DNS Administration

DNS Administration

Dashboard Resources - DNS -	DHCP - IPAM - Peering - Reporting		٩	Search or type help
DNSv3 DNS Groups DNS Se	vers DNS Zones DNS Records			
DNS Server List	erver			
Server Name	Server Backend	Server Type Ser	ver Status Actions	
ANewServer	ISCBIND	master	Delete	Perms
ATestServer2	ISCBIND	master	Delete	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
 - DNSv3 Overview
 - DNSv3 Permissions
 - Permission Shortcut Button ("Perms")
 - DNS Approvals
 - DNSv3 Administrative Tasks
 - Manage DNS Servers
 - ACLs / Views
 - DNS Zone Transfers (Pushes)
 - Manual DNS Pushes:
 - Scheduled DNS Pushes:
 - DNS Record Types
 - Global DNS Settings (Local Installation Only)
 - DNSSEC Settings:
 - DNS Dynamic Update Settings
 - DNS Backup Settings
 - DNS Import Settings
 - DNS Export Functions
 - Exporting Zones
 - Importing DNS Zones:
 - Additional Information:
 - System Information for Local Installations
 - Additional Sections:

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.

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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

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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.

↓ ^a _z Zone Name	Last Pushed	$\downarrow \uparrow$ Last Modified	Records	Zone Status	Actions T
123zone.com.		02/13/2019 11:59:32	1		Delete Push Move Check Perms

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.

Resource Permissions				
UserGroup Name	Read	Create	Update	Delete
Global Admins				
Global Read-Only				
Test Group A				
Global Group 2				
Test Group B				
You can also restrict certain actions for th Approvals - Actions & Permissions.	ne User Gr	oup in		

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 Gr	oups DNS Servers	DNS Zones DNS Records		
DNS Group	s List Add Group			
DNS Groups help you t	o organize all of your Zon	es and Servers together into a single p	place. With Groups, you are able to push whole group c	onfigurations.
Resources Awaiting	Approval			>
Approval Action	Name	Resource Data	Approval Info	Actions
Update	Default Group	Details Resource of type dnsview)	Submitter : limited@6connect.com	Approve Reject
× Default Group				♥
× Default Group	Add Zone Push Group	Schedule Push Export Zones	Perms	~
Contemporary	Add Zone Push Group	Schedule Push Export Zones	Perms	~
× Default Group DNS Zones Forward Zones F ; Zone Name	Add Zone Push Group Reverse Zones Catalo Last Push	Schedule Push Export Zones	Perms Records Zone Status Actions T	~

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	3	
Export Groups as \	Jiews: ON O	
Check this option if	you want to enable the support of different DNS Groups to be exported as Views.	
Default Group for I	Direct Zones:	
Default Group		\$
The zones that are o	directly connected to the server are going to added to this group.	
ĺ	× Default Grou	
	× Chrome Gro	
Attach to Groups:	× FirefoxGrou	
	× GoogleDNS	
The server will be at	tached 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	Detach
Example List234	10.10.3.0/24	Detach

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.

DNSSEC Settings	Enable DNSSEC local signing ON
Dynamic Updates	(resume runposes only).
Backup Settings	and saved locally. This feature is intended for testing purposes only.
	Sign zones by dnssec-tools:
mport Settings	ProVision will use the zonesigner from dnssec-tools to sign the zones. Dnssec-tools can be found here
	Zonesigner Path:
	/usr/local/bin/zonesigner
	Path to the zonesigner tool.
	Sign zones by ISC Bind Utilities (O OFF) (Recommended):
	ProVision will use the ISC BIND Utilities to sign the zones.
	dnssec-dsfromkey Path:
	/usr/sbin/dnssec-dsfromkey
	Path to the dnssec-dsfromkey tool used for generating DS records.

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

S Global Settings	
DNSSEC Settings Dynamic Updates	Dynamic Update via nsupdate tool: OFF By default ProVision is using internal implementation for DNS Dynamic Update. You can switch the dynamic updates to
Backup Settings	use the "nsupdate" tool.
Import Settings	Saus 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

DNSSEC Settings	Records Limit:
Dynamic Updates	ex: 100
Backup Settings	If the records count of a zone exceed the limit above, the zone backups on push will be omitted
Import Settings	

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

IS Global Settings		~
DNSSEC Settings		
Dynamic Updates	Keep Import File: OFF	
Backup Settings		
Import Settings		Save Changes

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 Beverse	Zones				
1 ² Zone Name	Last Pushed	↓† Last Modified	Records	Zone Status	Actions T
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.

IPPIan Zone Import: Imports DNS zones using IPPIan 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".

e	example.com.						
	Example Group						
	Push Zone Now Schedule Push Export Zone Import Zone						
	Edit the comment.						

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 Nam	example.com.	
Zone Fil	Choose File Do 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 Power Discussion
- Configuring Route53 Support
- Configuring Split Horizon/Views
 Configuring DNSSEC