



Dynamic DNS

This chapter describes how to configure DDNS update methods and includes the following topics:

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Information About DDNS

DDNS update integrates DNS with DHCP. The two protocols are complementary: DHCP centralizes and automates IP address allocation; DDNS update automatically records the association between assigned addresses and hostnames at predefined intervals. DDNS allows frequently changing address-hostname associations to be updated frequently. Mobile hosts, for example, can then move freely on a network without user or administrator intervention. DDNS provides the necessary dynamic update and synchronization of the name-to-address mapping and address-to-name mapping on the DNS server. To configure the DNS server for other uses, see [Configuring the DNS Server, page 17-9](#). To configure DHCP, see [Configuring the DHCP Server, page 19-4](#).

EDNS allows DNS requesters to advertise the size of their UDP packets and facilitates the transfer of packets larger than 512 octets. When a DNS server receives a request over UDP, it identifies the size of the UDP packet from the OPT resource record (RR) and scales its response to contain as many resource records as are allowed in the maximum UDP packet size specified by the requester. The size of the DNS packets can be up to 4096 bytes for BIND or 1280 bytes for the Windows 2003 DNS Server. Several additional **message-length maximum** commands are available:

- The existing global limit: **message-length maximum 512**
- A client or server specific limit: **message-length maximum client 4096** and **message-length maximum server 4096**
- The dynamic value specified in the OPT RR field: **message-length maximum client auto**

If the three commands are present at the same time, the ASA allows the automatically configured length up to the configured client or server maximum. For all other DNS traffic, the message-length maximum is used.

Licensing Requirements for DDNS

The following table shows the licensing requirements for DDNS:

Model	License Requirement
ASAv	Standard or Premium License.
All other models	Base License.

Guidelines and Limitations

Failover Guidelines

Supports Active/Active and Active/Standby failover.

Firewall Mode Guidelines

Supported in routed firewall mode.

Context Mode Guidelines

Supported in single and multiple context modes.

Supported in transparent mode for the DNS Client pane.

IPv6 Guidelines

Supports IPv6.

Configuring Dynamic DNS

	Command	Purpose
Step 1	ddns update method <i>name</i> Example: <pre>ciscoasa(config)# ddns update method ddns-2</pre>	Creates a DDNS update method ddns-2 that dynamically updates DNS resource records (RRs).
Step 2	ddns both Example: <pre>ciscoasa(DDNS-update-method)# ddns both</pre>	Specifies that the client updates both the DNS A and PTR resource records (RRs).
Step 3	interface <i>mapped_name</i> Example: <pre>ciscoasa(DDNS-update-method)# interface Ethernet0</pre>	Configures an interface Ethernet 0 and enters interface configuration mode.
Step 4	ddns update [<i>method-name</i> hostname <i>hostname</i>] Example: <pre>ciscoasa(config-if)# ddns update ddns-2 ciscoasa(config-if)# ddns update hostname asa.example.com</pre>	Associates the the DDNS method ddns-2 with the Ethernet0 interface and an update hostname.
Step 5	dhcp-client update dns [server { both none }] Example: <pre>ciscoasa(config)# dhcp-client update dns server none</pre>	Configures the DHCP client to request that the DHCP server perform no updates.
Step 6	ip address dhcp Example: <pre>ciscoasa(if-config)# ip address dhcp</pre>	Uses DHCP to obtain an IP address for the interface.
Step 7	dhcpd update dns [both] [override] [interface <i>srv_ifc_name</i>] Example: <pre>ciscoasa(if-config)# dhcpd update dns both override</pre>	Configures DHCP server to override the client update requests.

	Command	Purpose
Step 1	interface <i>mapped_name</i> Example: ciscoasa(config)# interface Ethernet0	Configures an interface Ethernet 0.
Step 2	dhcp-client update dns [server { both none }] Example: ciscoasa(config-if)# dhcp-client update dns both	DHCP client requests that the DHCP server update both the DNS A and PTR resource records.
Step 3	ddns update [<i>method-name</i> hostname <i>hostname</i>] Example: ciscoasa(config-if)# ddns update hostname asa	Configures the DHCP client on interface Ethernet 0.
Step 4	dhcpd update dns [both] [override] [interface <i>srv_ifc_name</i>] Example: ciscoasa(config-if)# dhcpd update dns	Configures DHCP server to perform DDNS updates.
Step 5	dhcpd domain <i>domain_name</i> [interface <i>if_name</i>] Example: ciscoasa(config-if)# dhcpd domain example.com	Defines the DNS domain name for DHCP clients.
	Command	Purpose
Step 1	ddns update method <i>name</i> Example: ciscoasa(config)# ddns update method ddns-2	Creates a DDNS update method ddns-2 that dynamically updates DNS resource records (RRs).
Step 2	ddns [both] Example: ciscoasa(DDNS-update-method)# ddns	Specifies a dynamic DNS (DDNS) update method.
Step 3	interface <i>mapped_name</i> Example: ciscoasa(DDNS-update-method)# interface Ethernet0	Configures an interface Ethernet 0.

	Command	Purpose
Step 4	<p>dhcp-client update dns [server {both none}]</p> <p>Example: <pre>ciscoasa(config-if)# dhcp-client update dns</pre></p>	Configures the update parameters that the DHCP client passes to the DHCP server.
Step 5	<p>ddns update [<i>method-name</i> hostname <i>hostname</i>]</p> <p>Example: <pre>ciscoasa(config-if)# ddns update ddns-2 ciscoasa(config-if)# ddns update hostname asa</pre></p>	Associates the the DDNS method ddns-2 with the Ethernet0 interface and an update hostname.
Step 6	<p>dhcpd update dns [both] [override] [interface <i>srv_ifc_name</i>]</p> <p>Example: <pre>ciscoasa(if-config)# dhcpd update dns</pre></p>	Configures DHCP server to perform DDNS updates.
Step 7	<p>dhcpd domain <i>domain_name</i> [interface <i>if_name</i>]</p> <p>Example: <pre>ciscoasa(config-if)# dhcpd domain example.com</pre></p>	Defines the DNS domain name for DHCP clients.

Dynamic DNS provides address and domain name mapping so that hosts can find each other, even though their DHCP-assigned IP addresses change frequently. The DDNS name and address mapping are stored on the DHCP server in two resource records: the A RR includes the name-to-IP address mapping, while the PTR RR maps addresses to names. Of the two methods for performing DDNS updates—the IETF standard defined by RFC 2136 and a generic HTTP method—the ASA supports the IETF method in this release.

The Dynamic DNS pane shows the configured DDNS update methods and the interfaces that have been configured for DDNS. By automatically recording the association between assigned addresses and hostnames at pre-defined intervals, DDNS allows frequently changing address-hostname associations to be updated regularly. Mobile hosts, for example, can then move freely on a network without user or administrator intervention.

To configure dynamic DNS client settings for updating the DNS server, perform the following steps:

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- Step 1** In the ASDM main application window, choose **Configuration > Device Management > DNS > Dynamic DNS**.
 - Step 2** Click **Add** to display the Add Dynamic DNS Update Method dialog box.
 - Step 3** Enter the name for the DDNS update method.
 - Step 4** Specify the update interval between DNS update attempts configured for the update method in days, hours, minutes, and seconds.
 - Choose the number of days between update attempts from 0 to 364.
 - Choose the number of hours (in whole numbers) between update attempts from 0 to 23.

- Choose the number of minutes (in whole numbers) between update attempts from 0 to 59.
- Choose the number of seconds (in whole numbers) between update attempts from 0 to 59.

These units are additive. That is, if you enter 0 days, 0 hours, 5 minutes and 15 seconds, the update method tries an update every 5 minutes and 15 seconds for as long as the method is active.

- Step 5** To store server resource record updates that the DNS client updates, choose one of the following options:
- Both the A resource record and the PTR resource record.
 - The A resource records only.
- Step 6** Click **OK** to close the Add Dynamic DNS Update Method dialog box.
The new dynamic DNS client settings appear.
- Step 7** To change these settings, click **Edit** to display the Edit Dynamic DDNS Update Method dialog box. When you edit an existing method, the Name field is *display-only* and shows the name of the selected method for editing
- Step 8** Make your desired changes, and then click **OK** to close the Edit Dynamic DDNS Update Method dialog box.
The revised dynamic DNS client settings appear.
- Step 9** To remove configured settings, choose the settings from the list, and then click **Delete**.
- Step 10** To add DDNS settings for each interface configured for DDNS, click **Add** to display the Add Dynamic DNS Interface Settings dialog box.
- Step 11** Choose the interface from the drop-down list.
- Step 12** Choose the update method assigned to the interface from the drop-down list.
- Step 13** Enter the hostname of the DDNS client.
- Step 14** To store resource record updates, choose one of the following options:
- Default (PTR Records) to specify that the client request PTR record updating by the server.
 - Both (PTR Records and A Records) to specify that the client request both the A and PTR DNS resource records by the server.
 - None to specify that the client request no updates by the server.



Note DHCP must be enabled on the selected interface for this action to take effect.

- Step 15** Click **OK** to close the Add Dynamic DNS Interface Settings dialog box.
The new dynamic DNS interface settings appear.
- Step 16** To change these settings, click **Edit** to display the Edit Dynamic DNS Interface Settings dialog box.
- Step 17** Make your desired changes, and then click **OK** to close the Edit Dynamic DNS Interface Settings dialog box.
The revised dynamic DNS interface settings appear.
- Step 18** To remove configured settings, choose the settings from the list, and then click **Delete**.
- Step 19** Click **Apply** to save your changes, or click **Reset** to discard them and enter new ones.
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DDNS Monitoring

To monitor DDNS, perform the following steps:

Path	Purpose
Tools > Command Line Interface Enter the show running-config ddns command, then click Send .	Shows the current DDNS configuration.
Tools > Command Line Interface Enter the show running-config dns server-group command, then click Send .	Shows the current DNS server group status.

Feature History for DDNS

Table 18-1 lists each feature change and the platform release in which it was implemented.

ASDM is backward-compatible with multiple platform releases, so the specific ASDM release in which support was added is not listed.

Table 18-1 Feature History for DDNS

Feature Name	Releases	Feature Information
DDNS	7.0(1)	We introduced this feature. We introduced the following screens: Configuration > Device Management > DNS > DNS Client. Configuration > Device Management > DNS > Dynamic DNS.

