



VitalQIP®
DNS/DHCP & IP Address Management
Software and Appliance Solution

8.0 New Features

May 2012

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1. Document Purpose

This document provides an overview of new and enhanced features of the *VitalQIP*® software release 8.0. This document's audience is the current user base and potential new users.

The VitalQIP release 8.0 is the latest release in our next generation architecture. VitalQIP continues to evolve and exploit the new technologies in the market today as well as features to benefit the overall user experience. The market continues to move at a rapid pace with focus that remains on leveraging IP in every way possible, which continues to push the VitalQIP product and its capabilities and operation in our customers' environments on the critical path.

VitalQIP release 8.0 extends the web services architecture finalized in 7.3 by introducing new features as well as the standard patch release bug fixes.

Alcatel-Lucent VitalQIP DNS/DHCP & IP Address Management (IPAM) Software helps organizations efficiently configure, automate, integrate and administer IP services across their entire network - locally or globally. Compatible with multi-vendor technologies, this solution helps organizations centralize the planning and administration of IP addresses thereby delivering significant reductions in infrastructure support costs and improved network availability.

VitalQIP is widely regarded by industry trade groups as the leading IP Management product in the industry and has deployments in over 850 customers including some of the largest telecommunications companies, financial service institutions, universities, and civilian & non-civilian government agencies.

This document intends to provide Alcatel-Lucent customer teams and business partners with a brief update on the new features introduced for the VitalQIP 8.0 release. It provides a high-level overview of the new features and functionalities for each of the software components. It does not however intend to replace any of the VitalQIP user documentation. For technical details associated with the described features, please refer to the VitalQIP administrator/user documentation and release notes.

2. What's New in VitalQIP 8.0?

Some of the key enhancements of 8.0 are:

- **Improved IPv6 Management**
- **IPv6 Granular Permissions**
- **DNS64 Configuration from the GUI**
- **DHCPv6**
- **Improved IPv6 and IPv4 DNS RR management**
- **Bug Fixes – See 8.0 Release Notes**

The feature highlights below provide additional details around these capabilities. If you are not familiar with the other features that were made available in the previous VitalQIP releases, please

refer to the new feature documents from previous versions and the most current VitalQIP product description guide.

2.1. Improved IPv6 Management

Like any new protocol, RFC's for IPv6 are still being modified as real world experience creates the need for modifications. VitalQIP release 8.0 was developed to enhance the way IPv6 is managed. Input for this release came from customers who represent the VitalQIP customer advisory board, ALU IPv6 expertise and the combined real world experience. 8.0 improves the way customers view IP networks, subnets and objects in VitalQIP. VitalQIP is a pioneer in the management of IPv6 subnets which are enormous in size and therefore require careful management.

Because IPv6 subnets are so large, VitalQIP has created the Range concept which will allow breaking subnets into a more manageable space. Ranges can be viewed as scopes in IPv6. Currently there are three Ranges: Reserved, Fixed and Dynamic. Reserved Range is for reserved objects; Fixed Range is used for static addressing; and Dynamic Range is used for dynamic scopes and objects.

IPv6 consists of the following hierarchy: a seed pool feeding a child pool which will contain an assigned block. The assigned block will then provide address space to configure subnets. Until this point IPv4 and IPv6 layout are the same except that IPv6 contains enormous amounts of address space compared to IPv4. Because of the sheer size of a recommended subnet, VitalQIP has created a new field to break up subnets into manageable pieces. The new field is called a Range. The recommended Range size is /96 or 4.294 billion objects. This breaks the subnet down from 18 quintillion addresses into 4.294 billion addresses. Below is an example of IPv6 hierarchy in release 8.0 including ranges:

Name	Address	Assignment Algorithm	% Assigned
corp block 1	2001:400:10::/56	Best Fit From Start	0

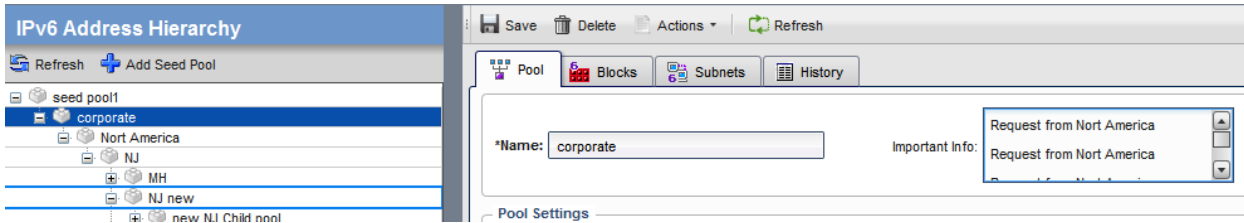
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Seed pool /48
  •Child pool /56
    •Assigned block /56
      •Subnet /64
        •Range /96
  
```

2.2. New Block Authorization Process

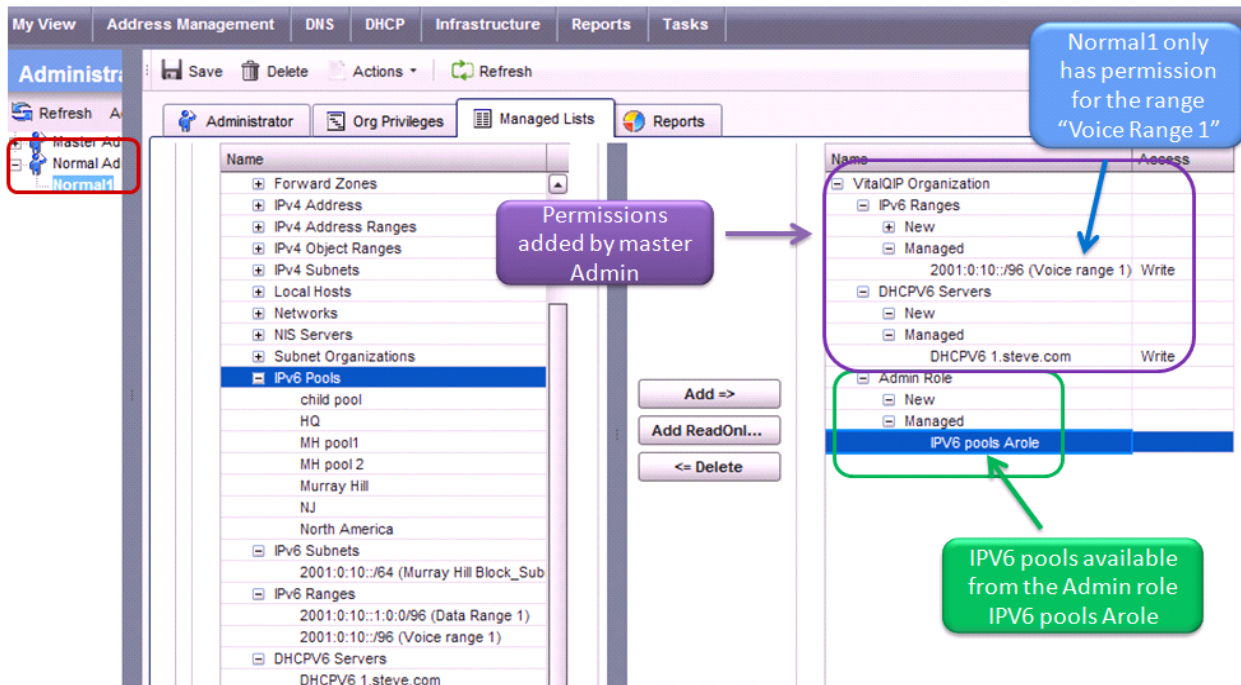
When creating a child pool within VitalQIP, you now have the ability to control block requests. A block request can be set to automatic assignment or approval required. Automatic assignment allows block requests to be automatically processed. Approval required will require an administrator of the parent to approve the transaction. The approval is performed by an

administrator who has permission for the parent pool. The administrator will chose a confirmation screen with requests in it like the following:



2.3. IPv6 Granular Permissions

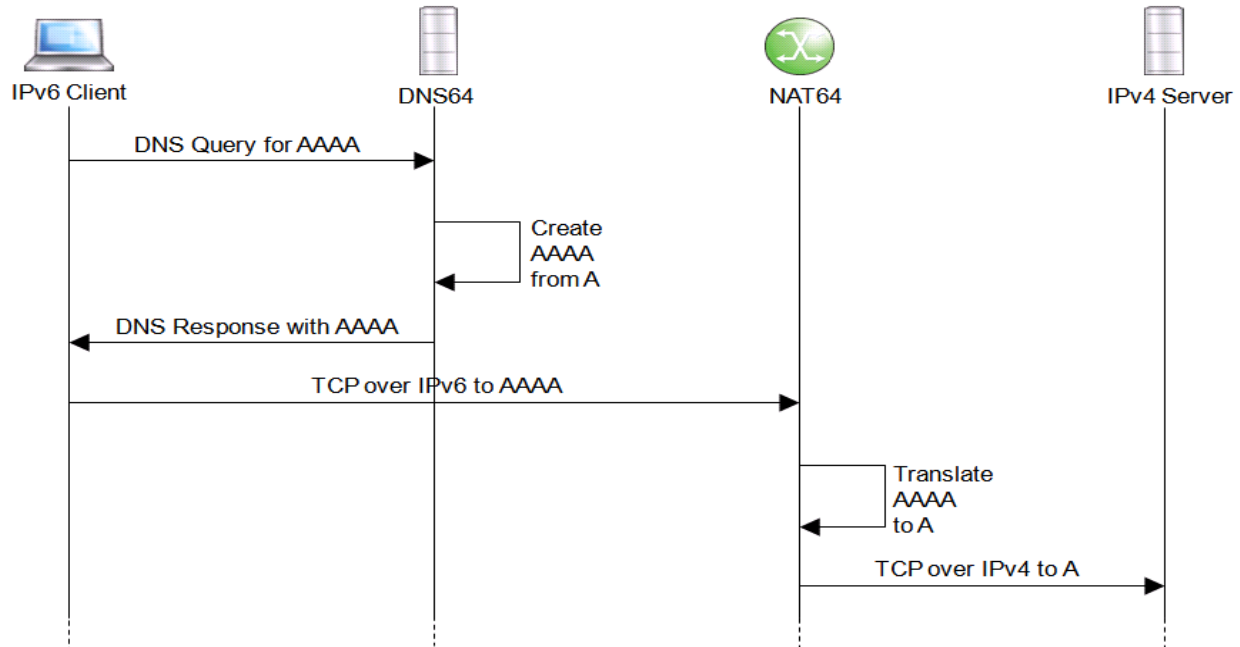
Release 8.0 fully supports IPv6 Granular Permissions. Master Administrators can create admin roles and then assign actions and resources at a very granular level for all existing infrastructure as well as IPv6 pools, subnets, ranges and DHCPv6 services. In the diagram below you can see that the administrator Normal1 has permissions for IPv6 pools that are defined by the admin role “pools Arole”. The master admin has also assigned Normal1 write permission for DHCPv6 as well as only one of the available ranges 2001:0:10::/96 (Voice range 1). Range 2001:0:10::1:0:0/96 (Data range 1) is not accessible by the Normal1 administrator.



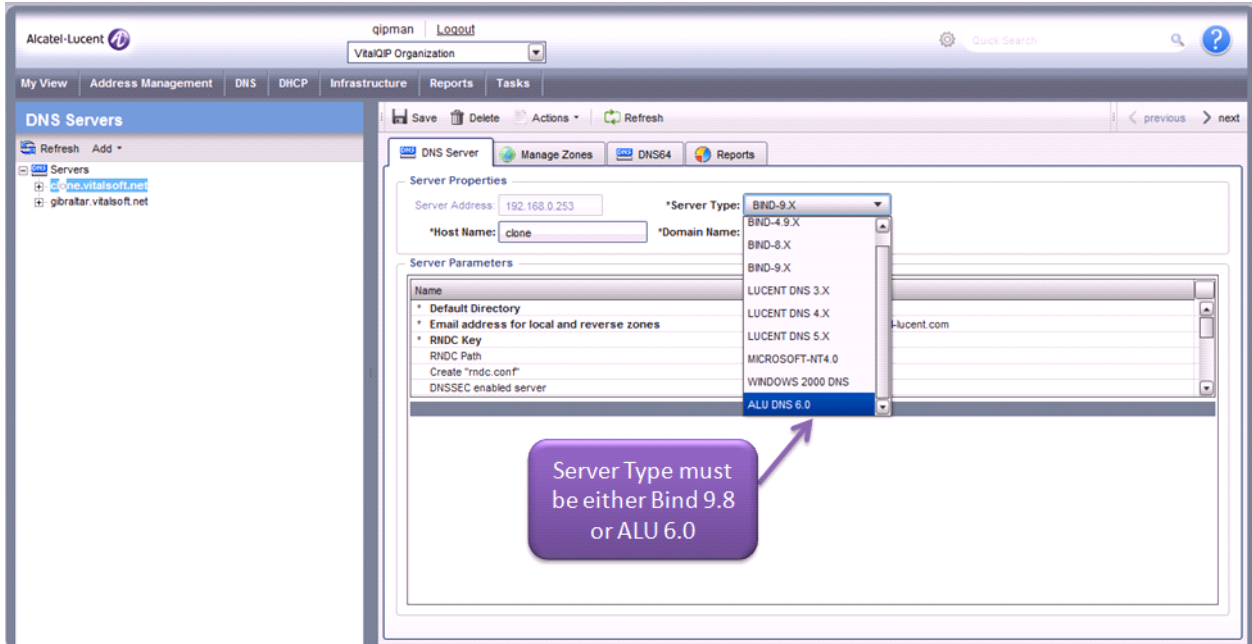
2.4. DNS64 Configuration from the GUI

DNS64 is a mechanism used to create AAAA records from IPv4 A records so those systems not supporting IPv6 yet can be identified or accessed from an IPv6 DNS query. DNS64 creates A records into AAAA records using NAT64 prefix and returns an AAAA record for the IPv6 DNS entry back to the client

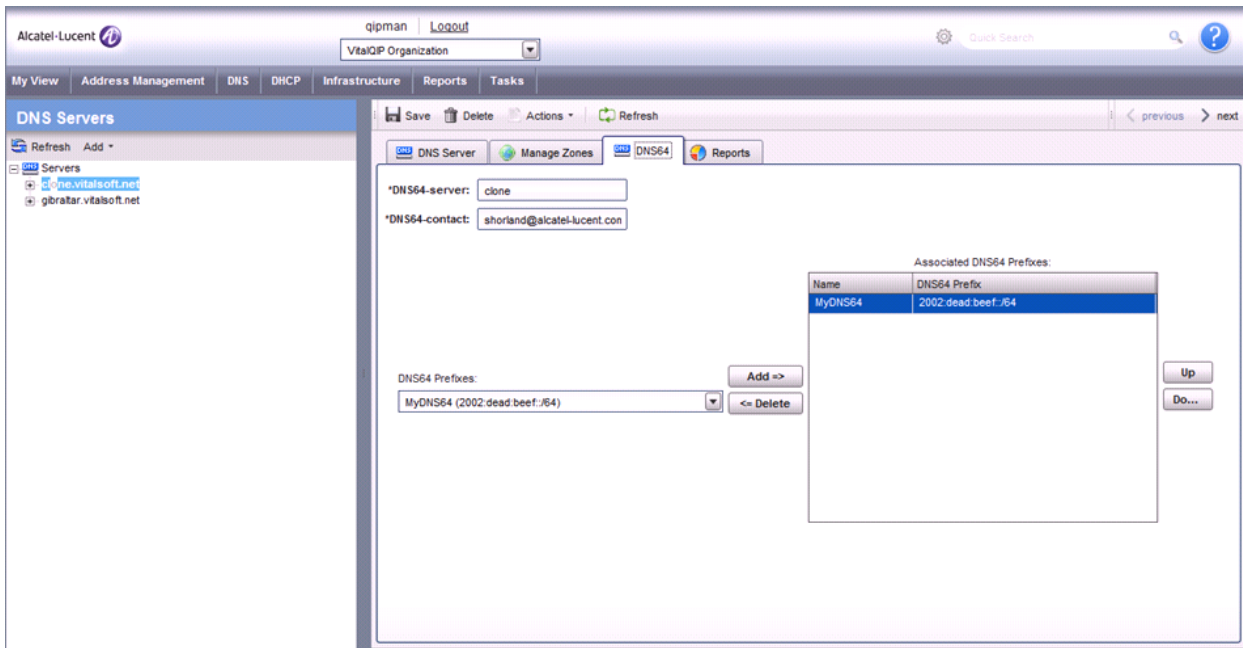
In the following diagram, a NAT64 Router advertises a NAT64 prefix and converts the IPv6 AAAA record into an IPv4 A record for IPv6 clients communicating with IPv4 servers.



DNS64 prefixes are configured from the DNS64 tab located on the DNS server properties page. DNS64 was first introduced into BIND 9.8 so the DNS server must comply. The DNS64 tab is only active if the DNS server type is BIND 9.8 or ALU QDDNS 6.0 or higher.



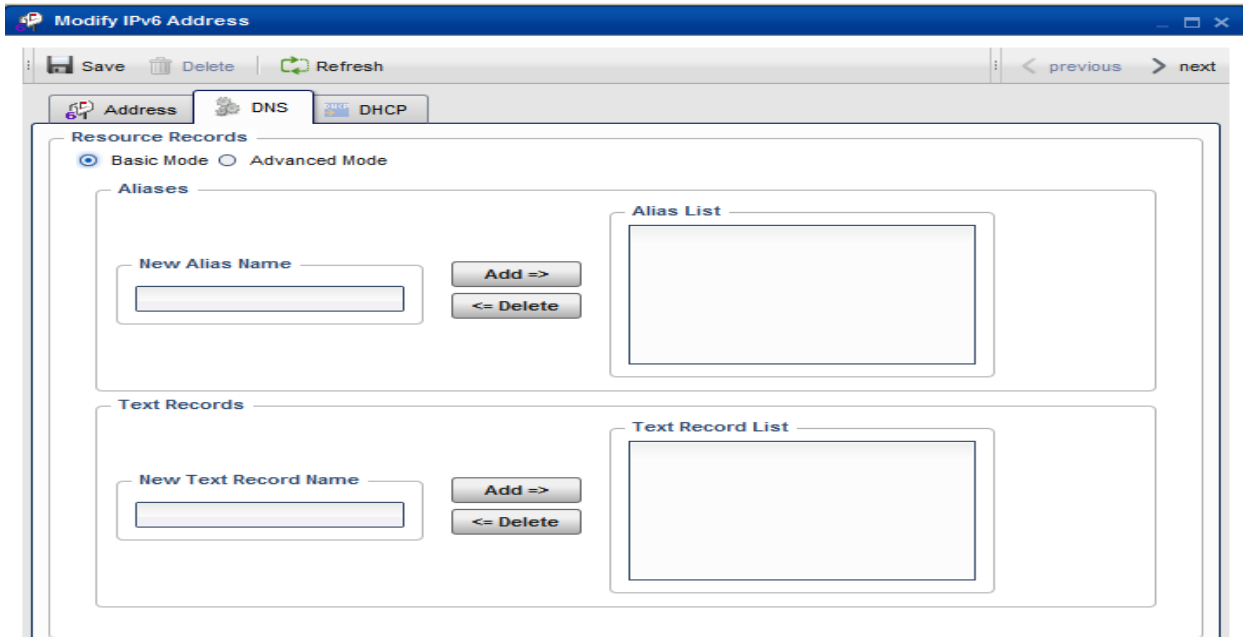
Below is a screen that shows where the administrator would define DNS64 prefixes.



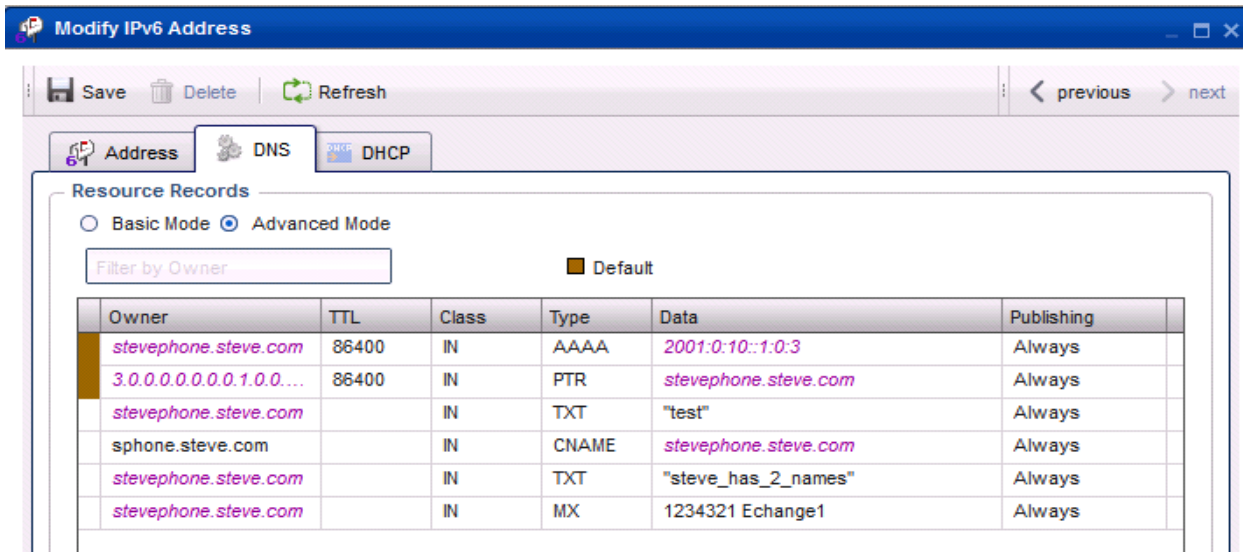
2.5. Improved IPv6 and IPv4 DNS RR Management

Release 8.0 contains a new DNS tab for both IPv6 and IPv4 addresses. The new DNS tab will show all resource records associated to the address. This will make it easier for the administrator to manage resource records and relationships. The new DNS tab contains two views.

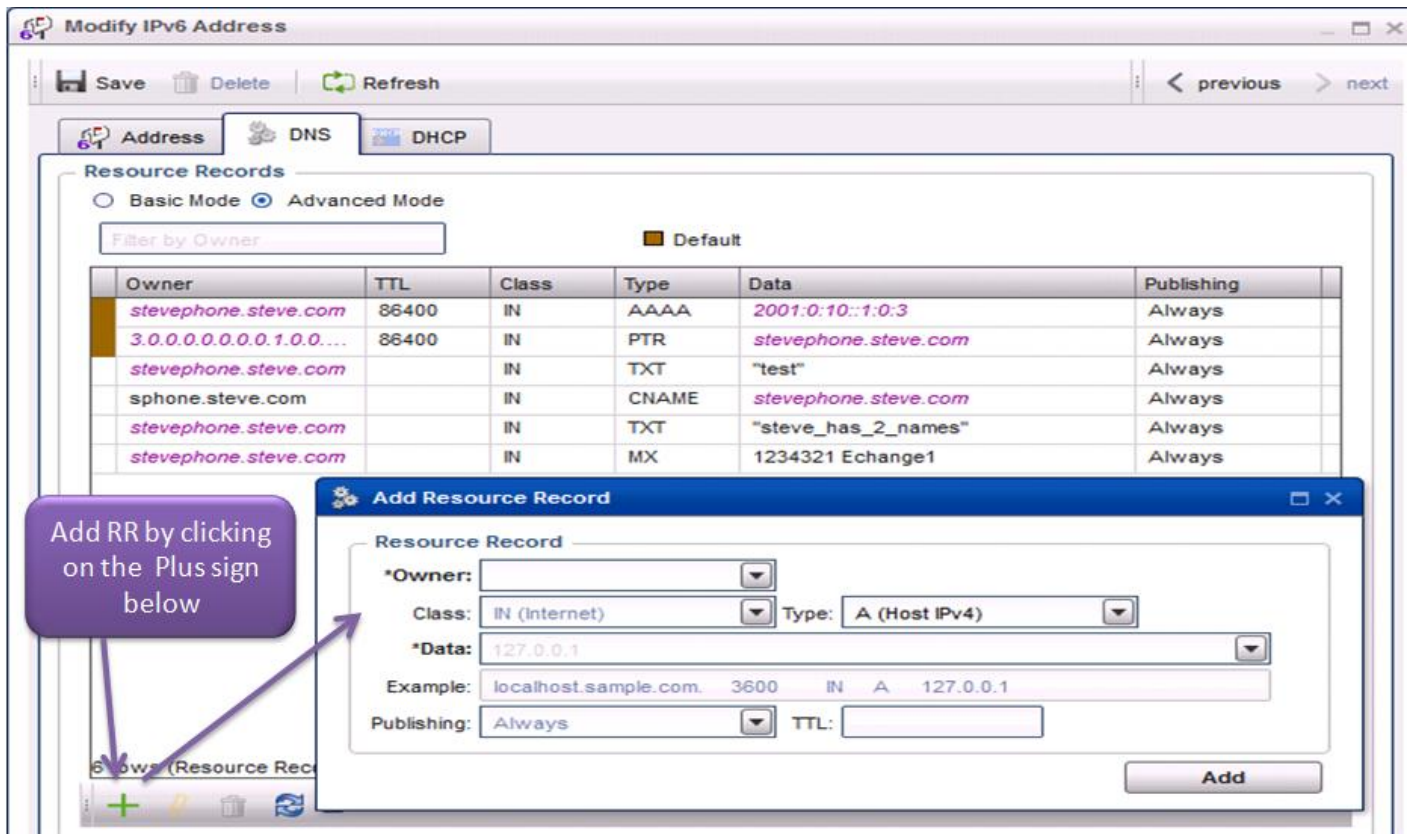
Below is a view of the default view of basic mode. This is where you can add aliases and create new text records



This next view is the advanced view which shows all resource records associated with that IP address.

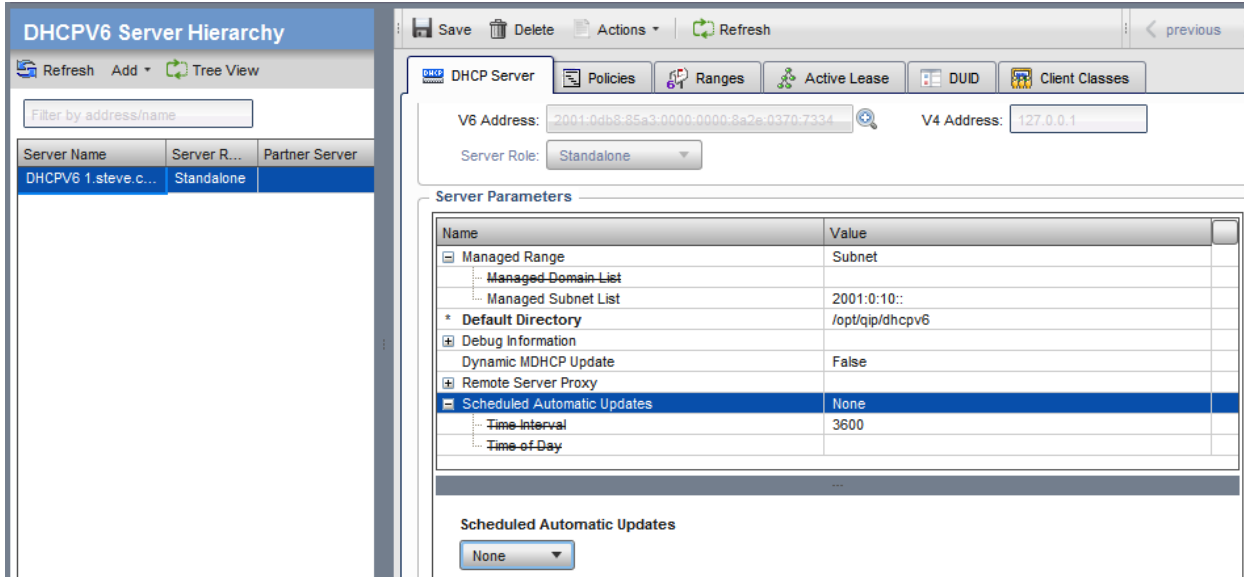


Adding Resource Records is done in the same way as previous releases. Below is a view of this procedure.

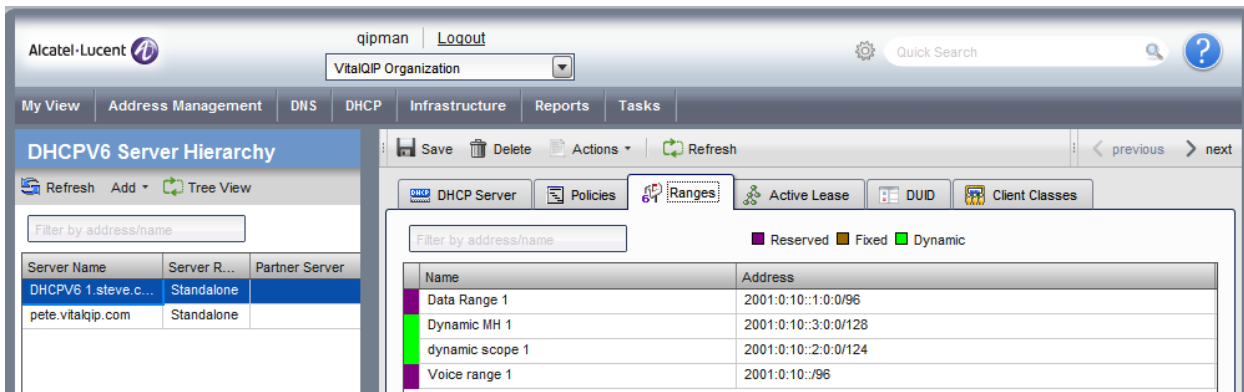


2.6. DHCPv6

VitalQIP Release 8.0 supports the new VitalQIP DHCPv6 server. Release 8.0 comes with enhancements to manage the enormous amount of IP Addresses IPv6 incorporates. When a subnet is created in IPv4, all of the addresses and status for the subnet are stored in the database. In IPv6, only specific data is stored to reduce disk space and improve search performance. With DHCPv6, you assign ranges of type "dynamic". Adjust the size of the range for what you need. Below is a screen that shows where the DHCPv6 server parameters are configured.



Below is a screen shot that shows the assigned Ranges to this DHCPv6 server.



3. VitalQIP Offerings

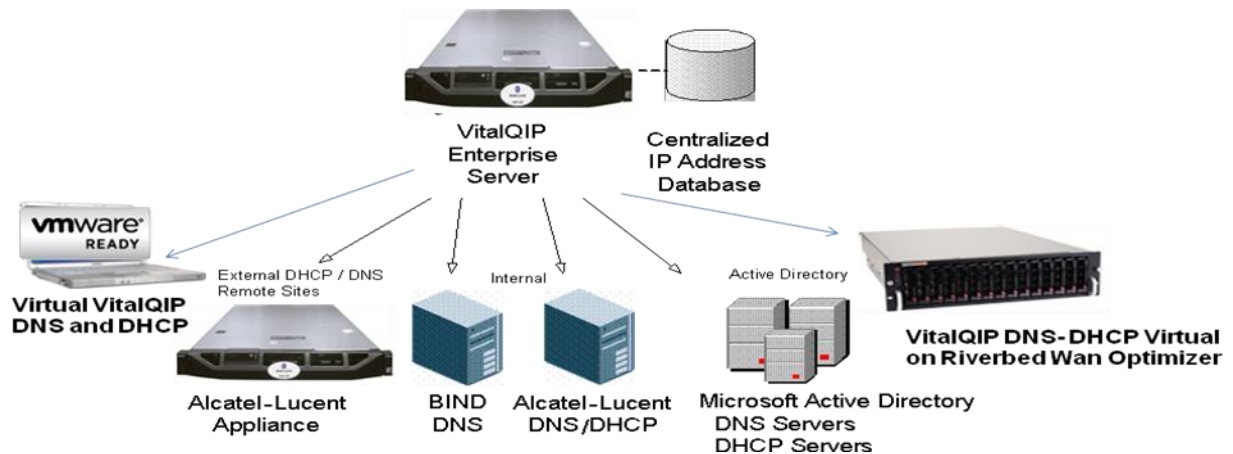
3.1. VitalQIP is very flexible

VitalQIP is available in off the shelf software or one of the three appliance offerings shown below:



<p>Hardware Appliances</p>	
<p>Software Appliances</p>	 <p>Software Appliance ISO image Appliance installation on a Red Hat Enterprise Linux x64 compatible system</p>
<p>Virtual Appliances</p>	

3.2. VitalQIP Supports Multi-Vendor Solutions



VitalQIP is a centralized IP management tool which is also used to configure DNS and DHCP servers from a variety of vendors. This provides a tremendous amount of flexibility to bring

VitalQIP in to existing environments and provide consolidated management of the existing infrastructure.

VitalQIP supports the following servers.

- Alcatel-Lucent DNS servers
- Microsoft DNS servers
- Any BIND 8 or 9 compliant DNS server
- Alcatel-Lucent Software Appliances in a Virtual environment
- Alcatel-Lucent DHCP servers
- Microsoft DHCP servers
- Alcatel-Lucent Appliances
- Alcatel-Lucent Software Appliances
- Alcatel-Lucent DNS and DHCP on Riverbed Wan Optimizer

End user PCs, broadband devices, etc. utilize RFC compliant DHCP or DNS transactions to interface with these servers. Please see the VitalQIP Release Notes for the latest releases of software supported.

For further information on VitalQIP, please visit <http://www.alcatel-lucent.com/vitalqip>