Quick Configuration Guide
Configuring Dynamic DNS in AOS

Introduction

A device's IP address may change, and such changes cannot always be controlled. For example, a router may receive a dynamic address from an Internet service provider (ISP). When a device's IP address changes, DNS servers will no longer be able to resolve its hostname to the newly assigned IP address, which will result in the device no longer being available. In order to map a dynamic IP address with a static hostname, the device should register with an organization that provides dynamic DNS services. AOS products support a client that is compatible with Dynamic Networking Services, Inc. (www.dyndns.org), or DynDNS. This client runs on a router interface and automatically notifies DynDNS whenever the interface's IP address changes. DynDNS then propagates the change throughout its system of DNS servers.

DynDNS provides several types of services:
• Dynamic DNSSM
• Static DNSSM
• Custom DNSSM

Depending on the service selected, it can register a hostname in one of the domains provided by DynDNS or in a custom domain.

Dynamic DNS

Dynamic DNS is a free service that allows the mapping of dynamic addresses of up to five hostnames. It must register hostnames in one of 68 set domains. (See **http://www.dyndns.org/services/dns/dyndns/domains.html** for a list of available domains.) The client running on the AOS product interface automatically updates DynDNS when the interface's IP address changes. If DynDNS does not receive at least one update every 35 days, it deletes the hostname. The AOS client automatically updates DynDNS within this amount of time even if the IP address does not change to prevent the hostname account being deleted. DynDNS provides five globally redundant DNS servers to ensure that the hostname will always resolve. Dynamic DNS is primarily designed for private users. For commercial applications, it's probably best to purchase an account upgrade or Custom DNS.

Static DNS

Static DNS is used to register a device with a free hostname in one of the domains used with Dynamic DNS. Static DNS provides many of the same services as Dynamic DNS, but it is tailored for devices whose IP addresses rarely change. When you use Static DNS, new information takes longer to propagate; however, DynDNS maintains a device's hostname even when the device does not send an update within 35 days.
Static DNS may be a good solution in the following conditions:
• the device's IP address rarely changes
• Need to assign the device a static, easy-to-remember hostname, but you do not want to purchase a domain name

Custom DNS
Custom DNS is used with both static and dynamic IP addresses. Custom DNS provides all the features of Dynamic DNS with several additions. With Custom DNS, it is possible to map a dynamic IP address to a hostname in nearly any domain. (Exceptions include domains in alternate roots; see **http://www.dyndns.org/services/dns/custom/supported-domains.html** for more information.) Also, it is possible to use a company's own domain, giving the admin complete control. The domain name can be purchased from another organization or from DynDNS.

It is possible to configure various hostnames in the domain. Various subdomains can be configured, which can point to the same IP address or different IP addresses. It is possible to configure Custom DNS using DynDNS's standard or expert interface. The standard interface automatically provides services such as having **www.yourdomain.com** point to the same address as **yourdomain.com**.

Hardware/Software Requirements and Limitations
Dynamic DNS is supported in all AOS router products beginning in AOS version 12.01.00. The platforms that support this include: NetVanta, 340, 344, 1224R (POE), 1224STR (POE), 1335 (POE), 1355/6355, 1524ST, 3120, 3130, 3200, 3205, 3305, 3430, 3448, 4305, 5305, and the 7100.

CLI Configuration
For this configuration, the focus will be configuring DynDNS for a remote business location. In most situations, this will involve an Internet circuit which may use a dynamic IP address through the use of DHCP or PPP Negotiation. In this instance, it would be preferable to use a DynDNS service that will allow the update of registration on a regular basis. To configure an interface for DynDNS, use the following syntax from the interface configuration mode context:

Syntax: dynamic-dns dyndns *<hostname> <user-id> <password>*

Replace *hostname*, *user-id*, and *password*, with the information supplied by the DynamicDNS provider. Once this is configured the NetVanta router should attempt to register the hostname listed.

Web Configuration
DynamicDNS can also be configured from the Web GUI. Once all IP interfaces have been configured, go to IP Interfaces under Router (or Router/Bridge depending on the product). The menu from a 1224STR (POE) is shown below:
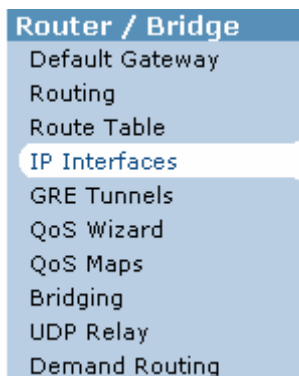
On the IP Interfaces page, select the interface that needs to be registered (make sure the IP address used is a Public Address). Click the correct IP Interface and then scroll down the next page and locate the section listed IP Settings as shown below:

From here, click the Dynamic DNS dropdown box to match the type of Dynamic DNS service being used (DynDNS.org, Static, or Custom). Next, configure the hostname as well as the username and password that should have been provided upon registering the DNS hostname with the DynDNS provider. After the applicable information is entered, click the Apply button to finish the configuration. Once this has been completed, click the Save button at the top right hand corner of the screen to save the configuration so it will be preserved.

Troubleshooting

It is possible to check to see if Dynamic DNS has been updated by using the following command from the Enable prompt:

Syntax: show dynamic-dns

vlan 2:
 Hostname: test123test.dyndns.org
 Is Updated: yes
 Registered IP: 10.19.243.122
 Update Time: 15:05:02 CST Sat Oct 06 2007
 Next Update at: 15:05:02 CST Wed Oct 31 2007

It is also possible to use the debug feature as shown below:

Syntax: debug dynamic-dns

DDNS: Sending DNS query for dyndns's hostname members.dyndns.org
DDNS: Could not resolve dyndns service hostname members.dyndns.org
DDNS: Trying again in 5 minutes

As is shown above, this attempt failed as the router could not resolve the hostname. If this occurs, check the hostname and that the router has name-servers correctly configured. Below is the output from a successful update:

DDNS: updating dyndns GET string:
GET /nic/update?system=dyndns&hostname=test123test.dyndns.org&myip=10.19.243.122
HTTP/1.0
Host: members.dyndns.org
Authorization: Basic ZG9jdGVzdDpzMGNjM3IjNQ==
User-Agent: nas-rout-VU-linbar/NetVanta 1224STR PWR

DDNS: Sending DNS query for dyndns's hostname members.dyndns.org
DDNS: Resolved dyndns's hostname members.dyndns.org to 63.208.196.96
DDNS: Connecting to dyndns service at 63.208.196.96
DDNS: Connected to dyndns service
DDNS: sent update message
DDNS: got update response: HTTP/1.1 200 OK
Date: Fri, 12 Oct 2007 19:32:23 GMT
Server: Apache
Content-Type: text/plain
Connection: close

good 10.19.243.122
DDNS: Successful update of Hostname=test123test.dyndns.org

If you experience any problems using your ADTRAN product, please contact ADTRAN Technical Support.

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