
info_multicast	CHAR		
info_ipv6	CHAR	1	
policy_url	STRING	http://www.gt-t.net/Peering_policies	
policy_general	ENUM	Selective	enum('Open','Sel DEFAULT NULL
policy_locations	ENUM	Required - International	enum('Not Required','Prefer - US','Required - International') DEFAULT NULL

policy_ratio	ENUM	No	enum('Yes','No') DEFAULT NULL
policy_contracts	ENUM	Not Required	enum('Not Required','Private Only','Required') DEFAULT NULL
policy_nopublic	ENUM	N	enum('Y','N') NOT NULL DEFAULT 'N'
policy_noprivate	ENUM	N	enum('Y','N') NOT NULL DEFAULT 'N'
date_created	DATETIME	2013-03-21 15:36:42	Date the peeringdb entry was created
date_lastupdated	DATETIME	2013-03-21 15:36:42	Date the peeringdb entry was last updated
include_public_ips	BOOL	TRUE	Returns a list of all public facing IPs
include_contacts	BOOL	TRUE	Returns a list of all contacts associated with peer(s)
include_log_data	BOOL	TRUE	Returns a list of all log data associated with the peer(s) (use with care)

Example URL	/api/v1/api.php?target=peering&action=getPeers&public_id=1

getRequests

URL	/api/v1/api.php?target=peering&action=getRequests
Description	Returns a list of all peering requests issued

<table>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: {"success":1,"message":"1 request found.","data":[{"id":"131","public_id":"5","source_participant_id":"2335",' ops@6connect.com","email_to":"nalinmk@gmail.com ","subject":"Peering request from 6connect, Inc.","body":"Peering,\r\n\r\n6connect, Inc., 8038, would like to peer with Amazon.com at our common locations.\r\n\r\nFacility, IP Address\r\nEquinix Ashburn - 206.126.236.68\r\nEquinix Palo Alto - 198.32.176.36\r\nEquinix Ashburn - 206.126.236.35\r\nEquinix San Jose - 206.223.116.177\r\nLINX Juniper LAN - 195.66.225.175\r\n\r\nSincerely,\r\nOperations\r\nops@6connect.com \r\n\r\n\r\n6connect, Inc. information:\r\nEquinix Palo Alto, 2001:504:d::33\r\nEquinix Palo Alto, 198.32.176.51\r\n\r\nPeeringDB: http:\/\/as8038.peeringdb.com\/\r\n","status":null,"created":"2014-04-23 10:31:33","modified":"2014-04-23 10:31:33"}]}
ERROR: {"success":1,"message":"No request found.","data":[]}</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>peer_participant_id</td><td>INTEGER</td><td>1</td><td>The numerical id of the peer</td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=peering&action=getRequests&peer_participant_id=1</td></tr>
</table>

<table>
<tr><th colspan="2">getSessions</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=peering&action=getSessions</td></tr>
<tr><td>Description</td><td>Returns a list of all bgp peering sessions</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: {"success":1,"message":"1 sessions found.","data":[{"id":"51","source_asn":"32787","source_ipaddr":"1.2.3.4" Technologies","peer_participant_id":"2","peer_ipaddr":"206.126.236.102 b","public_id":"1","public_name":"Equinix Ashburn","ip_type":"ipv4","type":"Peer","state":"not configured","prfx_max":"20","prfx_received":null,"password":"0","note":nu
ERROR: {"success":1,"message":"No peers found."}</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>public_id</td><td>INTEGER</td><td>1</td><td>The unique numerical identifier of the exchange to retrieve peering communicaiton records for.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>41</td><td></td></tr>
<tr><td>public_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>source_asn</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>source_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>resource_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_asn</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_name</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_participant_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_hostname</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_group</td><td>STRING</td><td></td><td></td></tr>
<tr><td>password</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>type</td><td>STRING</td><td></td><td></td></tr>
<tr><td>state</td><td>STRING</td><td></td><td></td></tr>
<tr><td>prfx_max</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>prfx_received</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>ip_type</td><td>ENUM</td><td></td><td>enum('ipv4','ipv6') NOT NULL DEFAULT 'ipv4'</td></tr>
<tr><td>note</td><td>STRING</td><td></td><td></td></tr>
<tr><td>created</td><td>TIMESTAMP</td><td></td><td></td></tr>
<tr><td>modified</td><td>TIMESTAMP</td><td></td><td></td></tr>
<tr><td>deleted</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>public_id</td><td>INTEGER</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=peering&action=getPeers&public_id=1</td></tr>
</table>

addSession	
URL	/api/v1/api.php?target=peering&action=addSession
Description	Adds a bgp session

<table>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: {"success":1,"message":"Session added: Amazon.com (AS8038\/1.2.3.5) - (AS16509\/206.126.236.68)","data":{"id":111,"source_asn":"8038","sourc configured","prfx_max":"200","prfx_received":null,"password":"ace12345 a fancy note."}}

ERROR: {"success":1,"message":"No request found.","data":[]}</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>source_asn</td><td>INTEGER</td><td>1</td><td>The numerical id of the peer</td></tr>
<tr><td>source_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>resource_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_asn</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_name</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_participant_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_hostname</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_group</td><td>STRING</td><td></td><td></td></tr>
<tr><td>public_id</td><td></td><td></td><td></td></tr>
<tr><td>type</td><td>STRING</td><td></td><td></td></tr>
<tr><td>ip_type</td><td>ENUM</td><td></td><td>enum('ipv4','ipv6')</td></tr>
<tr><td>state</td><td>STRING</td><td></td><td></td></tr>
<tr><td>prfx_max</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>note</td><td>STRING</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=peering&action=getRequests&peer_participant_i</td></tr>
</table>

configureSession

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=peering&action=configureSession</td></tr>
<tr><td>Description</td><td>Configure a BGP session on the router</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL:

ERROR: {"success":0,"message":"Unable to authenticate "}</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>session_id</td><td>INTEGER</td><td>1</td><td></td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>session_id</td><td>INTEGER</td><td>1</td><td>The numerical id of the peer</td></tr>
<tr><td>source_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>resource_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_asn</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_name</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_participant_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_hostname</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_group</td><td>STRING</td><td></td><td></td></tr>
<tr><td>public_id</td><td></td><td></td><td></td></tr>
<tr><td>type</td><td>STRING</td><td></td><td></td></tr>
<tr><td>ip_type</td><td>ENUM</td><td></td><td>enum('ipv4','ipv6')</td></tr>
<tr><td>state</td><td>STRING</td><td></td><td></td></tr>
<tr><td>prfx_max</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>note</td><td>STRING</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=peering&action=configureSession&session_id=5</td></tr>
</table>

deleteSession

URL	/api/v1/api.php?target=peering&action=deleteSession
Description	Delete sessions matching criteria
Returns	**Examples:** SUCCESSFUL: {"success":1,"message":"1 sessions deleted."} ERROR: {"success":0,"message":"No sessions found to delete."}
Required Parameters	None

Optional Parameters

Name	Type	Example	Description
id	INTEGER	41	
public_id	INTEGER		
source_asn	INTEGER		
source_ipaddr	STRING		
resource_id	INTEGER		
peer_asn	INTEGER		
peer_name	STRING		
peer_participant_id	INTEGER		
peer_ipaddr	STRING		
peer_hostname	STRING		
peer_group	STRING		
password	INTEGER		
type	STRING		
state	STRING		
prfx_max	INTEGER		
prfx_received	INTEGER		
ip_type	ENUM		enum('ipv4','ipv6') NOT NULL DEFAULT 'ipv4'
note	STRING		
created	TIMESTAMP		
modified	TIMESTAMP		
deleted	INTEGER		
public_id	INTEGER		

Example URL	/api/v1/api.php?target=peering&action=deleteSession&id=171

updateSession

URL	/api/v1/api.php?target=peering&action=updateSession
Description	Updates session values with any new values specified

<table>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL:{"success":1,"message":"Session updated: 123.net (AS32787\/1.2.3.4) - (AS12129\/206.126.236.70)","data":{"id":"41","source_asn":"32787","sou a","public_id":"1","public_name":"Equinix Ashburn","ip_type":"ipv4","type":"Peer","state":"not configured","prfx_max":"10","prfx_received":null,"password":"0","note":"A an awesome note."}}
ERROR:</td></tr>
<tr><td>Required Parameters</td><td>None</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>id</td><td>INTEGER</td><td>41</td><td></td></tr>
<tr><td>public_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>source_asn</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>source_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>resource_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_asn</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_name</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_participant_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_ipaddr</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_hostname</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_group</td><td>STRING</td><td></td><td></td></tr>
<tr><td>password</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>type</td><td>STRING</td><td></td><td></td></tr>
<tr><td>state</td><td>STRING</td><td></td><td></td></tr>
<tr><td>prfx_max</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>prfx_received</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>ip_type</td><td>ENUM</td><td></td><td>enum('ipv4','ipv6') NOT NULL DEFAULT 'ipv4'</td></tr>
<tr><td>note</td><td>STRING</td><td></td><td></td></tr>
<tr><td>created</td><td>TIMESTAMP</td><td></td><td></td></tr>
<tr><td>modified</td><td>TIMESTAMP</td><td></td><td></td></tr>
<tr><td>deleted</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>public_id</td><td>INTEGER</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=peering&action=updateSession&note=Adding+ar</td></tr>
</table>

<table>
<tr><th colspan="2">resestPeerStatus</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=peering&action=resetPeerStatus</td></tr>
<tr><td>Description</td><td></td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: {"success":1,"message":"1&1 Internet status reset","data":{"id":"262","public_id":"1","asn":"8560","name":"1&1 Internet","qualified":true,"is_peer":0,"request_status":"none","info_prefixe status reset","time":"2014-05-22 23:14:54","request_id":null,"session_id":null,"public_id":"1"},{"message": status reset","time":"2014-05-22 23:14:18","request_id":null,"session_id":null,"public_id":"1"},{"message": deleted: 1&1 Internet (AS32787\/1.2.3.4) - (AS8560\/206.126.236.200)","time":"2014-05-22 22:39:43","request_id":null,"session_id":"71","public_id":"1"},{"message" sent: ","time":"2014-04-12 13:24:43","request_id":"121","session_id":null,"public_id":"1"},{"message added: 1&1 Internet (AS32787\/1.2.3.4) - (AS8560\/206.126.236.200)","time":"2014-04-07 11:32:37","request_id":null,"session_id":"71","public_id":"1"}]}}

ERROR: {"success":0,"message":"Could not find peer matching parameters"}</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>participant_id</td><td>INTEGER</td><td>262</td><td>The id of the peer in from the peeringDB peerParticipants table.</td></tr>
<tr><td>public_id</td><td>INTEGER</td><td>1</td><td>The id of the exchange point from the peeringDB mgmtPublics table.</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=peering&action=resetPeerStatus&participant_id=</td></tr>
</table>

<table>
<tr><th colspan="2">sendRequest</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=peering&action=sendRequest</td></tr>
<tr><td>Description</td><td>Send a peering request (email) to a prospective peer. This will be deprecated in the next version for a simpler call, strongly suggest against using.</td></tr>
</table>

<table>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: {"success":1,"message":"Request sent","data":{"id":"922","public_id":"1","asn":"10933","name":"ATX Communications, Inc.","qualified":true,"is_peer":0,"request_status":"sent","info_prefixes":n
sent to ","time":"2014-05-27 16:59:01","request_id":"181","session_id":null,"public_id":"1"},{"message
sent to ","time":"2014-05-27 16:49:30","request_id":"171","session_id":null,"public_id":"1"}]}}

ERROR: {"success":0,"message":"Internal error"}</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>public_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_participant_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>source_participant_id</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>peer_name</td><td>STRING</td><td></td><td></td></tr>
<tr><td>peer_asn</td><td>INTEGER</td><td></td><td></td></tr>
<tr><td>email_from</td><td>STRING</td><td>262</td><td></td></tr>
<tr><td>email_to</td><td>STRING</td><td>1</td><td></td></tr>
<tr><td>subject</td><td>STRING</td><td></td><td></td></tr>
<tr><td>body</td><td>STRING</td><td></td><td></td></tr>
<tr><td>type</td><td>ENUM</td><td>html</td><td>enum('text','html')</td></tr>
<tr><td>status</td><td>ENUM</td><td>sent</td><td>enum('sent','acce</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>None</td></tr>
<tr><td>Example URL</td><td>https://ops.6connect.com/peering-demo/api/v1/api.php?target=peering&
&public_id=1&type=text&email_from=ops%406connect.com&email_to=
&body=%0D%0APeering%2C%0D%0A%0D%0A6connect%2C+Inc.%2</td></tr>
</table>

sendEmail

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=peering&action=sendEmail</td></tr>
<tr><td>Description</td><td>Send a peering request (email) to a prospective peer. This will be deprecated in the next version for a simpler call, strongly suggest against using.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL:

ERROR:</td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr>
<tr><td>participant_id</td><td>INTEGER</td><td>262</td><td></td></tr>
<tr><td>public_id</td><td>INTEGER</td><td>1</td><td></td></tr>
</table>
</td></tr>
</table>

Optional Parameters	None
Example URL	

updatePeer	
URL	/api/v1/api.php?target=peering&action=updatePeer
Description	
Returns	**Examples:** SUCCESSFUL: ERROR:
Required Parameters	<table><tr><th>Name</th><th>Type</th><th>Example</th><th>Description</th></tr><tr><td>participant_id</td><td>INTEGER</td><td>262</td><td></td></tr><tr><td>public_id</td><td>INTEGER</td><td>1</td><td></td></tr></table>
Optional Parameters	None
Example URL	

API Module - Resource

- Resources
  - get
  - add
  - update
  - delete

Resources

<table>
<tr><th colspan="2">get</th></tr>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=get</td></tr>
<tr><td>Description</td><td>Get a resource or resources</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL:
<i>{"success":1,"message":"Search successful","data":[{"id":"57","name":"2nd Email","slug":"6c-contact-email2","type":"field","parent_id":"1","category_id":null,"attr":[]}]}</i>

ERROR: <i>{"success":0,"message":"Search failed"}</i></td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>name</td><td>STRING</td><td>Name of the resource. Example: 6Connect, Inc.</td></tr>
<tr><td>slug</td><td>STRING</td><td>The unique URL friendly name of the resource. Example: 6connect-inc</td></tr>
<tr><td>type</td><td>STRING</td><td>Type of resource (eg. <i>entry</i>, <i>field</i>, <i>category</i>)</td></tr>
</table>

At most, one of the following:</td></tr>
</table>

Name	Type	Notes/Example
id	INTEGER	Get the resource which has this ID
resource__in	ARRAY	Get any resource which has any of these IDs
resource__not_in	ARRAY	Get all the resources which do not have any of these IDs

At most, one of the following:

Name	Type	Notes/Example
parent_id	INTEGER	Get the resources whose parent has this ID
parent__in	ARRAY	Get any resource whose parents have any of these IDs
parent__not_in	ARRAY	Get all resources whose parents do not have any of these IDs

At most, one of the following:

Name	Type	Notes/Example
category_id	INTEGER	Get the resources of the category that has this ID
category__in	ARRAY	Get the resources of the categories that have any of these IDs
category__not_in	ARRAY	Get the resources of all the categories that do not have any of these IDs

You can set the order of the results by setting the STRING value of the parameter **orderby** to one of the following :

- none
- id
- name *(default)*
- slug
- type
- parent_id
- date
- resource__in *(preserve order given in the resource__in array)*

You can set the direction of the ordering of the results by setting the STRING value of the parameter **order** to one of the following :

- ASC *(default)*
- DESC

You can further limit the results based on attributes the resources may have:

Name	Type	Notes/Example
attr_key	STRING	The name of the attribute. Example: network-fqdn
attr_value	STRING	The value of any attribute, or if attr_key is specified, the value of the attribute defined in attr_key.
attr_compare	STRING	If both attr_key and attr_value are given, the results are by default compared based on the value given as attr_value being equal to the value stored in the database. You can optionally change this by setting the STRING value of attr_compare to one of the following: • = *(default)* • != • > • >= • < • <= • LIKE • NOT LIKE • IN • NOT IN • BETWEEN • NOT BETWEEN

When attr_compare is set to IN, NOT IN, BETWEEN, NOT BETWEEN, then attr_value must either be an array or a comma separated string.

You can search on multiple attributes by including an array of attribute options:

Name	**Type**	**Notes/Example**

attributes	ARRAY	`var data = {`
		`"type: "entry",`
		`"attributes": [`
		`{`
		`"attr_key": "_section",`
		`"attr_value": "105",`
		`},`
		`{`
		`"attr_key": "address-mail-state",`
		`"attr_value": "CA",`
		`}`
		`],`
		`"resources_per_page: 10`
		`}`

You can restrict the range of the resources returned.

Name	Type	Notes/Example
resources_per_page	INTEGER	How many resources to return.
offset	INTEGER	How many resources to offset (the initial resource is 0, not 1).
paged	INTEGER	The page to return (starts at 1, not 0). This parameter is provided for convenience and is used to calculate the offset where: offset=(paged-1)*resources_per_page

Example URL	/api/v1/api.php?target=resource&action=get&id=7

add

URL	/api/v1/api.php?target=resource&action=add
Description	Add a resource.
Returns	**Examples:** */api/v1/api.php?target=resource&action=add&meta[name]=apitest&meta* SUCCESSFUL: {"success":1,"message":"Resource added","data":{"id":1077,"name":"apitest","slug":"apitest","type":"entry"," */api/v1/api.php?target=resource&action=add&meta[name]=apitest&meta* ERROR:{"success":0,"message":"Entries must be assigned to a section"}
Required Parameters	

Name	Type	Notes/Example
meta[name]	STRING	Name of the resource
meta[type]	STRING	Type of resource (entry, section, field, ect)

<table>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>meta[parent_id]</td><td>INTEGER</td><td>ID of the parent resource</td></tr>
<tr><td>meta[category_id]</td><td>INTEGER</td><td>ID of the category</td></tr>
</table>
</td></tr>
<tr><td>Required Parameters
(meta[type] = entry)</td><td>
One of the following:
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>meta[section_id]</td><td>INTEGER</td><td>ID of the section that the entry will be assigned to</td></tr>
<tr><td>meta[section]</td><td>STRING</td><td>Slug of the section that the entry will be assigned to</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters
(meta[type] = entry)</td><td></td></tr>
</table>

Name	Type	Notes/Example

fields[]	ARRAY	Entry field values (for fields that have already been assigned to the section) can be populated when the entry is created.
		The format is field[field-slug][field-inst If the field instance is left blank, it will simply be the next value in the instance array. For example:
		fields[network-fqdn][]=e
		would be written in JSON as
		`var fields = {`
		`"network-fqdn": [`
		`"example.com",`
		`"test.com"`
		`]`
		`}`
		A field can be added to a section multiple times. The field instance is used to keep track of which field occurrence we are referring. In this example, the network-fqdn field had been added twice to the section so we were able to store two values for it.

meta[custom_id]	STRING	A custom ID for the entry. In the past this has been called the Resource Holder ID or Customer ID. Most recently it was implemented as a text field with the slug "6c-resourceholder-id." Now it is a fundamental part the entry type resources.

<table>
<tr><td></td><td></td></tr>
<tr><td>Required Parameters
(meta[type] = field)</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>meta[field_type]</td><td>STRING</td><td>Type of field<ul><li>text</li><li>textarea</li><li>radios</li><li>checkboxes</li><li>choicebox</li></ul></td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters
(meta[type] = field)</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>meta[help_block]</td><td>STRING</td><td>Fields can have a line of text under them with instructions</td></tr>
<tr><td>meta[options]</td><td>ARRAY</td><td>Fields of type radios, checkboxes, or choicebox can have multiple options. This could be multiple radio buttons or a choicebox (dropdown) with several options. For example:
meta[type]=field&meta[
Will create a choicebox with dropdown options of Blue and Green.</td></tr>
</table>
</td></tr>
</table>

update

<table>
<tr><td>URL</td><td>/api/v1/api.php?target=resource&action=update</td></tr>
<tr><td>Description</td><td>Update a resource.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: <i>{"success":1,"message":"Resource Updated","data":{"id":"1055","name":"87-child-1","slug":"87-child-1","type</i>
ERROR: <i>{"success":0,"message":"No resource found with ID: 1079"}</i></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>meta[id]</td><td>INTEGER</td><td>ID of resource</td></tr>
<tr><td>meta[type]</td><td>STRING</td><td>Type of resource (entry, section, field, ect)</td></tr>
</table>
</td></tr>
</table>

<table>
<tr>
<td>Optional Parameters
(meta[type] = entry)</td>
<td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>fields[]</td><td>ARRAY</td><td>See "add" documentation</td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr>
<td>Optional Parameters
(meta[type] = section)</td>
<td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr>
<td>fields[]</td>
<td>ARRAY</td>
<td>The fields value should be all the fields that are assigned to the section. Giving an empty array as the fields value will remove all fields from the section.
The format is:
fields[position][key]
The position value is the position that the field will appear in (0 is first). The position value must always be included. An example field format for an existing field could be:
fields[0][id]=2
fields[0][slug]=asset-ser
fields[0][help_block]=so
fields[0][new]=false
▪ Either the id or the slug is required, not both.
▪ When the "new" parameter is not included, FALSE is assumed
If you want to create a new field and assign it to the section, use a format like this:
fields[10][name]=TextAr
fields[10][field_type]=tex
fields[10][new]=true</td>
</tr>
</table>
</td>
</tr>
</table>

delete	
URL	/api/v1/api.php?target=resource&action=delete

<table>
<tr><td>Description</td><td>Delete a resource.</td></tr>
<tr><td>Returns</td><td><b>Examples:</b>
SUCCESSFUL: <i>{"success":1,"message":"Resource deleted."}</i>
ERROR: <i>{"success":0,"message":"No resource found with ID: 57"}</i></td></tr>
<tr><td>Required Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>id</td><td>INTEGER</td><td>ID of the resource</td></tr>
</table>
</td></tr>
<tr><td>Optional Parameters</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Notes/Example</th></tr>
<tr><td>recursive</td><td>BOOL</td><td>When 1, deletes parent and child entries for the resource</td></tr>
</table>
<p>A recursive delete will delete all resources, which are permitted to be deleted, from the bottom up.</p>
<p>Imagine the following hierarchy:</p>
<pre>
A
    B1   B2
C11   C12   C21
C22
</pre>
<p>If a recursive delete is performed on A, but C21 is not deletable, the following</p>
<p>resources would still be deleted: (B1, C11, C12, C22).</p>
<p>B2 would not be deleted because it depends on C21 and A would not be deleted because it depends on B2.</p>
</td></tr>
<tr><td>Example URL</td><td>/api/v1/api.php?target=resource&action=delete&id=57</td></tr>
</table>

How Do I...

If you want to get a jumpstart on common API use cases, you came to the right place! Expand the text areas below for walkthroughs and code samples of API calls...

Context: I unassigned an IP address and now it's in the Holding Tank. Now I want to assign an IP from the Holding Tank. I don't want to unassign an IP randomly, in case it is allocated to a Resource. What are my options?

Click here to expand...

There are 3 options:

1) If you know the specific IP, you can use use the ipam-get api call to determine if it is in Holding:

```
/api/v1/api.php?target=ipam&action=get&cidr=1.2.3.4/32

{
  id:1234,
  cidr:"1.2.3.4",
  ...
  resource_name:"Holding"
}
```

2) If you want to show all blocks/IPs in Holding, you can use the following ipam-get API call:

```
/api/v1/api.php?target=ipam&action=get&resourceQuery={"name":"Holding"}
```

3) If you know the block is in Holding, you can issue another ipam-unassign API call to move it from Holding to Available:

```
/api/v1/api.php?target=ipam&action=unassign&block=1.2.3.4/32
```

Context: I need to create a Resource Holder, assign them an IP block, then subassign some IPs out of that block to two new Resource Holders. What does this look like in Python?

Click here to expand...

We broke this up in a few steps so it's easier to link together.

1) Let's create a Resource Holder called "Ned"

```
query_string    =
'target=resource&action=add&meta[type]=entry&meta[section]=resource-holder&meta[name]=N
+= '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                 = base_url + '?' + query_string + '&hash=' + hash
print 'Create Ned resource holder'
print url, "\n"
data = json.load(urllib2.urlopen(url))
ned_resource_id = data['data']['id']
```

2) Now let's add the 213.29.27.0/24 IP block

```
query_string =    'target=ipam&action=add&rir=RIPE&block=213.29.27.0/24'
query_string    += '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                 = base_url + '?' + query_string + '&hash=' + hash
print 'Create 213.29.27.0/24 block'
print url, "\n"
data = json.load(urllib2.urlopen(url))
```

3) With the block in the system, we can assign 213.29.27.0/24 to "Ned" the Resource Holder

```
query_string =    "target=ipam&action=directAssign&block=213.29.27.0/24&resourceId=%d"
% (ned_resource_id)
query_string    += '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                = base_url + '?' + query_string + '&hash=' + hash
print 'Assign 213.29.27.0/24 block to Ned'
print url, "\n"
data = json.load(urllib2.urlopen(url))
```

4) Since we plan on assigning IPs out of this block, we should enable subassignments for 213.29.27.0/24

```
query_string =
'target=ipam&action=update&block=213.29.27.0/24&allowSubAssignments=true'
query_string    += '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                = base_url + '?' + query_string + '&hash=' + hash
print 'Update 213.29.27.0/24 to allow sub assignments'
print url, "\n"
data = json.load(urllib2.urlopen(url))
```

5) Now let's create a Resource Holder "Tara"

```
query_string =
"target=resource&action=add&meta[type]=entry&meta[section]=resource-holder&meta[name]=T
% (ned_resource_id)
query_string    += '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                = base_url + '?' + query_string + '&hash=' + hash
print 'Create Tara resource holder'
print url, "\n"
data = json.load(urllib2.urlopen(url))
tara_resource_id = data['data']['id']
```

6) To keep it interesting, let's create another Resource Holder "Una"

```
query_string =
"target=resource&action=add&meta[type]=entry&meta[section]=resource-holder&meta[name]=U
% (ned_resource_id)
query_string    += '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                = base_url + '?' + query_string + '&hash=' + hash
print 'Create Una resource holder'
print url, "\n"
data = json.load(urllib2.urlopen(url))
una_resource_id = data['data']['id']
```

7) Assign a /28 block from Ned's 213.29.27.0/24 to Tara

```
query_string =
"target=ipam&action=smartAssign&type=ipv4&rir=RIPE&mask=28&&resourceId=%d&assignedResou
% (tara_resource_id, ned_resource_id)
query_string    += '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                = base_url + '?' + query_string + '&hash=' + hash
print 'Assign block from Ned\'s 213.29.27.0/24 to Tara'
print url, "\n"
data = json.load(urllib2.urlopen(url))
```

8) Then assign another /28 block from Ned's 213.29.27.0/24 to Una

```
query_string =
"target=ipam&action=smartAssign&type=ipv4&rir=RIPE&mask=28&&resourceId=%d&assignedResou
% (una_resource_id, ned_resource_id)
query_string    += '&apiKey=' + api_key
hash            = base64.b64encode( hmac.new(api_secret_key, query_string,
hashlib.sha256).digest() )
url                = base_url + '?' + query_string + '&hash=' + hash
print 'Assign block from Ned\'s 213.29.27.0/24 to Una'
print url, "\n"
data = json.load(urllib2.urlopen(url))
```

Context: I need to set up a DNS server using ProVision's API in PHP, create a zone with a few simple records, and push it to the server.

Click here to expand...

1) Start with providing instance information, API key, Secret Key, and DNS Server IP

```
<?php
//
//
// supply the URL of your ProVision instance, your API key and your Secret key.
$proVisionURL = "https://ops.6connect.com/qa-4.2.2";
$apiKey = "Nnvz8xKZDQUWke6gDxb";
$apiSecretKey = "2YojRbrHnToPZ7cDeFBzcTAvcfMbPVmX";
// this example uses 6connect's PHP APIClient
require_once("APIClient.php");
// set up the connection
$apiClient = new APIClient($proVisionURL, $apiKey, $apiSecretKey);

// save this.  IP of the DNS Server we're creating.
$serverIp = "208.39.106.184";
```

2) Add a DNS server

```
// begin making api calls.  We begin by adding a simple DNS server.
$params = array();
$params['displayName'] = "Example Server";       // the pretty name of the DNS server
$params['server'] = "208.39.106.184";        // the IP of the DNS Server
$params['active'] = 1;            // whether or not this server is currently enabled
$params['transferType'] = "SCP";                                    // we are using an
ISC Bind server which we will communicate with via SCP
$params['username'] = "6connect";         // the username used to SCP zones to this
server
$params['password'] = "password";         // the password used to SCP zones to this
server
$params['port'] = 22;                                               // the port used
to SCP zones to this server
$params['serverType'] = "master";         // whether this server is a master or a
slave
$params['SOA'] = "ns1.dns.6connect.net. hostmaster.6connect.net.";  // the default SOA
$params['remoteDirectory'] = "/tmp/";        // where to place the zone files on the
server
$params['namedConfPath'] = "/tmp/";         // the path to the zones within the
configuration file.  Usually the same as 'remoteDirectory'
$params['postCommand'] = "touch /tmp/allFinished";     // the command to execute on
the server after the transfer is complete.
// add the server
$apiResponse = $apiClient->sendRequest('dnsServer', 'add', $params);
if ($apiResponse->status == 1) {
 echo "Successfully added DNS Server '" . $params['displayName'] . "'\n";
} else {
 echo "Could not add DNS Server '" . $params['displayName'] . "' !\n";
 die();
}

// now we fetch the id of our newly created server
$params = array();
$apiResponse = $apiClient->sendRequest('dnsServer', 'get', $params);
$data = $apiResponse->data;
for ($i = 0; $i < count($data); $i++) {
 if ($data[$i]['server'] == $serverIp) {
   // we save the id for later.
   $serverId = $data[$i]['id'];
   break;
 }
}
echo "Server Id is: $serverId \n";
```

3) Create a zone

```
// okay, DNS server is set up -- time to create a zone.
$params = array();
$params['zoneName'] = "atestzone.com";    // zone name
$params['zoneResourceId'] = 1;      // the owner of the zone; 1 is default
$apiResponse = $apiClient->sendRequest('zone', 'add', $params);
if ($apiResponse->status == 1) {
    echo "Successfully added DNS Zone '" . $params['zoneName'] . "'\n";
} else {
    echo "Could not add DNS Zone '" . $params['zoneName'] . "' !\n";
    die();
}
// snag the zoneId for later.
$zoneId = $apiResponse->data;
```

4) Add Zone records

```
// Lets add some records to our new zone!
$params = array();
$params['newRecordZoneId'] = $zoneId;             // parent zone id
$params['newRecordType'] = 'A';                  // record type
$params['newRecordHost'] = "www";                      // the host field of the record
$params['newRecordValue'] = "1.2.3.4";                 // the value field of the
record
$params['newRecordTTL'] = "3600";                      // the value of the TTL field
$apiResponse = $apiClient->sendRequest('record', 'add', $params);
if ($apiResponse->status == 1) {
    echo "Successfully added Record to zone #$zoneId\n";
} else {
    echo "Could not add Record to zone #$zoneId!\n";
    die();
}

$params = array();
$params['newRecordZoneId'] = $zoneId;                   // parent zone id
$params['newRecordType'] = 'A';                         // record type
$params['newRecordHost'] = "dev";                       // the host field of the
record
$params['newRecordValue'] = "2.3.4.5";               // the value field of the record
$params['newRecordTTL'] = "3600";                   // the value of the TTL field
$apiResponse = $apiClient->sendRequest('record', 'add', $params);
if ($apiResponse->status == 1) {
    echo "Successfully added Record to zone #$zoneId\n";
} else {
    echo "Could not add Record to zone #$zoneId!\n";
    die();
}

$params = array();
$params['newRecordZoneId'] = $zoneId;                  // parent zone id
$params['newRecordType'] = 'A';                        // record type
$params['newRecordHost'] = "cloud";                    // the host field of the record
$params['newRecordValue'] = "3.4.5.6";                 // the value field of the
record
$params['newRecordTTL'] = "3600";                      // the value of the TTL field
$apiResponse = $apiClient->sendRequest('record', 'add', $params);
if ($apiResponse->status == 1) {
    echo "Successfully added Record to zone #$zoneId\n";
} else {
    echo "Could not add Record to zone #$zoneId!\n";
    die();
}
```

4) Link the Zone to the new DNS server and push

```
// Okay, we have some zones with records.  Time to link this zone to the new DNS Server
$params = array();
$params['serverId'] = $serverId;      // the server id
$params['zoneId'] = $zoneId;       // the zone id
$params['serverSlave'] = 0;        // not a slave zone
$apiResponse = $apiClient->sendRequest('zoneLinkage', 'add', $params);
if ($apiResponse->status == 1) {
    echo "Successfully linked Zone #$zoneId to server #serverId\n";
} else {
    echo "Could not link Zone #$zoneId to server #serverId!\n";
    die();
}
// now we can push the zone to the server
$params = array();
$params['zoneId'] = $zoneId;                            // the zone id to push
$apiResponse = $apiClient->sendRequest('dnsServer', 'transferSingle', $params);
if ($apiResponse->status == 1) {
    echo "Zone pushed!\n";
} else {
    echo "Could not push zone!\n";
    die();
}
?>
```

Context: How do I update the notes field of an IP block using the API in PHP?

Click here to expand...

1) Start with providing instance information, API key, Secret Key, and DNS Server IP; set up the connection

```
<?php
//
// This file walks through an example of how to look up a block id number
// in ProVision, and then use it to attach a notes field
//
// supply the URL of your ProVision instance, your API key and your Secret key.
$proVisionURL = "https://ops.6connect.com/qa-4.2.2";
$apiKey = "32-5DAYTJEE2TZHOFOB";
$apiSecretKey = "48b278ec873bda473a323dbc467f8669";
// this example uses 6connect's PHP APIClient
require_once("APIClient.php");
// set up the connection
$apiClient = new APIClient($proVisionURL, $apiKey, $apiSecretKey);
```

2) Split the metadata you want to have showing in the notes, and find the block with which it should associate

```
// lets imagine we have some metadata in the following format:
//
$string = "10.1.245.5||DFW7|HP a5820x|its-erp.dfw7.us.corp||";
//
// And we want to insert the Colo, Server type, and hostname into the Notes field of
the IP block

// first we split everything up
$pieces = explode("|", $string);
$ip = $pieces[0];
$colo = $pieces[2];
$type = $pieces[3];
$host = $pieces[4];

// then we pull the IP block using the API.
$params = array();
$params['block'] = "$ip/32";    // the IP block we're looking for, with netmask
// make the call to the IPAM-GET endpoint
$apiResponse = $apiClient->sendRequest('ipam', 'get', $params);
if ($apiResponse->status != 1) {
 echo "Could not pull information for block: $ip/32 !\n";
 die();
}
if (trim($apiResponse->message) == "No blocks found.") {
 echo "IP block $ip/32 not found in ProVison!\n";
    die();
}

// we now have the ipObject associated with this IP block.  Lets get its block id.
$blockId = $apiResponse->data[0]['id'];
echo "IP block id: $blockId \n";
```

3) Update the block with the notes

```
// it is time to update the block with the new notes.
$notes = "$colo,$type,$host";
$params = array();
$params['id'] = $blockId;
$params['notes'] = $notes;
// make the call to the IPAM-UPDATE endpoint
$apiResponse = $apiClient->sendRequest('ipam', 'update', $params);

// and done!
echo $apiResponse->message . "\n";
```

Context: I need to attach the DHCP module as a child

Click here to expand...

DHCPv2 functionality is enabled on a particular resource by attaching a DHCP Module as a child. A command to do this is as follows:

```
            [ProVision root]/api/v1/api.php?target=resource&action=add

            data:
meta[type]: dhcp_module
meta[name]: [parent resource id] DHCP Module
meta[parent_id]: [parent resource id]
```

The special resource type “dhcp_module” indicates to ProVision that the DHCP system is enabled for the parent object. The attributes associated with the “dhcp_module” resource govern the DHCP system's behavior.

Updating the attributes of a DHCP Server uses a Resource Update command:

```
[ProVision root]/api/v1/api.php?target=resource&action=update&meta[id]=2178
&meta[type]=dhcp_module&fields[_dhcp_attributes][]={"type":"ISC","notes":"notes go
here","username":"username","port":"port","config_test":"/etc/init.d/dhcpd
configtest","server_stop":"/etc/init.d/dhcpd stop","server_start":"/etc/init.d/dhcpd
start","config_path":"/tmp/dhcpd.conf","option_routers":"192.168.0.0","option_domain_na
line 1","freeLine2":"free line 2","freeLine3":"free line 3"}
```

This command appears rather complicated, but can be broken apart into reasonable pieces. The first section:

```
target=resource&action=update&meta[id]=2178&meta[type]=dhcp_module
```

is familiar from other parts of ProVision. We are updating a resource of type “dhcp_module” whose resource id is 2178. The second section of the command details the update values, starting with

```
fields[_dhcp_attributes][]=
```

which contains a JSON-encoded string of all the fields specific to a DHCP server's function. When expanded into its full object form it is substantially easier to digest:

```
{
            "type":"ISC",
            "notes":"notes go here",
            "username":"username",
            "port":"port",
            "config_test":"/etc/init.d/dhcpd configtest",
            "server_stop":"/etc/init.d/dhcpd stop",
            "server_start":"/etc/init.d/dhcpd start",
            "config_path":"/tmp/dhcpd.conf",
            "option_routers":"192.168.0.0",
            "option_domain_name_servers":"ns1.6connect.com",
            "option_domain_name":"6connect.com",
            "authoritative":"1",
            "default_lease_time":"600",
            "max_lease_time":"7200",
            "local_port":"67",
            "log_facility":"local7",
            "password":"password",
            "server_ip":"192.168.0.1",
            "freeLines":3,
            "freeLine1":"free line 1",
            "freeLine2":"free line 2",
            "freeLine3":"free line 3"
}
```

This object describes all the most common DHCP server configuration options. For a full explanation of each of the fields, see the Detailed API Specification later in this document.

Please note that the object above must be passed to the DHCP system as a JSON-encoded string. It must be passed into the special “_dhcp_attributes” attribute for it to be functional, as in the example URL.

Context: I need to add a DHCP aggregate

Click here to expand...

An example command to add a DHCP Aggregate is:

```
[ProVision root]/api/v1/api.php?target=ipam&action=add&block=192.168.0.0/24&rir=
1918&vlan=&tags=&region=&resourceId=1282&allowSubAssignments=true
```

The important part to note is that the IP block is being assigned to resourceId 1282, which corresponds to the DHCP Available resource. The DHCP Available resource is a system-level resource which is used to hold all unassigned DHCP IP addresses. Every instance has its own DHCP Available resource, whose id can be found with the following command:

```
[ProVision root]/api/v1/api.php?target=resource&action=get&slug=dhcp-available
```

New DHCP subnets and hosts draw their IPs from this pool. If there are no IPs in the DHCP Available pool new subnets and hosts will not be able to be created.

DHCP IP aggregates are fetched, updated, split, and deleted using the standard IPAM management API endpoints. Please see the IPAM

API Documentation. for details.

Context: I need to add a DHCP Pool

Click here to expand...

Similar to how the “dhcp_module” resource was created above, the command to create a DHCP Pool is as follows:

```
[ProVision root]/api/v1/api.php?target=resource&action=add&meta[type]=dhcp_pool
&meta[name]=New
Subnet&fields[_dhcp_type][]=subnet&fields[_dhcp_pool_attributes][]={"mac":"","rangeStar
Line 1","freeLine2":"Free Line 2","freeLine3":"Free Line 3"}
```

The first half of this command is relatively straightforward:

```
target=resource&action=add&meta[type]=dhcp_pool&meta[name]=New Subnet
```

This section informs the API that we wish to create a new, empty “dhcp_pool” resource whose name is “New Subnet.”

```
fields[_dhcp_type][]=subnet&fields[_dhcp_pool_attributes][]={"mac":"","rangeStart":"",
"rangeEnd":"","freeLines":3,"freeLine1":"Free Line 1","freeLine2":"Free Line
2","freeLine3":"Free Line 3"}
```

The second half of the command behaves in a similar manner to the “dhcp_module.” The “_dhcp_pool_attributes” field holds a JSON-encoded string which describes the dhcp_pool resource. When expanded, the JSON string becomes the following object:

```
{
            "mac":"",
            "rangeStart":"",
            "rangeEnd":"",
            "freeLines":3,
            "freeLine1":"Free Line 1",
            "freeLine2":"Free Line 2",
            "freeLine3":"Free Line 3"
}
```

For a full explanation of each of the fields, see the Detailed API Specification.

Please note that the object above must be passed to the DHCP system as a JSON-encoded string. It must be passed into the “_dhcp_pool_attributes” attribute for it to be functional, as in the example URL.

Once a dhcp_pool resource is in the system it can be updated with IP data obtained from the IP Management system. Under DHCPv2, the DHCP system uses all the standard IPAM API endpoints and can make use of both the smartAssign and the directAssign methods. Please see the IPAM API documentation for details.

Context: I need to link a DHCP pool to a DHCP server

Click here to expand...

An example of building a link between a dhcp_pool and a DHCP Server is:

```
[ProVision root]/api/v1/api.php?target=resource&action=addLink&resource_id1=2178&
resource_id2=1452&relation=dhcpPoolLink
```

The Resource Linkage system controls which DHCP Pools are associated with a given DHCP Server. In the case of linking a DHCP Pool to a DHCP Server, the relation used is “dhcpPoolLink”. This is a directional link, so it is important that resource_id1 and resource_id2 do not get confused.

```
relation:  “dhcpPoolLink”
resource_id1:  the id of the dhcp_module this pool is being linked to
resource_id2:  the id of the dhcp_pool being linked
```

⚠ It is very important that resource_id1 not be confused with resource_id2. The link will not function with the values reversed.

To undo the above and break a DHCP Pool link, use the same command but substitute “deleteLink” for the action “addLink”.

```
[ProVision root]/api/v1/api.php?target=resource&action=deleteLink&resource_id1=2178&
resource_id2=2179&relation=dhcpPoolLink
```

Context: I need to push a DHCP config file

Click here to expand...

Once the server has been configured according to the previous sections, hitting the following API endpoint will trigger a DHCP push:

```
[ProVision root]/api/v1/api.php?target=dhcp&action=push&id=2178
```

The “id” in the above string is the id of the dhcp_module resource attached to the server you whose configuration is to be pushed. The API return payload will contain success or failure codes, as well as a description of any errors which might have occurred.

When a DHCP configuration file is pushed an SSH connection is opened to the configured server using the user, password, and port supplied to the '_dhcp_attributes' attribute on the dhcp_module resource. If the system successfully connects, it will assemble a DHCP configuration from the information given to the dhcp_module's '_dhcp_attribute' attribute and then parse and add in all linked dhcp_pool resources.

After the assembled file has been transferred to the DHCP server it will be placed in the location given by 'config_path' on the dhcp_module, and then the command described in 'config_test' will be run to determine whether or not this new file parses correctly. If 'config_test' is blank or omitted, this step is skipped.

If the file parses correctly the DHCP will be stopped and restarted according to the 'server_stop' and 'server_start' commands on the DHCP module. If there are errors at any point the system backs out, replaces old config files, and reports the errors via the 'message' return field of the API call.

CLI (Alpha)

Command Line Interface - ALPHA

Overview

The command line interface for ProVision is a beta feature that has been release for feedback.

ⓘ **How to Access the CLI from your browser**
When logged into ProVision via a web browser, use the key combination "**Control+Shift+S**" or "**Control+Shift+~**" to access/close the CLI

CLI Commands (ALPHA)

⚠ **CLI Help**
When in the CLI, type:

```
ipam man
```

for sample commands and syntax

Currently, the CLI supports the following commands:

```
ipam <command> [-t] [<cidr>] [<resource name>] [<args>]

    show:     show details for a block. Examples:

                  - "ipam show 10.0.0.0/8" will show details for the block 10.0.0.0/8

                  - "ipam show holding" will show details for all blocks in the Holding
Tank

                  - "ipam show "<resource name>"" will show details for all blocks
assigned to <resource name>



    add:      add a block. ex: "ipam add 192.168.0.0/24"



    update:   update attributes for a block. ex: ipam update 192.168.0.0/24 --vlan=100
tags=VM,Dev



    assign:   assign a block to a resource. ex: ipam assign 192.168.0.0/24 "<resource
name>"



    assign:   smart assign a block to a resource. ex: ipam assign --mask=24 --rir=ARIN
--type=ipv4 "<resource name>"



    unassign: reclaims a block from a resource and places it in the Holding Tank. If the
block is already in the holding tank, reclaims it an makes it available.
```

Help & Support

For setup assistance or additional information, you can contact our support team at support@6connect.com.

For tutorials, frequently asked questions, feedback, or additional resources such as import templates and previous documentation versions, please follow the links listed below.

Table of contents

Tutorials

Tutorials

Here we have grouped together video tutorials for various tasks and UI components. We link to these in the Getting Started area in the documentation, but you can also browse them individually depending on your needs. If you have suggestions for content - please send them to support@6connect.com.

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FAQ

How can I manage overlapping/duplicate IP blocks?

When breaking apart blocks - use the LIR functions (Admin->IPAM Admin->RIR/LIR Manager) to differentiate blocks for 1918 space.

On the dashboard, I see "n+1" users - why?

The users list includes a "system user" that is only used by ProVision internally in the application.

I have already SWIPed subnets to ARIN. What happens if I try to SWIP from ProVision, but the block is already SWIPed?

In the case when a user already has SWIPped blocks to ARIN, 6connect checks prior to actually performing a SWIP. In the process, if the IP block is already SWIPped, it will check for existing ARIN customer data and update the 6connect data to reflect what ARIN has on file. Once that is complete, the user can then perform a de-SWIP function using ProVision.

How does 6connect avoid duplicate assignments or resolve conflicts?

When you make an API request to assign a block, if the block is already assigned to another resource, you will receive an error. If your process is to search for and then assign blocks, the Smart Assign API call may be very helpful. That call combines the search and assignment into one action.

My VM works, but I am getting a "URL Not Found" error when using ProVision

Please make sure that URL rewriting is enabled in your instance (apache mod_rewrite)

My DNS zone views aren't working as they should!

In some legacy instances we have seen zone record-view linkages come out of alignment and result in unexpected behavior.

BACKUP YOUR DATABASE
Please note that the following mysql commands modify your database! Please take a backup copy of your database before performance any database modifications.

First, verify the error with the following mysql commands:

```
SELECT count(*) FROM `zone_server_linkage` as t1
INNER JOIN `records` as t2 ON t1.`zoneid` = t2.`zone_id`
INNER JOIN `dns_views` as t3 ON t1.`serverid` = t3.`server_id` AND
`name` = '_6connectDefault'
LEFT JOIN `dns_view_record_linkage` as t4 ON t2.`id` = t4.`record_id`
AND t3.`id` = t4.`view_id`
WHERE t4.`id` IS NULL;
```

If the reply comes back non-zero, then your database is most likely exhibiting unexpected behavior.

The following mysql commands will re-align all the record-view linkages:

```
INSERT INTO `dns_view_record_linkage` SELECT '', t2.`id` as `record_id`,
t3.`id` as `view_id` FROM `zone_server_linkage` as t1
INNER JOIN `records` as t2 ON t1.`zoneid` = t2.`zone_id`
INNER JOIN `dns_views` as t3 ON t1.`serverid` = t3.`server_id` AND
`name` = '_6connectDefault'
LEFT JOIN `dns_view_record_linkage` as t4 ON t2.`id` = t4.`record_id`
AND t3.`id` = t4.`view_id`
WHERE t4.`id` IS NULL;
```

Contact support(support@6connect.com) if you have any additional questions or this does not resolve the issue.

How can I 'reserve' IP space?

To create a reserved pool of IP space, you can create a Section called "Reserved", add the IPAM gadget to it, then create an Entry with that

Section to be the address group. From there, use the IPAM gadget and the IPAM Manage page to assign and unassign IP space from that pool.

The workflow for this would be:

1. Assign IP space to the "Reserved" Section.
2. When you are ready to pull space from "Reserved", unassign the desired block. This moves it to the holding tank.
3. Override the holding tank to make the space "available". This can be done in the IPAM manager via the "Override Holding" wrench option, or a manual 'pull out of holding' API call.
4. Assign the block to the desired Resource.

How do I change the URL of my ProVision instance?

Depending on your version of ProVision, you may need both steps. Edit the file <6connect web root>/data/globals.php and:

1) Change the $hostname variable to the new value

2) Change the $base_url to the new value

Please note that you may also need to update the SSL certs, httpd settings, etc.

Additional Resources

- Import Templates
- List of Abbreviations
- Previous Documentation Versions

Import Templates

Import Templates

Downloadable Import Templates

Below you can find CSV templates for uploading Resource, Contact and IP data.

For DNS Import examples and a walkthrough, visit the DNS Import page.

File	Mo
IP-import-sample_v1.csv	ab
import-zone-assign.csv	ab
customer-import-sample.csv	ab
contact-import-sample_v1.csv	ab

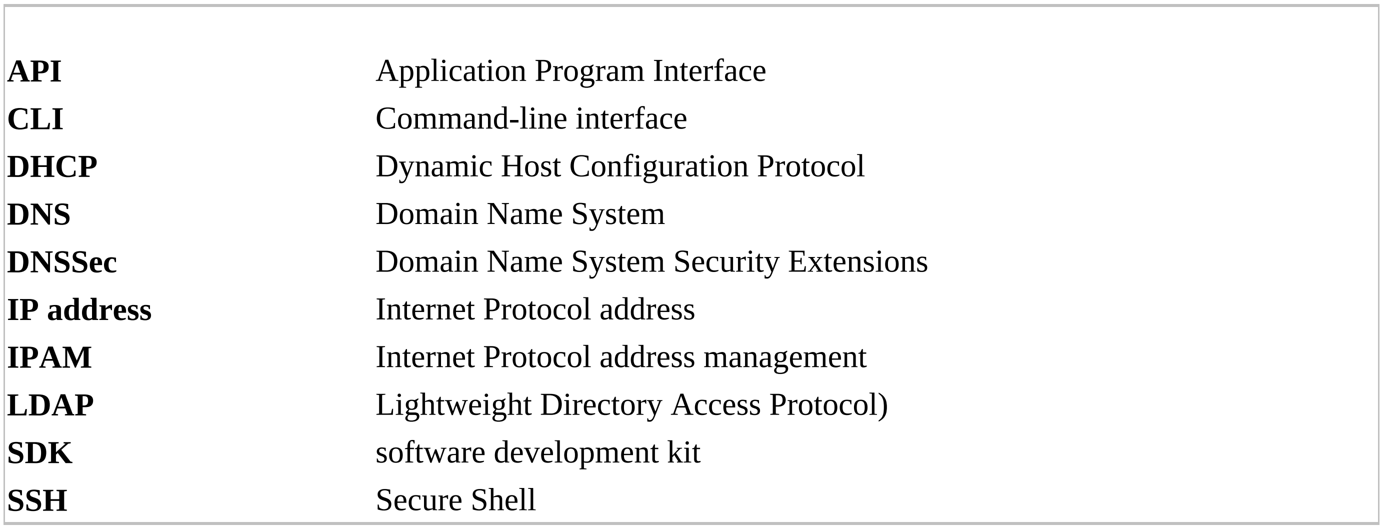
Drag and drop to upload or browse for files

Download All

List of Abbreviations

List of Abbreviations:

Edit Document



API	Application Program Interface
CLI	Command-line interface
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DNSSec	Domain Name System Security Extensions
IP address	Internet Protocol address
IPAM	Internet Protocol address management
LDAP	Lightweight Directory Access Protocol)
SDK	software development kit
SSH	Secure Shell

Abbreviation List.xlsx

Previous Documentation Versions

Documentation for Previous Versions of 6connect software:

Archived Online Documentation:

ProVision v 5.0.3 Documentation

Archived PDF Documentation:

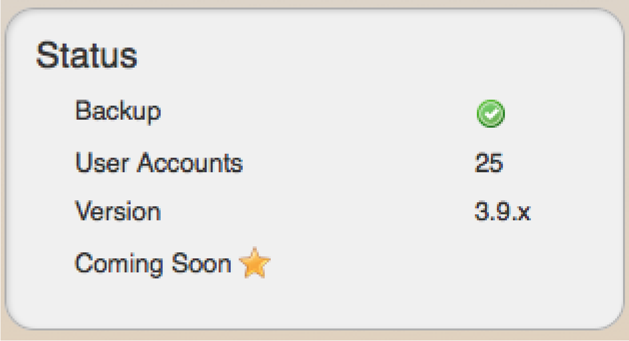
PDF Documentation

File	Mo
6connect-Service_Provider_Edition_3…	*ab*
6C-v3.0-Manual.pdf	*ab*
6C-v2.5.13-Manual.pdf	*ab*
6c-ProVision-v4.2.1_Manual.pdf	*ab*

Download All

Feedback and Feature Requests

For information on future releases, click on the "Coming Soon" link on the Dashboard.



Status

Backup	✓
User Accounts	25
Version	3.9.x
Coming Soon ★	

You can also submit product feedback and feature requests to support@6connect.com

6connect Scanlet (Beta)

Scanlet (Beta)

Download Information

Download the latest version here

System Requirements

Java: Download Here

Known Issues

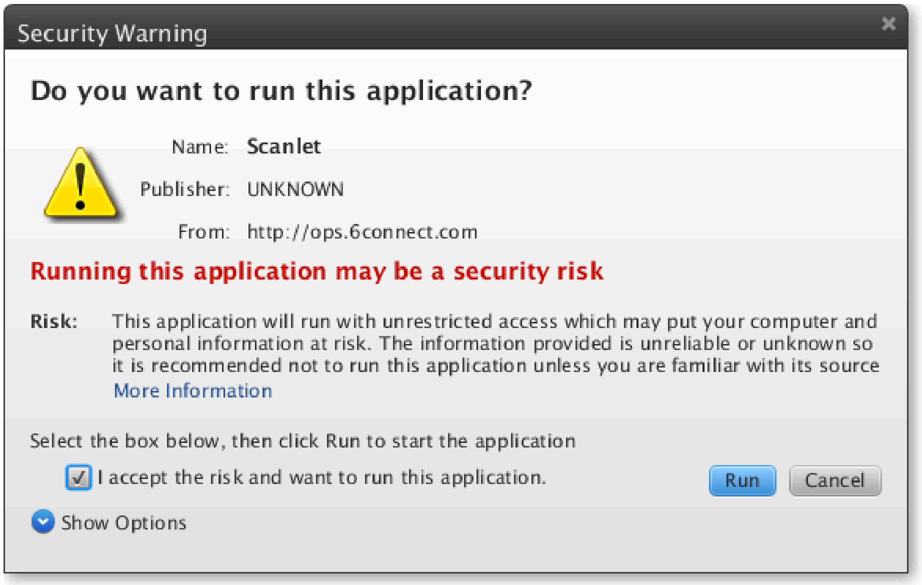
- In some cases, the application may appear to hang before it finishes. This is usually related to timeouts not being addressed quickly. We erred on the side of caution to ensure that devices were located, but the result is that sometimes unresponsive devices can make the scan take longer than expected.

Documentation

This software is currently in Beta - please forward all feedback to gary@6connect.com

Starting Scanlet

When you open the download URL, you should see the Java plugin activate and should be prompted with a security warning to confirm that you are knowingly running the application.



Do you want to run this application?

Name: Scanlet
Publisher: UNKNOWN
From: http://ops.6connect.com

Running this application may be a security risk

Risk: This application will run with unrestricted access which may put your computer and personal information at risk. The information provided is unreliable or unknown so it is recommended not to run this application unless you are familiar with its source

Select the box below, then click Run to start the application

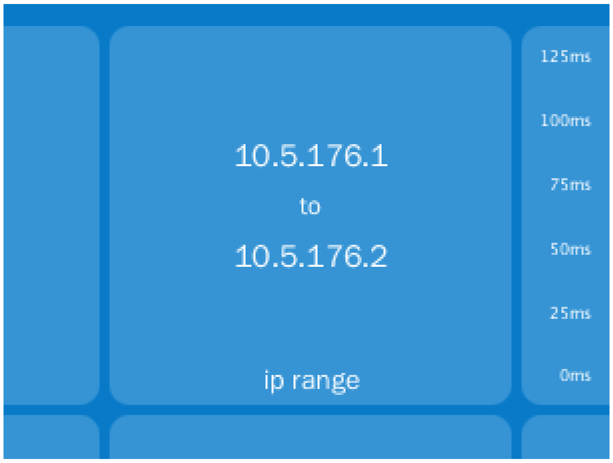
☑ I accept the risk and want to run this application.

Upon checking the box and clicking the "Run" button, it should automatically bring up the UI in your browser.

If this does not work, try to click the link at the bottom left of the webpage to manually open the application.

Using Scanlet

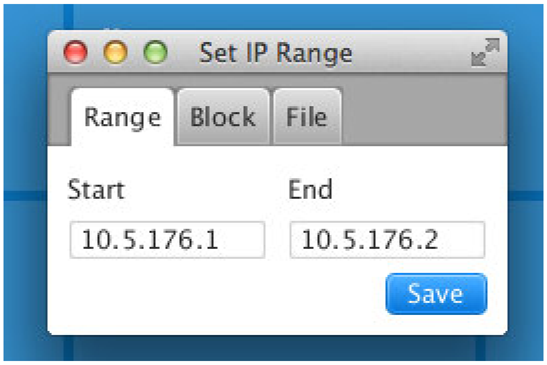
Running a Scan



10.5.176.1

to

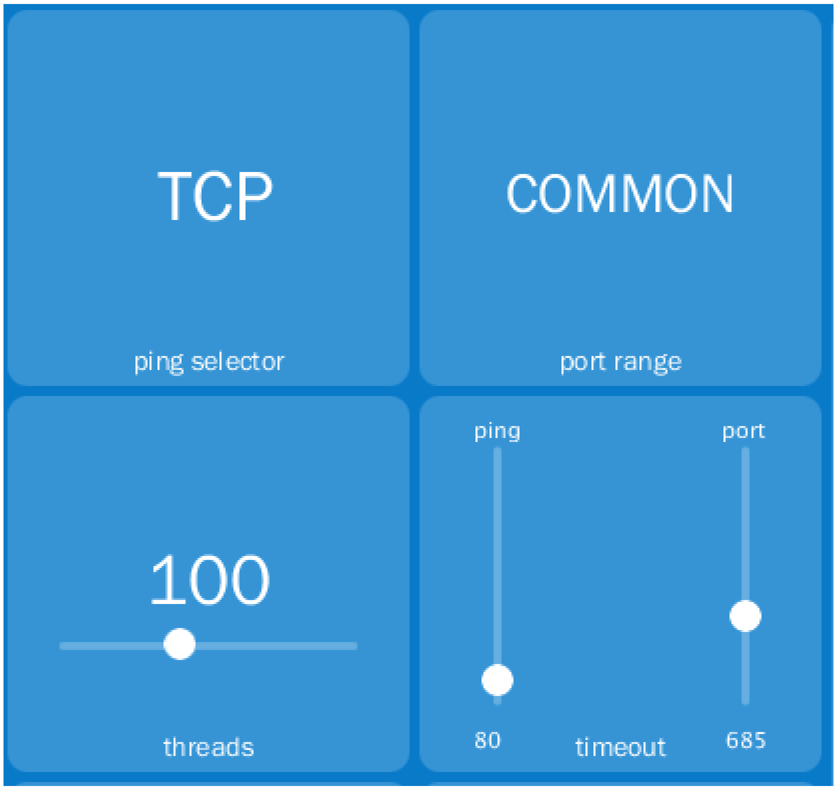
10.5.176.2



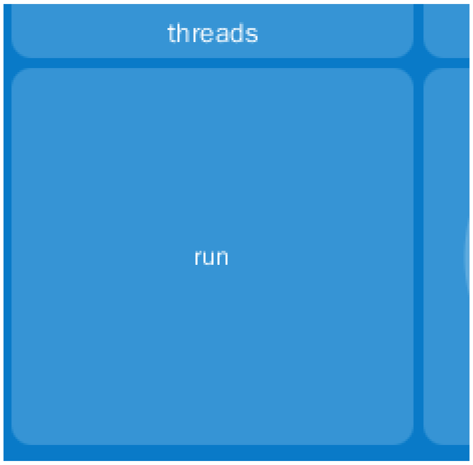
Start: 10.5.176.1

End: 10.5.176.2

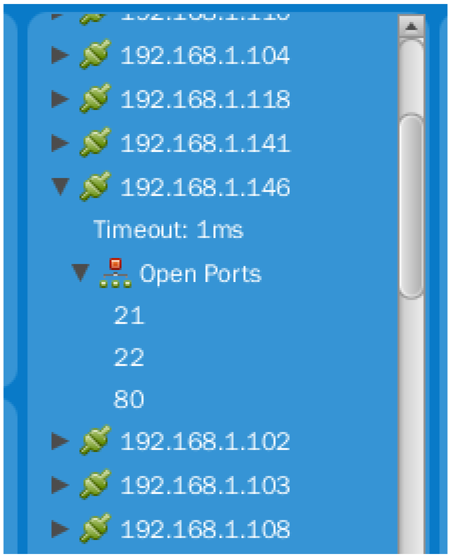
STEP 1: Set the IP range that you would like to scan. If you click on the "IP Range" square, you will have a window open to set the parameters.



STEP 2: Select the additional parameters for your scan (ping selector, Ports, thresholds, etc.)



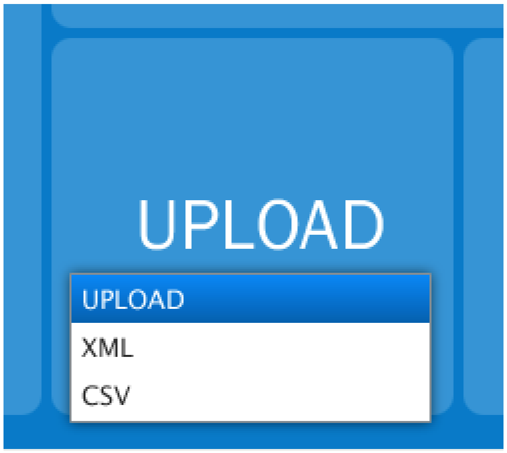
STEP 3: Run the scan!



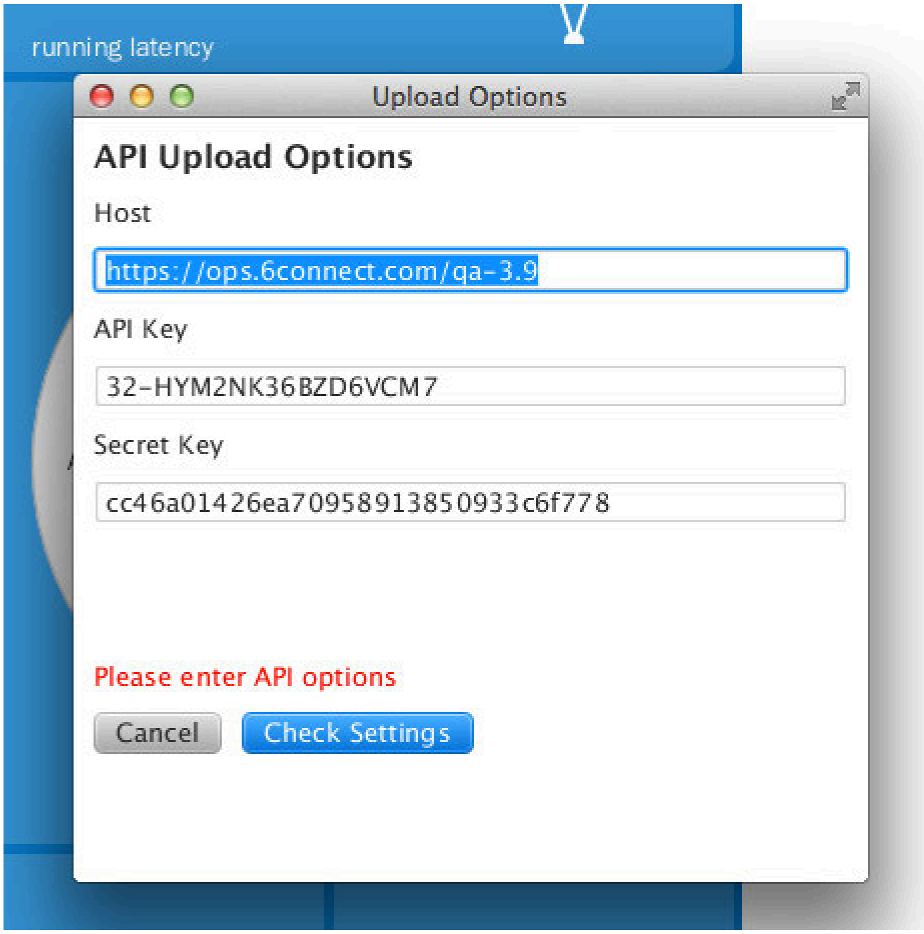
STEP 4: View the scan results. You can expand the arrows per IP address, view Port information or MAC address data.

Uploading/Saving scan results

Option 1: If you have a 6connect ProVision instance to test with, you can upload your scan results into the platform using the API with the "UPLOAD" selection.



When you click on the "SAVE" button, you will be directed to enter the API information for your particular instance. Discovered devices will be imported as type "Scanlet". We will be pushing out an update that will allow you to modify different types and even allow some more detailed heirarchies from the initial discovery model.



API Upload Options

Host

https://ops.6connect.com/qa-3.9

API Key

32-HYM2NK36BZD6VCM7

Secret Key

cc46a01426ea70958913850933c6f778

Please enter API options

Option 2: If you would like to save an XML/CSV version locally to your computer, simply select the format you prefer. When you click on the Save button, it will prompt you for a location to save the file.

ProVision 5.1.0

ProVision 5.1.0 is a major release with significant new features.

PHP Compatibility
Please note that ProVision 5.x requires php 5.5.+. For local installations, please upgrade php prior to installing the upgrade. Also ensure that the correct Sourceguardian php extension is loaded for the new version of php.

Contact 6connect at info@6connect.com to schedule a demo or get more information.

New Features

(CFR denotes customer requested)

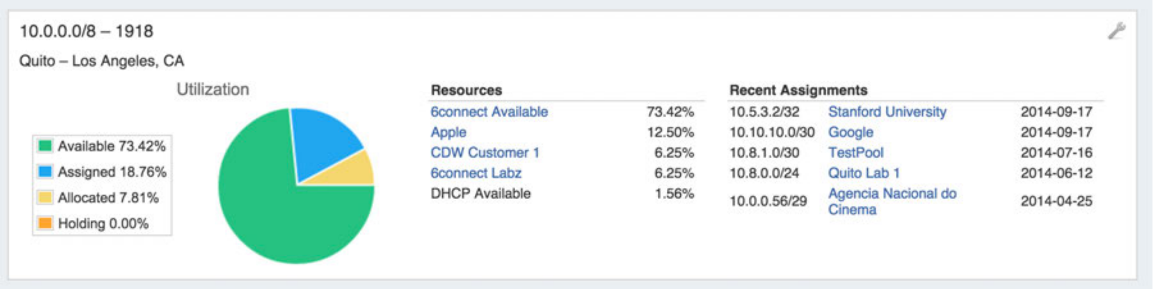
UI Updates:

Version 5.1.0 introduces a new look to ProVision! Minor graphical and user consistency improvements have been made throughout ProVision, creating a cleaner user experience.

Click here to expand...

Included in the UI changes, but not limited to:

- Throughout ProVision, the Action Menu (wrench icon) has been replacing individual action icons. Clicking on the wrench will open a menu of options specific to the ProVision area.
- Update color scheme, css, and many button styles: Close buttons are now a small "x" in the top right corner of a popup box, rather than an offset circle icon. Many delete icons have been replaced with a larger "Delete" button.
- IPAM - Top Level Aggregates have new look! They now show a chart view detailing allocations, the top five resources assigned under an aggregate, and recent assignments. The "Manage", "Template" (Merge / Clean Up), and "Delete" functions are now contained within the Action Menu (wrench icon).



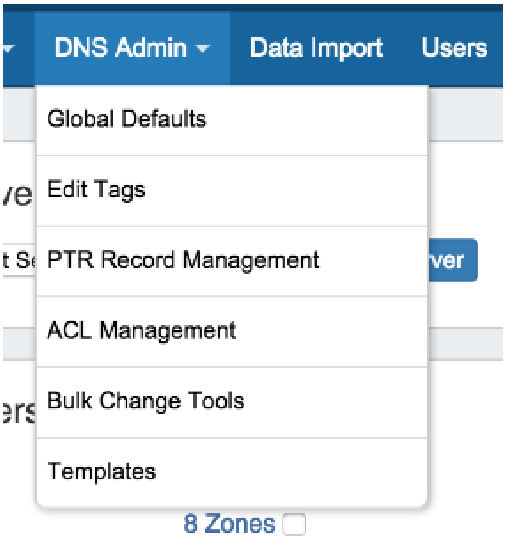
10.0.0.0/8 – 1918

Quito – Los Angeles, CA

Resources	
6connect Available	73.42%
Apple	12.50%
CDW Customer 1	6.25%
6connect Labz	6.25%
DHCP Available	1.56%

Recent Assignments		
10.5.3.2/32	Stanford University	2014-09-17
10.10.10.0/30	Google	2014-09-17
10.8.1.0/30	TestPool	2014-07-16
10.8.0.0/24	Quito Lab 1	2014-06-12
10.0.0.56/29	Agencia Nacional do Cinema	2014-04-25

- DNS Admin now has a drop down menu to quick-select common links.



- The **Templates** tab has been removed from the Admin tabs, and included under the DNS Admin drop-down menu.
- Peering Import has been removed from the **Peering** tab dropdown menu, look for it instead in Admin-> Data Import

Reverse API Tools - Beta

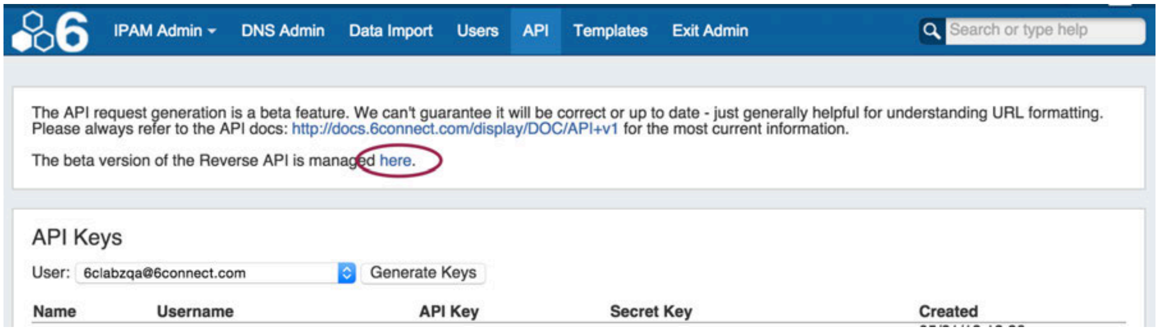
Reverse API calls and UI elements have been added to ProVision. This is a powerful tool that allows for integration with outside APIs to improve workflow and create custom display content.

Included in this feature:

- Reverse API calls: Available at Reverse API - Detail. An overview of the API format is available in the documentation at Reverse API
- Reverse API ProVision page: This page allows for endpoints to be built and provides a text editor to create presentation JavaScript commands.

Click here to expand...

The Reverse API Management page is accessed from the **API** tab in the Admin section of Provision, just click on the circled link.



The API request generation is a beta feature. We can't guarantee it will be correct or up to date - just generally helpful for understanding URL formatting. Please always refer to the API docs: http://docs.6connect.com/display/DOC/API+v1 for the most current information.

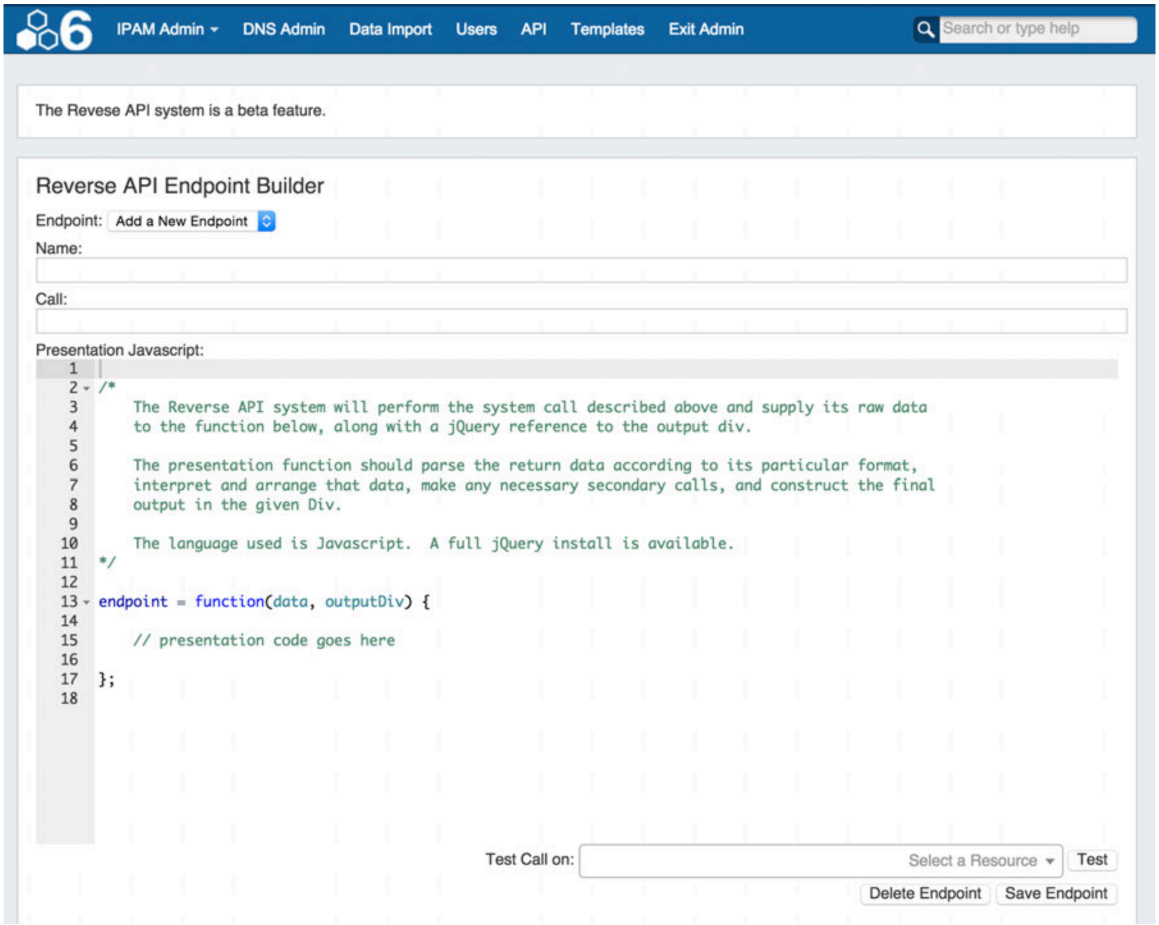
The beta version of the Reverse API is managed here.

API Keys

User: 6clabzqa@6connect.com

Name	Username	API Key	Secret Key	Created

Add endpoints, insert presentation scripts, and test calls against selected Resources. See Reverse API 1 for more details.



The Revese API system is a beta feature.

Reverse API Endpoint Builder

Endpoint: Add a New Endpoint

Name:

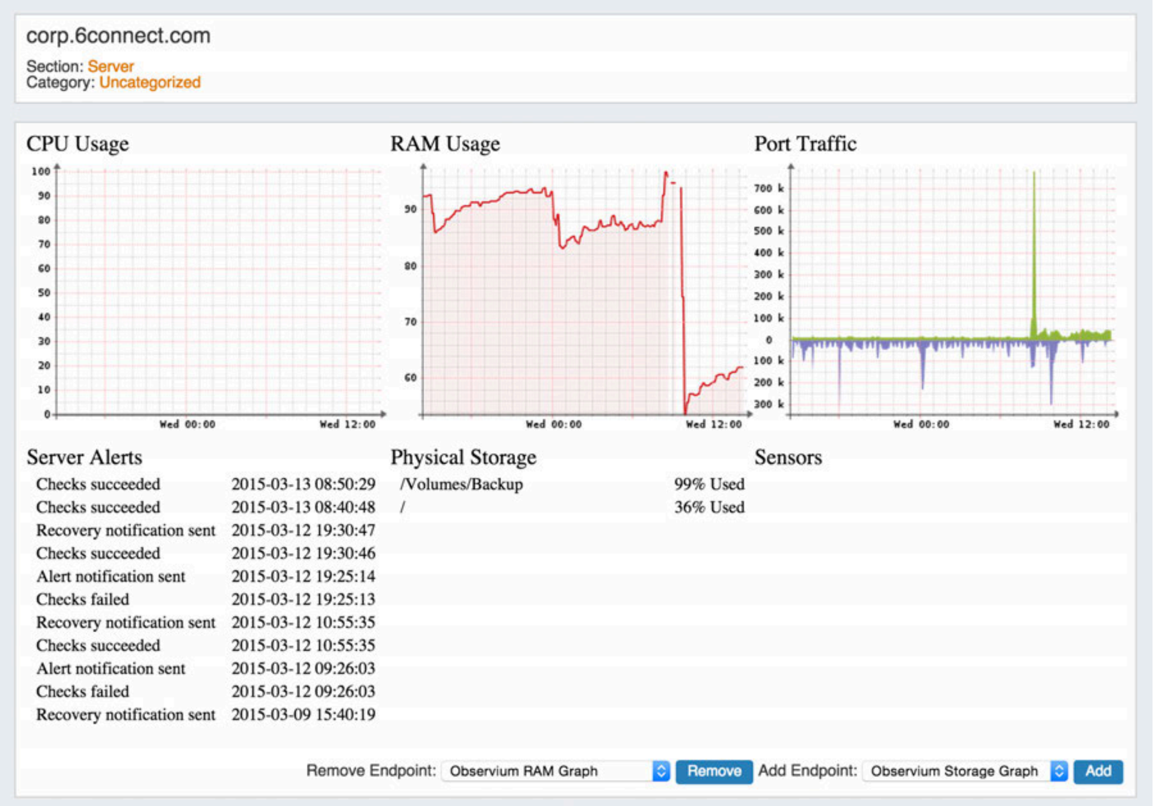
Call:

Presentation Javascript:

```

/*
    The Reverse API system will perform the system call described above and supply its raw data
    to the function below, along with a jQuery reference to the output div.

    The presentation function should parse the return data according to its particular format,
    interpret and arrange that data, make any necessary secondary calls, and construct the final
    output in the given Div.

    The language used is Javascript.  A full jQuery install is available.
*/

endpoint = function(data, outputDiv) {

    // presentation code goes here

};

```

Test Call on:

- Reverse API Console Gadget: This new gadget allows for constructed endpoints to be selected, and their presentation code displayed on a Resource Entry page. For more information, see Gadgets.



corp.6connect.com

Section: Server
Category: Uncategorized

Server Alerts

Checks succeeded	2015-03-13 08:50:29
Checks succeeded	2015-03-13 08:40:48
Recovery notification sent	2015-03-12 19:30:47
Checks succeeded	2015-03-12 19:30:46
Alert notification sent	2015-03-12 19:25:14
Checks failed	2015-03-12 19:25:13
Recovery notification sent	2015-03-12 10:55:35
Checks succeeded	2015-03-12 10:55:35
Alert notification sent	2015-03-12 09:26:03
Checks failed	2015-03-12 09:26:03
Recovery notification sent	2015-03-09 15:40:19

Physical Storage

/Volumes/Backup	99% Used
/	36% Used

Sensors

Remove Endpoint: Observium RAM Graph

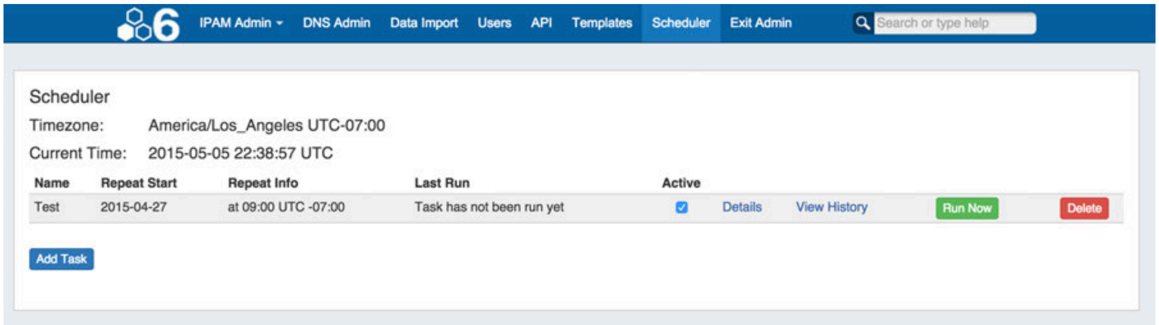
Add Endpoint: Observium Storage Graph

Task Scheduler

The Task Scheduler allows you to manage and schedule repeating tasks in ProVision. Three predefined tasks are available to schedule - Process Holding Tank, DNS Zone Transfer, and Backup. Note: This provided Backup task is intended to be the primary reoccurring method of backup.

Included in this feature:

- Scheduler ProVision page: This page allows for tasks to be added to the scheduler and managed. It is accessed from the Admin section of ProVision, under the **Scheduler** Tab. An overview of the **Scheduler** Tab is available on the Scheduler page.
- Scheduler API calls, available at Scheduler API. Please note that the Scheduler API is in beta, and is subject to change.



Scheduler

Timezone: America/Los_Angeles UTC-07:00

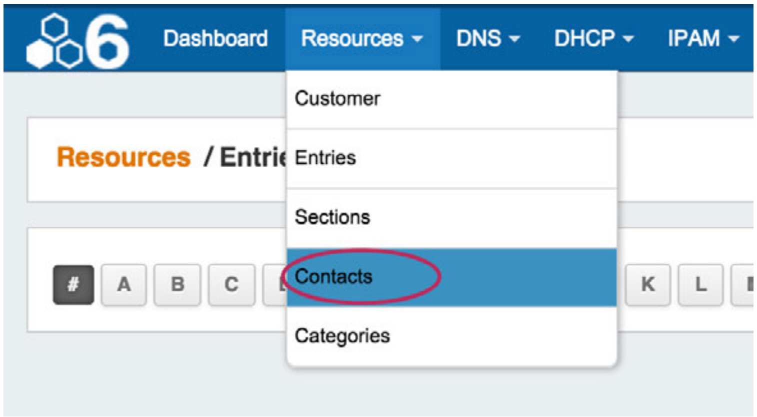
Current Time: 2015-05-05 22:38:57 UTC

Name	Repeat Start	Repeat Info	Last Run	Active				
Test	2015-04-27	at 09:00 UTC -07:00	Task has not been run yet	☑	Details	View History	Run Now	Delete

Contact Manager

The new Contacts page under Resources allows you to manually create contacts, import contacts from ARIN/RIPE, and manage them in one place. See the Contact Manager documentation for additional details.

Access the Contact Manager from the **Resources** tab, under Contacts.

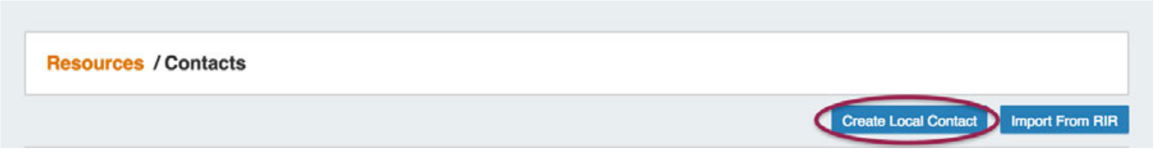


Included in this feature:

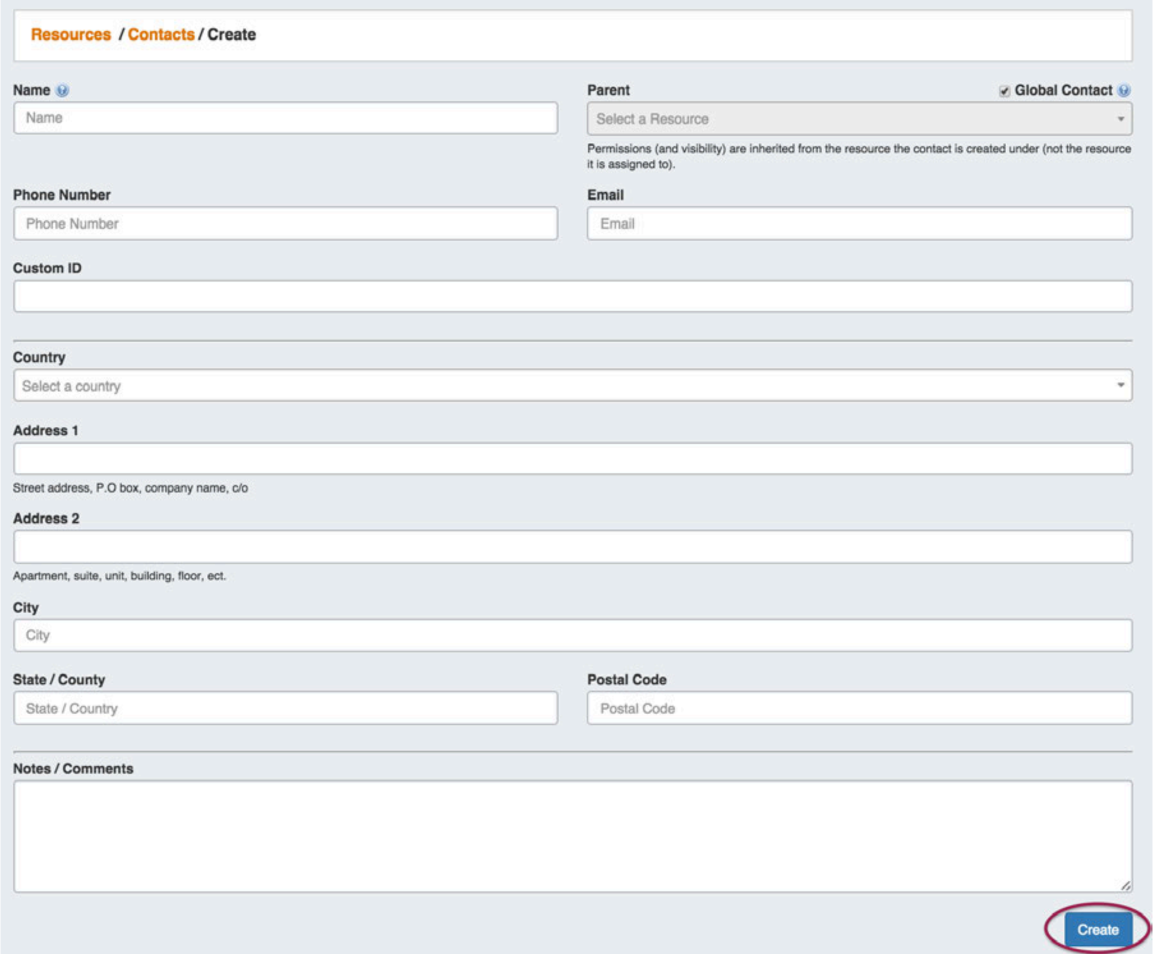
- Create Contacts manually and assign under a parent resource's permissions structure

  Click here to expand...

  Add new contacts manually by hitting the "Create Local Contact" button.



Fill out desired information and click "Create"



Permissions (and visibility) are inherited from the resource the contact is created under (not the resource it is assigned to).

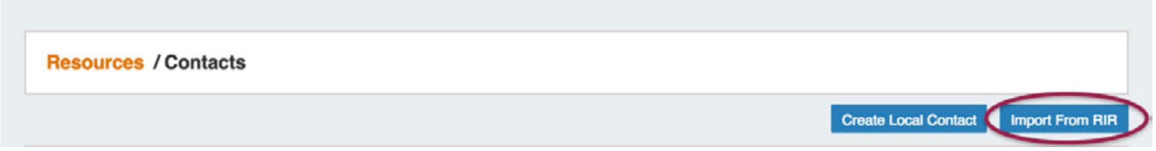
Street address, P.O box, company name, c/o

Apartment, suite, unit, building, floor, ect.

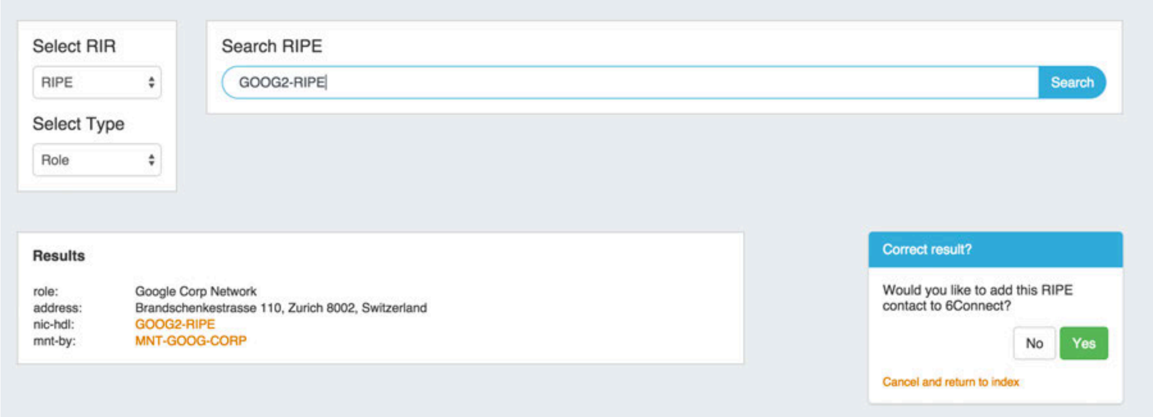
- *Import Contacts from ARIN / RIPE through a handle search*

Click here to expand...

Import contacts by ARIN / RIPE Handle by clicking on the "Import from RIR" button.



Then enter the RIPE/ ARIN handle and press "Search".



Select RIR: RIPE

Select Type: Role

Search RIPE: GOOG2-RIPE

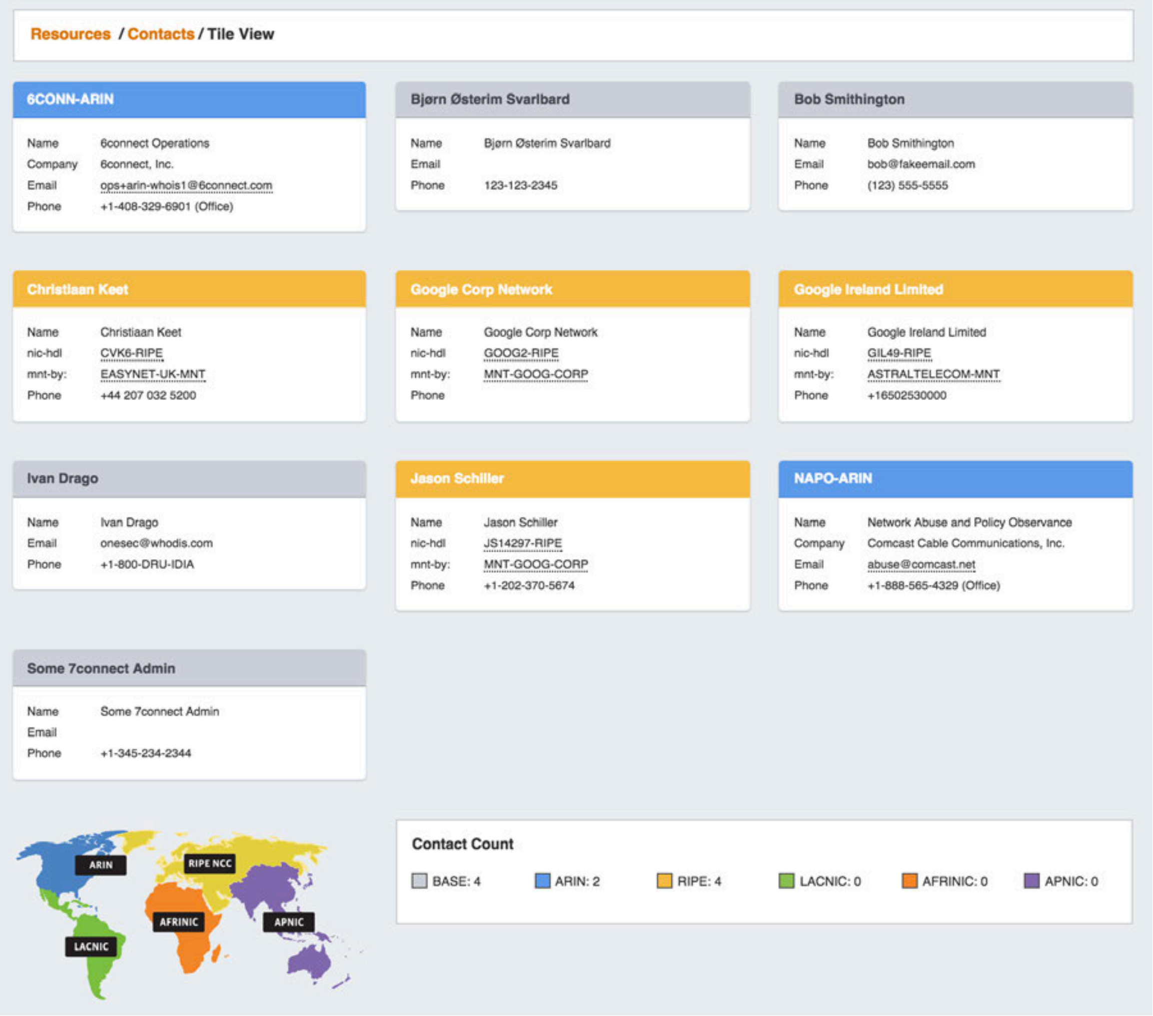
Results

role:	Google Corp Network
address:	Brandschenkestrasse 110, Zurich 8002, Switzerland
nic-hdl:	GOOG2-RIPE
mnt-by:	MNT-GOOG-CORP

Correct result?

Would you like to add this RIPE contact to 6Connect?

- View Contacts as a list or tiles



6CONN-ARIN

Name: 6connect Operations
Company: 6connect, Inc.
Email: ops+arin-whois1@6connect.com
Phone: +1-408-329-6901 (Office)

Bjørn Østerim Svarlbard

Name: Bjørn Østerim Svarlbard
Email:
Phone: 123-123-2345

Bob Smithington

Name: Bob Smithington
Email: bob@fakeemail.com
Phone: (123) 555-5555

Christiaan Keet

Name: Christiaan Keet
nic-hdl: CVK6-RIPE
mnt-by: EASYNET-UK-MNT
Phone: +44 207 032 5200

Google Corp Network

Name: Google Corp Network
nic-hdl: GOOG2-RIPE
mnt-by: MNT-GOOG-CORP
Phone:

Google Ireland Limited

Name: Google Ireland Limited
nic-hdl: GIL49-RIPE
mnt-by: ASTRALTELECOM-MNT
Phone: +16502530000

Ivan Drago

Name: Ivan Drago
Email: onesec@whodis.com
Phone: +1-800-DRU-IDIA

Jason Schiller

Name: Jason Schiller
nic-hdl: JS14297-RIPE
mnt-by: MNT-GOOG-CORP
Phone: +1-202-370-5674

NAPO-ARIN

Name: Network Abuse and Policy Observance
Company: Comcast Cable Communications, Inc.
Email: abuse@comcast.net
Phone: +1-888-565-4329 (Office)

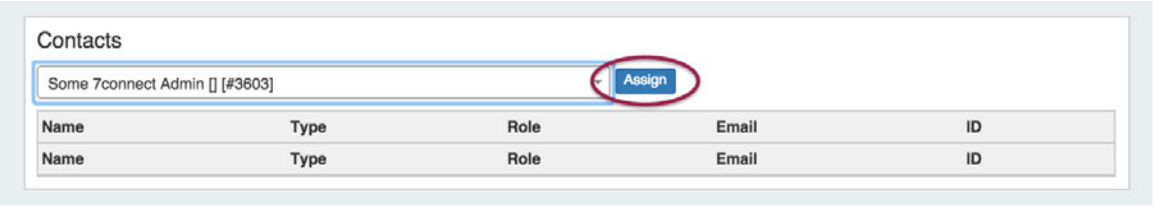
Some 7connect Admin

Name: Some 7connect Admin
Email:
Phone: +1-345-234-2344

Contact Count

☐ BASE: 4 ☐ ARIN: 2 ☐ RIPE: 4 ☐ LACNIC: 0 ☐ AFRINIC: 0 ☐ APNIC: 0

- Assign contacts to a resource through the Contacts Gadget



Some 7connect Admin [] [#3603]

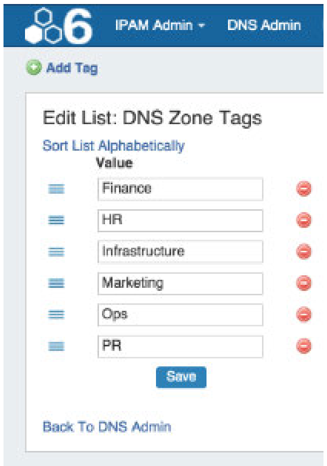
Name	Type	Role	Email	ID
Name	Type	Role	Email	ID

Note: Contacts currently existing in ProVision will be moved to the new contacts area at upgrade, however, new contacts must be added through the new page to be under the Contact Manager. Any contacts added through previous methods (as a section, or through a resource import function) will not appear under the contact manager.

Improved Tagging

IM-1734: Improved DNS Tag functionality

- Added a "DNS Tag" management link to DNS Admin.
  Add and edit DNS Zone Tags similar to how IPAM Tags are added - Click "Add Tag", type in the new tag name, and hit the "Add" button.

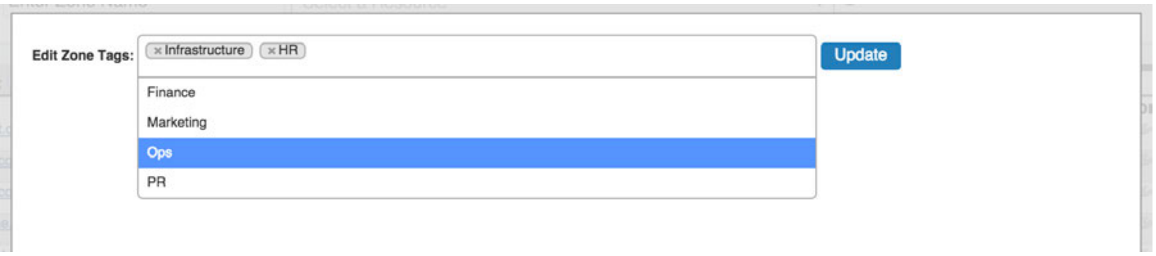


Edit List: DNS Zone Tags

Sort List Alphabetically

Value
Finance
HR
Infrastructure
Marketing
Ops
PR

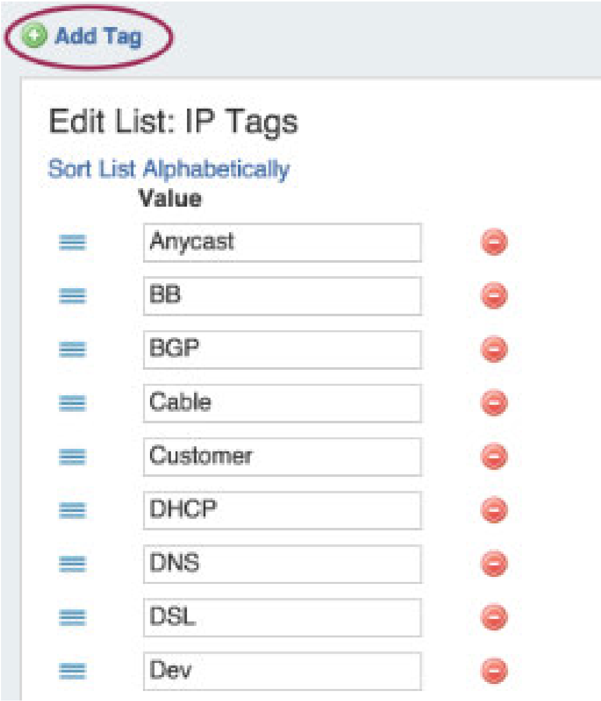
- Updated the "Edit Tags" interface on the DNS Zonelist page.
  The list of DNS tags available now show in a dropdown menu, and multiple tags may be added / removed in one session. Click inside the tag listing box, select the desired tag(s) from the dropdown list, then hit the "Update" button. To remove a tag from the zone, click on the "x" in front of the tag.



Edit Zone Tags: ×Infrastructure ×HR

IM- 1656 / 1697 The Tag / List system, including IPAM Tags, DNS Tags, and Subnets have been standardized to provide the same user experience when working with the lists.

- All lists now used the same Add Item interface, and have updated sorting and display.
  Click the green '+' / "Add Item" symbol to add new items to the list.



Edit List: IP Tags

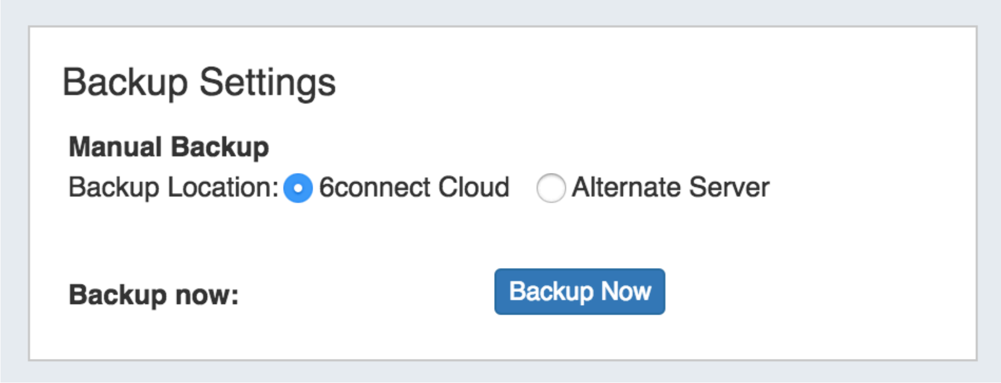
Value
Anycast
BB
BGP
Cable
Customer
DHCP
DNS
DSL
Dev

Additional Features

Backup Manager Updates

IM-123: The Backup Manager has been updated to allow for manual backups to be sent to a selected server Resource in ProVision. See Admin Preferences for additional information.

Select the backup location - either to the 6connect cloud, or an alternate server resource that exists in ProVision. Then hit "Backup Now" . It is recommended to perform a manual backup prior to imports or other major changes.



Backup Settings

Manual Backup

Backup Location: ● 6connect Cloud ○ Alternate Server

Backup now:

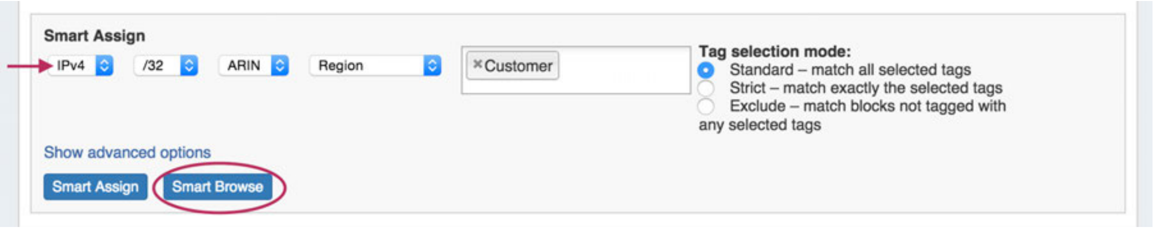
Smart Browse

IM- 1800: Browse Assign / List Available Blocks has been replaced with Smart Browse.

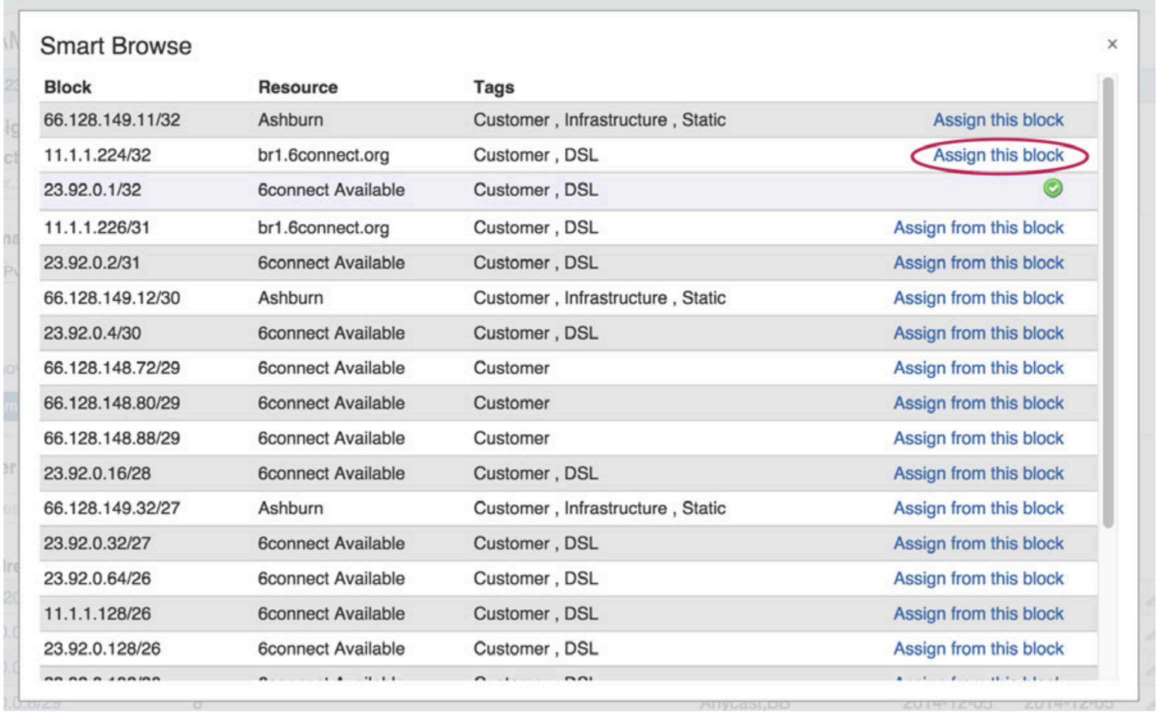
Smart Browse utilizes the smart assign parameters as search filter criteria, then allows you to manually select blocks to assign under that criteria.

Click here to expand...

Under the "Smart Assign" area, select the IPv4/IPv6, Size, RIR, Region, and/or Tags that you wish to filter to in the available blocks list.


Smart Assign
IPv4
/32
ARIN
Region
×Customer
Tag selection mode:
● Standard – match all selected tags
○ Strict – match exactly the selected tags
○ Exclude – match blocks not tagged with any selected tags
Show advanced options
Smart Assign
Smart Browse

Click on "Smart Browse" to bring up a list of IP aggregates meeting that criteria, which you can then select the block(s) to assign. A green check will show next to the block once assigned. You may assign multiple blocks per browse session.

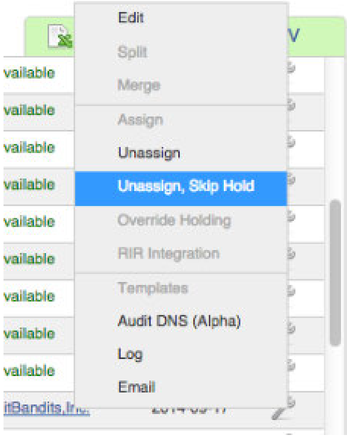


Block	Resource	Tags	
66.128.149.11/32	Ashburn	Customer , Infrastructure , Static	Assign this block
11.1.1.224/32	br1.6connect.org	Customer , DSL	Assign this block
23.92.0.1/32	6connect Available	Customer , DSL	✓
11.1.1.226/31	br1.6connect.org	Customer , DSL	Assign from this block
23.92.0.2/31	6connect Available	Customer , DSL	Assign from this block
66.128.149.12/30	Ashburn	Customer , Infrastructure , Static	Assign from this block
23.92.0.4/30	6connect Available	Customer , DSL	Assign from this block
66.128.148.72/29	6connect Available	Customer	Assign from this block
66.128.148.80/29	6connect Available	Customer	Assign from this block
66.128.148.88/29	6connect Available	Customer	Assign from this block
23.92.0.16/28	6connect Available	Customer , DSL	Assign from this block
66.128.149.32/27	Ashburn	Customer , Infrastructure , Static	Assign from this block
23.92.0.32/27	6connect Available	Customer , DSL	Assign from this block
23.92.0.64/26	6connect Available	Customer , DSL	Assign from this block
11.1.1.128/26	6connect Available	Customer , DSL	Assign from this block
23.92.0.128/26	6connect Available	Customer , DSL	Assign from this block

API and GUI Skip Holding

IM- 1587: IPAM "Unassign" API call now has a parameter to skip the holding tank. *See: API Module - IPAM - Unassign, optional parameter "skipHolding" for more detail.*

IM- 1587b: The option to "Unassign and Skip Holding" has been added to the IPAM Manage Action Menu (wrench icon).



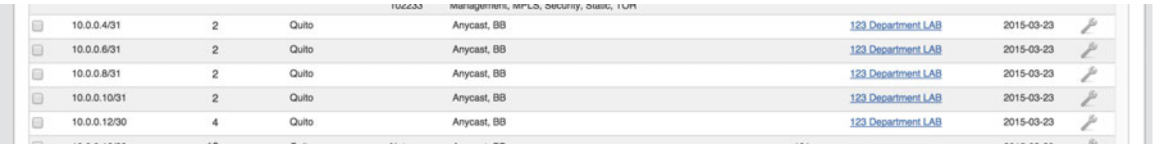
Automatic Re-aggregating of Reclaimed Blocks

CFR- 6: IP blocks are re-aggregated as they are reclaimed.

After unassigning blocks / overriding holding, newly available blocks will be merged upon next page refresh.

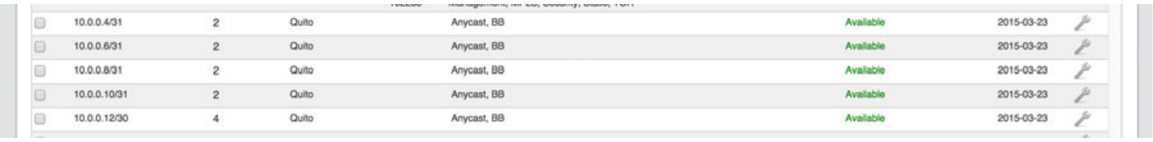
Click here to see an example...

Initial State:



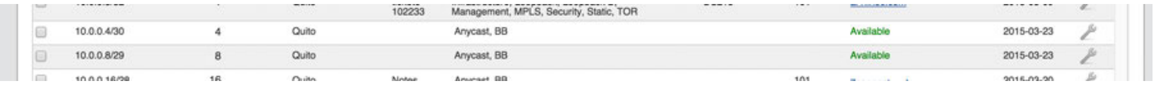
☐	10.0.0.4/31	2	Quito	Anycast, BB	123 Department LAB	2015-03-23
☐	10.0.0.6/31	2	Quito	Anycast, BB	123 Department LAB	2015-03-23
☐	10.0.0.8/31	2	Quito	Anycast, BB	123 Department LAB	2015-03-23
☐	10.0.0.10/31	2	Quito	Anycast, BB	123 Department LAB	2015-03-23
☐	10.0.0.12/30	4	Quito	Anycast, BB	123 Department LAB	2015-03-23

Unassigned / Override Holding:



☐	10.0.0.4/31	2	Quito	Anycast, BB	Available	2015-03-23
☐	10.0.0.6/31	2	Quito	Anycast, BB	Available	2015-03-23
☐	10.0.0.8/31	2	Quito	Anycast, BB	Available	2015-03-23
☐	10.0.0.10/31	2	Quito	Anycast, BB	Available	2015-03-23
☐	10.0.0.12/30	4	Quito	Anycast, BB	Available	2015-03-23

Automatic merging after page refresh:

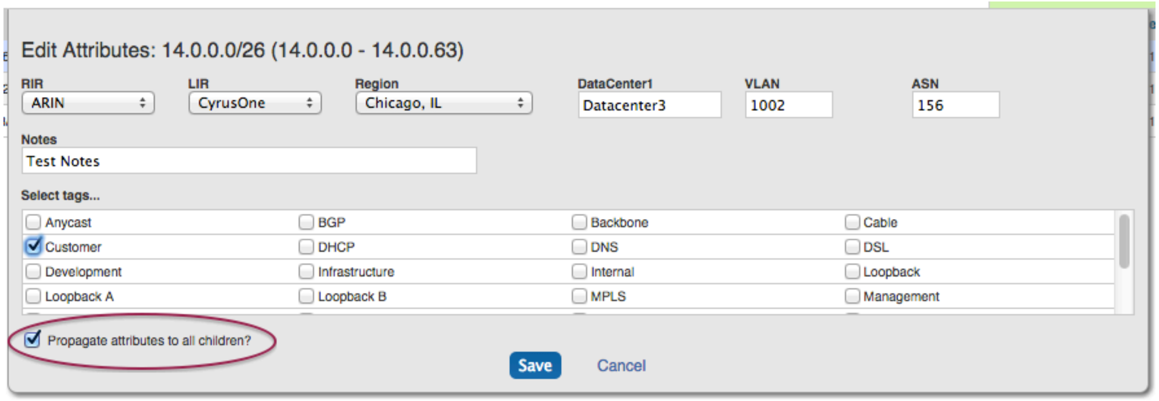


				102233	Management, MPLS, Security, Static, TOR		
☐	10.0.0.4/30	4	Quito		Anycast, BB	Available	2015-03-23
☐	10.0.0.8/29	8	Quito		Anycast, BB	Available	2015-03-23

Propagate to Children

IM- 1725: Added "Propagate to children" option for single-block updates for IPAM.

When editing attributes for *<u>parent</u>* *blocks in the IPAM Manager (Action Menu -> Edit), select "Propagate attributes to all children" to carry through changes to child blocks.*



Edit Attributes: 14.0.0.0/26 (14.0.0.0 - 14.0.0.63)

RIR: ARIN

LIR: CyrusOne

Region: Chicago, IL

DataCenter1: Datacenter3

VLAN: 1002

ASN: 156

Notes: Test Notes

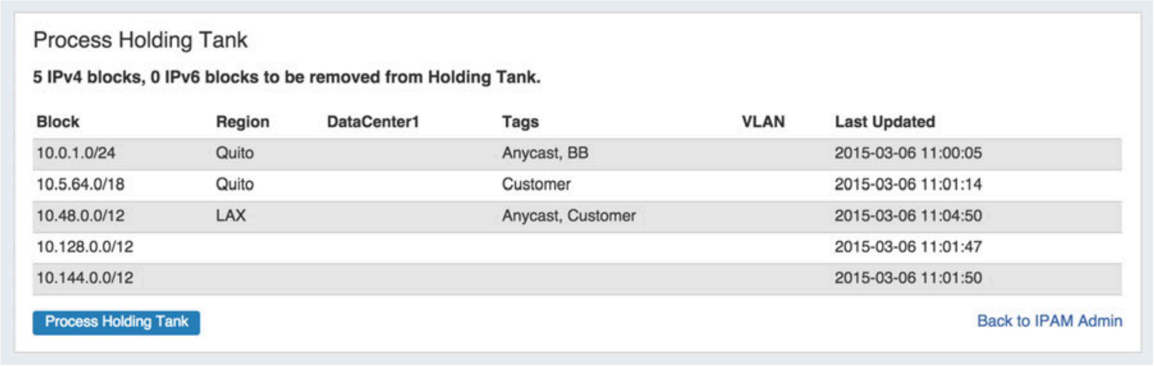
Select tags...

☐ Anycast	☐ BGP	☐ Backbone	☐ Cable
☑ Customer	☐ DHCP	☐ DNS	☐ DSL
☐ Development	☐ Infrastructure	☐ Internal	☐ Loopback
☐ Loopback A	☐ Loopback B	☐ MPLS	☐ Management

☑ Propagate attributes to all children?

Holding Tank Improvements

IM- 1098: Holding Tank displays detailed block information



Process Holding Tank

5 IPv4 blocks, 0 IPv6 blocks to be removed from Holding Tank.

Block	Region	DataCenter1	Tags	VLAN	Last Updated
10.0.1.0/24	Quito		Anycast, BB		2015-03-06 11:00:05
10.5.64.0/18	Quito		Customer		2015-03-06 11:01:14
10.48.0.0/12	LAX		Anycast, Customer		2015-03-06 11:04:50
10.128.0.0/12					2015-03-06 11:01:47
10.144.0.0/12					2015-03-06 11:01:50

IM- 1777: Can now set permissions on the holding tank for subassigned blocks via the 6connect holding resource. See Holding Tank Management for details.

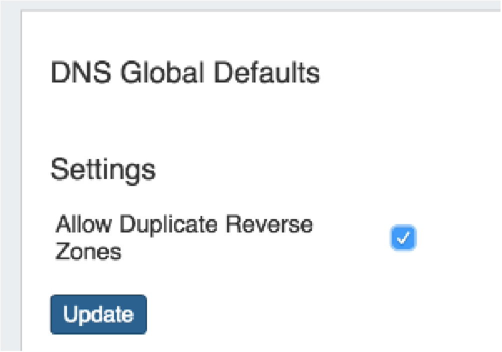
IPPlan Importer (Toolkit Item)

Now included in the Toolkit (collection of command-line tools available at /tools) is the IPPlan Importer. The IPPlan Importer is a command-line tool to facilitate importing IPs from an IPPlan database into ProVision. This tool can be used via two approaches: generating .csv files via the tool only, then using the ProVision IP Import UI to import the csv files (Connector), or as a full command-line import solution, bypassing the ProVision UI entirely (Importer). Detailed instructions are available at IPPlan Importer.

Duplicate Reverse Zones

IM- 1853: Allow user control over duplicate reverse zones

In DNS Admin, under the Global DNS Zone Defaults link is the option to allow duplicate reverse zones. Check to enable / disable allowing duplicate reverse DNS zones. If duplicate reverse zones already exist, those zones must be removed before disabling duplicates. If a zone has duplicates, a link appears in the top right corner of that zone's ViewZone page.



DNS Global Defaults

Settings

Allow Duplicate Reverse Zones ☑

Bug Fixes/Improvements

CFR- 66: Searching for IPs brings up related search results

IM- 1227: Included reset tool in /tools for factory reset

IM- 1432: Updated warning message upon deleting a permissions group

IM- 1578: Updated license expiry check

IM- 1599: Configtest updated for Peering

IM- 1657: Updated UI alignment on DNS zone import page

IM- 1667: Duplicate DNS zone names are supported

IM- 1670: Improved Setup Wizard

IM- 1690: DHCP gadget UI updated to no longer allow an item in the existing pool to be added multiple times

IM- 1720: Updated user permissions to prevent a read only user from accessing DNS Edit Tag

IM- 1724: Updated Smart Assign to allow assigning blocks that have been multi-edited to allow subassignments

IM- 1726: Added example format to DNS SOA formatting error message

IM- 1730: 6connect logo now directs the user to the dashboard page

IM- 1733: Improved Peering "Add Session" error message

IM- 1736: Resolved an issue in IPAM RIR Integration where the Net name was not cleared from previous SWIP action

IM- 1737: Auth - testLDAP no longer returns error if ldapMode=SSL

IM- 1746: Resolved an issue in DNS zonelist where the Action Menu (wrench) was not functional after using header sorting

IM- 1748: Updated zone list sorting ability for Tags, DNSSEC, and Records.

IM- 1755: Fixed an issue where adding a slave under DNS gadget zone delegation would fail

IM- 1759: Nomenclature updates made to IPAM Manage Templates and Action Menu (wrench icon). "Auto Aggregate" is now "Clean Up", "Aggregate" has been renamed "Merge"

IM- 1760: Fixed the graphical display of the IPAM Manage email form

IM- 1769: Resolved an error where users with limited permissions were unable to edit IP blocks

IM- 1780: The IPAM "Advanced" button is now clickable for limited-permissions users

IM- 1783: Removed VLAN field for IPAM manage when editing multiple blocks

IM- 1789: Adjusted DNS Templates zone reordering arrows to have bounds checking

IM- 1790: Resolved an issue where API zoneTemplate update incorrectly reports success in some cases

IM- 1794: Dyn Server update no longer displays an SOA error

IM- 1796: Improved error messages in DNS Audit tool

IM- 1798: Section pages that have child entries now have an informational message of "This resource cannot be deleted because it has entries created from it."

IM- 1808: IPV6 Alphanumeric sort has been updated to be more alphanumeric

IM- 1850: Cleaned up foreign key restraints

IM- 1841: Removed unused columns from auth

IM- 1843: Resolved an issue where Peering Communications did not separate peer with 2 ASNs in an exchange

IM- 1844: Peering sorting for import and communications improved

IM- 1848: Peering import router list now shows routers with no peer groups

IM- 1849: Removed all old/unused columns from config table and admin page

IM- 1851: Removed unused columns from Auth

IM- 1852: Cleaned up unused tables

IM- 1881: Reallocate and Detail Reassign buttons have been removed from RIR Integration in preparation for a future SWIP update

IM- 1883: The default number of rows returned in reporting for either html or .csv is now 5000

IM- 1897: A newly added peer should now show as current peer in Communications list for that exchange

SEC- 4: Various security improvements implemented