

# DNS Administration

## DNS Administration

Server Name	Server Backend	Server Type	Server Status	Actions
ANewServer	ISCBIND	master		Delete Push Perms
ATestServer2	ISCBIND	master		Delete Push Perms

DNS Administration in DNSv3 is primarily handled under the **DNS** tab **DNS Servers** sub-tab, with DNS Administrative settings available under the **Admin Preferences** page.

The **DNS Servers** tab is only accessible to Admin users, and contains functions for adding, updating, and managing DNS servers as well as scheduling server tasks.

Additional DNS Admin tasks occur in other ProVision areas, and not all management tasks require Admin-level permissions - some only require appropriate resource permissions on the DNS Groups, Zones, and servers involved. See additional sections on this page for more detailed information:

- DNS Administration
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    - DNS Approvals
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  - Manage DNS Servers
  - ACLs / Views
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## DNSv3 Overview

DNSv3 reorganizes ProVision's DNS system into a more unified and accessible interface, combining both admin and non-admin DNS tasks together under the **DNS** tab.

In DNSv3, zones are gathered under DNS Groups, servers are attached to those Groups, and Nameservers, Default SOA values, and ACLs are managed at a per-Group level.

Users can then view and manage Groups, individual zones, default SOA values, ACLs, attach servers, and perform pushes all on the same page.

### DNSv3 Zone Name Response Change

Note: In DNSv3, zone name responses will enforce and return a trailing period (i.e., "example.com" will be converted and returned as "example.com.").

DNSv3 is designed to reflect [RFC 1035 standards](#) for valid data formats and will return error messaging for data not meeting those formats.

## DNSv3 Permissions

DNSv3 incorporates DNS zones and Groups into ProVision's Resource System. Zones and Groups are Resources just like Customers, Servers, Routers, or Contacts (See [The Resource System](#) for a more detailed explanation of Resources in ProVision).

This allows for DNS zones and Group permissions to be managed similarly to other ProVision resources, where users with Resource permissions (Create / Read / Update / Delete) on the parent resource of the DNS Group can create groups and zones, manage those groups and zones, push (if a server is attached), and delete.

A user with full Resource permissions on a DNS Server, as well as the parent resource of a Group, may view and attach that server to a Group.

Users with Admin permissions can access the **DNS Servers** area under the **DNS** tab manage DNS server creation, edits, and deletion.

For more information on setting up permissions groups in ProVision, see [Users & Permissions](#).

## Permission Shortcut Button ("Perms")

Throughout DNS, a shortcut permissions button ("Perms") is available on a per-item level, accessible only to Admin users.

This permissions button allows for direct, point-of-use permissions adjustments to DNS Groups, Servers, Zones, and Records. It uses the same CRUD permissions and groups available in the Admin Users tab, but removes the need to remember and search for the DNS item name.

To open the Change Resource Permissions module, click on the "Perms" Button for any DNS item.

Zone Name	Last Pushed	Last Modified	Records	Zone Status	Actions
123zone.com.		02/13/2019 11:59:32	1		<a href="#">Delete</a> <a href="#">Push</a> <a href="#">Move</a> <a href="#">Check</a> <a href="#">Perms</a>

Edit the CRUD permissions for any ProVision user group by clicking the checkbox for the desired group and permission type. When done, click "Save Changes". The permission changes will be also be reflected in the Admin [User](#) tab Group settings.

### Change Resource Permissions

Resource Permissions

UserGroup Name	Read	Create	Update	Delete
Global Admins	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Global Read-Only	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Group A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Global Group 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Test Group B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You can also restrict certain actions for the User Group in [Approvals - Actions & Permissions](#).

## DNS Approvals

The Approvals module stores and queues DNS actions made by selected User Groups, and sends those actions to a Pending Changes list for administrative review. Later, an administrator (or combination of administrators) can approve or reject these stored actions.

Approvals is primarily set up and managed via the Admin [Approvals](#) Tab. See the [ProVision Admin Guide - Approvals Tab](#) for details on setting up and using Approvals from the Administrative viewpoint.

In the [DNS](#) Tab, a "Resources Awaiting Approval" module will display near the top of DNS Groups, DNS Zone Lists, and DNS Servers pages, if a change has been submitted on that page that is pending approval.

DNSv3 DNS Groups DNS Servers DNS Zones DNS Records

### DNS Groups List Add Group

DNS Groups help you to organize all of your Zones and Servers together into a single place. With Groups, you are able to push whole group configurations.

**Resources Awaiting Approval**

Approval Action	Name	Resource Data	Approval Info	Actions
Update	Default Group	<a href="#">Details</a> Resource of type dnsview )	Submitter : limited@6connect.com	<input type="button" value="Approve"/> <input type="button" value="Reject"/>

**Default Group**

#### DNS Zones Add Zone Push Group Schedule Push Export Zones Perms

Forward Zones Reverse Zones Catalog Zones

Zone Name	Last Pushed	Last Modified	Records	Zone Status	Actions
123zone.com.		02/13/2019 11:59:32	1		<input type="button" value="Delete"/> <input type="button" value="Push"/> <input type="button" value="Move"/> <input type="button" value="Check"/> <input type="button" value="Perms"/>

Users who submitted a change for approval will see the details of their change request in this module.

Admin users with permissions to approve or reject the request will have the option to Approve or Deny the change.

## DNSv3 Administrative Tasks

Admin-only tasks in DNSv3 include setting DNS Globals, importing zones, scheduling pushes, managing DNS Servers, and managing DNS Approvals.

These tasks may be accessed in the following areas:

- DNS Global Settings: [Admin Preferences](#) page.
- Importing DNS Zones: the [Data Import](#) tab, see [Import DNS Zones](#).
- Scheduling DNS Pushes:
  - May be set up from the [Scheduler Tab](#) or,
  - Set by server from the [DNS Servers](#) page, or
  - Set by DNS Group from the [DNS Groups](#) page, or
  - Set by individual zone from the [View Zone](#) page
- Managing DNS Servers: The [DNS Servers](#) page
- Approvals: The [Approvals Tab](#).

Tasks such as working with zones, DNS Groups, adding ACLs, attaching servers to Groups, and manually pushing zones do not require ProVision Admin permissions.

Instead, these tasks simply require that the user be included in a [User Group](#) that has appropriate permissions (either direct, or inherited) on the DNS zones, Groups, and servers involved.

## Manage DNS Servers

Adding, configuring, and managing DNS Servers occurs in the Admin-only [DNS Servers](#) page under the [DNS](#) Tab.

Supported DNSv3 server types include:

- ISC BIND
- Secure 64 (Authority, x86 Authority, KNOT Authority, Cache, Signer)
- PowerDNS (BIND and MySQL)
- InfoBlox
- Knot DNS
- NS ONE
- DynDNS (Beta)
- DNSMadeEasy
- AWS Route53 (Beta)
- Dummy (a fake server entry used for servers outside of ProVision access, in order to manage master / slave configurations)

Some server types may require outside subscriptions or accounts.

For detailed information on adding, editing, and deleting DNS Servers, see [Working with DNS Servers](#).

## ACLs / Views

In DNSv3, Views may be created by selecting the "Export Groups as Views" toggle and selecting a DNS Group under the server details sections "DNS Group Settings".

**DNS Group Settings**

**Export Groups as Views:**  ON

Check this option if you want to enable the support of different DNS Groups to be exported as Views.

**Default Group for Direct Zones:**

Default Group

The zones that are directly connected to the server are going to be added to this group.

**Attach to Groups:**

- × Default Group
- × Chrome Group
- × FirefoxGroup
- × GoogleDNS

The server will be attached to the list of the groups and the zones from the groups are going to be exported automatically.

ACLs are managed on a per-DNS Group level, and may be added, edited, or removed by any user with appropriate resource permissions on the DNS Group.

**Applied ACLs**

[Add or Edit ACL](#)

ACL Name	ACL Networks	Actions
Example List	10.10.3.0/24	<a href="#">Detach</a>
Example List234	10.10.3.0/24	<a href="#">Detach</a>

For details on working with ACLs, see [Configuring Split Horizon/Views](#).

## [DNS Zone Transfers \(Pushes\)](#)

In DNSv3, zones may be pushed manually or scheduled for a future time, and may be performed for a single zone, all zones in a DNS Group, or all zones on a server.

Scheduling DNS pushes requires administrative access, but manual pushes only require permissions on the DNS Group / DNS Zone, and the server(s) attached.

### Manual DNS Pushes:

Manual pushes may be performed from the following locations in ProVision:

- Single Zone: From the DNS Groups Zone list "Push" button. See [Working with DNS Zones - Pushing Zones](#)
- Single Zone: From the DNS View Zone page "Push Zone Now" button. See [Working with DNS Zones - Pushing Zones](#)
- Group: From the DNS Groups Zone list "Push Group" button. See [Working with DNS Groups - Pushing a Group](#)
- Server: From the DNS Servers list "Push" button. See [Working with DNS Servers - Pushing a server](#)
- Server: From the DNS Server Settings page "Push Zones" button. See [Working with DNS Servers - Pushing a server](#)

### Scheduled DNS Pushes:

Scheduled pushes may be performed from the following locations in ProVision:

- May be set up from the [Scheduler Tab](#) for single zones, all zones in a Group, or all zones on a server.
- Set by server from the [DNS Servers](#) page, or
- Set by DNS Group from the [DNS Groups](#) page, or
- Set by individual zone from the [View Zone](#) page

## [DNS Record Types](#)

DNSv3 Record Types are a static list comprised of:

- A, AAAA, CNAME, DNAME, DNSKEY, DS, MX, NAPTR, NS, PTR, SOA, SRV, SPF, HINFO, TXT.

Any user with appropriate resource permissions on the DNS Zone / DNS Group may add, edit, or delete DNS Records.

See [Working with DNS Zones](#) for detailed information on managing DNS Records.

## Global DNS Settings (Local Installation Only)

DNS Global Settings is accessible from the [Admin Preferences](#) page by users with Admin level permissions.

Admin Settings Application Authentication **DNS** Peering Templates

**DNS Global Settings**

**DNSSEC Settings**

Dynamic Updates

Backup Settings

Import Settings

**Enable DNSSEC local signing (Testing Purposes Only):**  ON

By enabling DNSSEC local signing, ProVision will sign the zones with DNSSEC support on push. The keys are generated and saved locally. This feature is intended for testing purposes only.

**Sign zones by dnssec-tools:**  ON

ProVision will use the zonesigner from dnssec-tools to sign the zones. Dnssec-tools can be found [here](#)

**Zonesigner Path:**

Path to the zonesigner tool.

**Sign zones by ISC Bind Utilities (Recommended):**  OFF

ProVision will use the ISC BIND Utilities to sign the zones.

**dnssec-dsfromkey Path:**

Path to the dnssec-dsfromkey tool used for generating DS records.

Save Changes

### DNSSEC Settings:

If using DNSSEC, select whether to enabled DNSSEC local signing, or sign zones by dnssec-tools, then enter the following information:

**zonesigner path** : Enter the zonesigner path that will be used for DNS. Zonesigner is required if dnssec-keygen and dnssec-signzone are not set.

**Sign zones by ISC BIND Utilities:** Select whether to use ISC BIND utilities to sign zones.

**dnssec-dsfromkey path** : Enter the dnssec-dsfromkey path that will be used for DNS. Required in all cases.

### DNS Dynamic Update Settings

**DNS Global Settings**

DNSSEC Settings

**Dynamic Updates**

Backup Settings

Import Settings

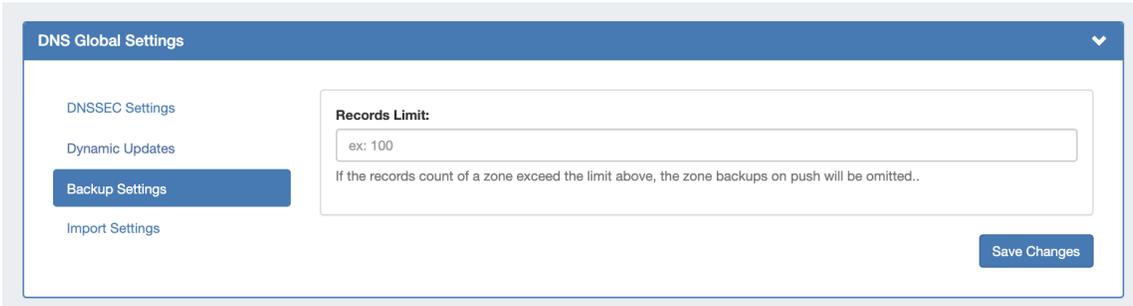
**Dynamic Update via nsupdate tool:**  OFF

By default ProVision is using internal implementation for DNS Dynamic Update. You can switch the dynamic updates to use the "nsupdate" tool.

Save Changes

**Dynamic Update via nsupdate:** Toggle to "On" if you wish to use Dynamic Updates via nsupdate, instead of ProVision's internal implementation.

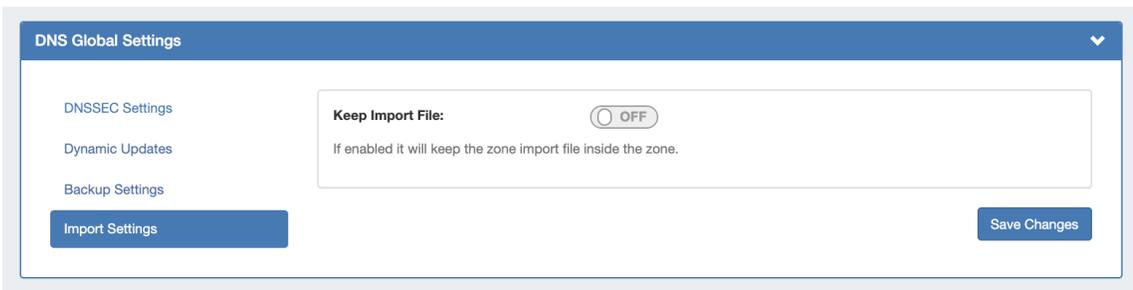
## DNS Backup Settings



The screenshot shows the 'DNS Global Settings' interface with the 'Backup Settings' tab selected. On the left, there is a sidebar with links for 'DNSSEC Settings', 'Dynamic Updates', 'Backup Settings' (highlighted), and 'Import Settings'. The main content area features a 'Records Limit' section with a text input field containing 'ex: 100'. Below the input field, a note states: 'If the records count of a zone exceed the limit above, the zone backups on push will be omitted..'. A 'Save Changes' button is located at the bottom right of the settings area.

**Records Limit :** The limit for the number of records a zone may have for a zone to process a backup. If the records count exceed this number, zone backups will be omitted at zone push.

## DNS Import Settings



The screenshot shows the 'DNS Global Settings' interface with the 'Import Settings' tab selected. The sidebar on the left includes 'DNSSEC Settings', 'Dynamic Updates', 'Backup Settings', and 'Import Settings' (highlighted). The main content area features a 'Keep Import File' section with a toggle switch currently set to 'OFF'. A note below the toggle reads: 'If enabled it will keep the zone import file inside the zone.'. A 'Save Changes' button is positioned at the bottom right.

**Keep Import File:** Saves DNS zone import files to the zone's "Zone Backups and Attached Files" area, for later download. Optional.

## DNS Export Functions

### Exporting Zones

#### Individual Zones:

DNS zones may be exported individually from the zone's View Zone page "Export Zone" button, by any user with appropriate zone permissions (see: [DNS Zones Overview](#)).

#### Zones in a DNS Group:

All zones under a DNS Group may be exported from the DNS Group "Export Zones" button, by any user with the appropriate group permissions (see: [Working with DNS Groups](#)).

#### Zones directly connected to a server:

Zones directly connected to a server may be exported by Admin users from the DNS Server Details page, under the section "Zones connected directly to the server".

Expand the module by clicking the (>) arrow, and then click the "Export Zones" button.

Zones directly connected to the server					
Export Zones					
Forward Zones		Reverse Zones			
Zone Name	Last Pushed	Last Modified	Records	Zone Status	Actions
ibmZoneUpdateTest2.com.	05/10/2017 12:53:39	06/05/2017 14:42:32	0	Contains Errors	Check

## Importing DNS Zones:

ProVision offers six 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 Upload / Import:** Imports DNS zones 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. This is the simplest and most commonly used import method. Refer to [Import DNS Zones](#) for more information.

**PowerDNS Zone Import:** This tool is available after [configuring a PowerDNS server](#) with a MySQL backend. The PowerDNS Import connects to the selected server and imports all zones.

**InfoBlox Zone Import:** Imports DNS zones using a provided Host, Username, and Password. The InfoBlox import pulls all zones on the InfoBlox LOCAL grid and adds them to a designated Group. It is advised to [create a DNS Group](#) prior to the import with default parameters and NS records to be inherited by the imported records.

**NS ONE Zone Import:** Imports DNS zones using a NS One API Key. It is advised to [create a DNS Group](#) prior to the import with default parameters and NS records to be inherited by the imported records.

**Dyn DNS Zone Import:** Imports DNS zones using a Dyn DNS Customer Name, Username, and Password. It is advised to [create a DNS Group](#) prior to the import with default parameters and NS records to be inherited by the imported records.

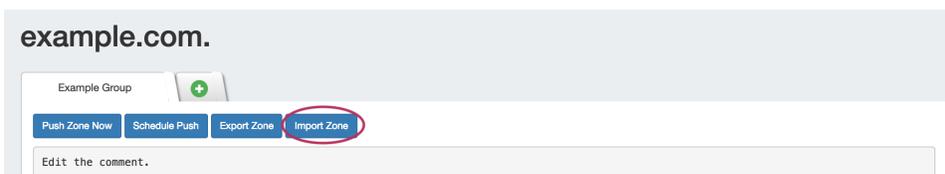
**DNSMadeEasy Zone Import:** Imports DNS zones using a DNSMadeEasy API Key and API Secret. It is advised to [create a DNS Group](#) prior to the import with default parameters and NS records to be inherited by the imported records.

**IPPlan Zone Import:** Imports DNS zones using IPPlan MySQL database options. It is advised to [create a DNS Group](#) prior to the import with default parameters and NS records to be inherited by the imported records.

Additional DNS import options may be available on a per-zone or per-server level, accessed from the [DNS](#) Tab:

**DNS Zone Import:** This tool is available on a zone's "View Zone" page, and allows the user to import additional zone/record information into an existing ProVision zone by uploading a zone file (.zone).

- From the View Zone page, a zone file (.zone) may be imported into a ProVision zone to populate record data. Click "Import Zone".



A Zone Import dialog box will open. Next to **Zone File:**, click "Choose File" and select your .zone file to import. Then, select an import policy to follow.

**Zone Import**

**Zone Name:** example.com.

**Zone File:** Choose File | No file chosen

**Import Policy**

- Default Records Add**  
The records with the same hosts but with different values will be added ( useful for Load Balancing ).
- Skip records with the same host**  
The import will skip adding records with hosts that already exists.
- Remove the existing hosts from the zone. WARNING!**  
If the import contains a host that already exists in the zone, the existing records will be removed from the zone and the imported record will be added.

**Import Zone** **Close**

When done, Click "Import Zone".

## Additional Information:

### 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.

Global DNS Settings may be set from the [Admin Preferences](#) page.

## Additional Sections:

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

- [Working with DNS Servers](#)
- [Configuring ISC BIND Support](#)
- [Configuring PowerDNS Support](#)
- [Configuring Secure64 Support](#)
- [Configuring Route53 Support](#)
- [Configuring Split Horizon/Views](#)
- [Configuring DNSSEC](#)