

*Knowledge Base***Description of How DHCP Integrates Dynamic DNS**

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The information in this article applies to:

- Microsoft Windows NT Server 4.0
  - Microsoft Windows NT Workstation 4.0
  - Microsoft Windows NT Server, Enterprise Edition 4.0
  - Microsoft Windows 2000 Server
  - Microsoft Windows 2000 Professional
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**SUMMARY**

When a network client receives an Internet Protocol (IP) address and related configuration information from a Dynamic Host Configuration Protocol (DHCP) server, the client may register an "A" (Host) record with the Domain Name Server (DNS), or the client may allow the DHCP server to register either an "A" (Host) record, a PTR (pointer) record, or both in the DNS database. The DHCP server keeps track of the PTR (pointer) record for the client.

**MORE INFORMATION**

The Fully Qualified Domain Name (FQDN) option (code 81) allows the client to send its FQDN to the DHCP server in the DHCPREQUEST packet. This enables the client to notify the DHCP server as to the service level it requires.

The FQDN option consists of the following six fields:

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Code      - Specifies the code for this option (81).
Len       - Specifies the length of this option (minimum of 4).
Flags     - Specifies the type of service.
0         - Client will register the "A" (Host) record.
1         - Client would like DHCP to register the "A" (Host) record.
3         - DHCP will register the "A" (Host) record regardless of
           the client's request.
RCODE1    - Specifies a response code the server is sending to the
           client.
RCODE2    - Specifies a further delineation of RCODE1.
Domain Name - Specifies the FQDN of the client.
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If the client requests to register its resource records with the DNS, it is responsible for generating the dynamic UPDATE request per Request for Comments (RFC) 2136, and then the DHCP server registers its PTR (pointer) record.

By default, Microsoft clients that support the FQDN option (currently Windows 2000 and Windows XP) register each of the adapter host records and request that the DHCP service register the PTR (pointer) record. The DHCP service adds the PTR (pointer) records to the zone and cleans up the PTR (pointer) and "A" (Host) records in the zone upon lease expiration. The DHCP service also registers both the "A" (Host) and PTR (pointer) records for legacy clients, and performs any necessary cleanup action.

Clients that do not support the FQDN option can still be dynamically registered in the DNS zone. If configured to do so, the DHCP server obtains the host name of legacy clients from the DHCP REQUEST packet. After appending the domain name given for that scope, the DHCP server registers the name.

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