

General IP Configuration

IP interface addresses can be configured manually by the user, or automatically configured by a DHCP server. This section provides information for defining the device IP addresses, either manually or by making the device a DHCP client.

- Domain Name System, on page 1

Domain Name System

The Domain Name System (DNS) translates domain names into IP addresses for the purpose of locating and addressing hosts.

As a DNS client, the device resolves domain names to IP addresses through the use of one or more configured DNS servers.

DNS Settings

Use the DNS Settings page to enable the DNS feature, configure the DNS servers and set the default domain used by the device. To configure the DNS Settings, follow these steps;

Procedure

Step 1 Click **General IP Configuration** > **DNS** > **DNS Settings**.

Step 2 In Basic Mode, enter the parameters:

- Server Definition—Select one of the following options for defining the DNS server:
  - By IP Address—IP Address will be entered for DNS server.
  - Disabled—No DNS server will be defined.
- Server IP Address—If you selected By IP Address above, enter the IP address of the DNS server.
- Default Domain Name—Enter the DNS domain name used to complete unqualified host names. The device appends this to all non fully qualified domain names (NFQDNs) turning them into FQDNs.

  Note
  Don’t include the initial period that separates an unqualified name from the domain name (like cisco.com).

Step 3 In Advanced Mode, enter the parameters.

- DNS—Select to designate the device as a DNS client, which can resolve DNS names into IP addresses through one or more configured DNS servers.
- Polling Retries—Enter the number of times to send a DNS query to a DNS server until the device decides that the DNS server doesn't exist.
- Polling Timeout—Enter the number of seconds that the device waits for a response to a DNS query.
- Polling Interval—Enter how often (in seconds) the device sends DNS query packets after the number of retries has been exhausted.
  - Use Default—Select to use the default value.

    The default value = 2*(Polling Retries + 1)* Polling Timeout
  - User Defined—Select to enter a user-defined value.
- Default Parameters—Enter the following default parameters:
  - Default Domain Name—Enter the DNS domain name used to complete unqualified host names. The device appends this to all non fully qualified domain names (NFQDNs) turning them into FQDNs.

    Note
    Don't include the initial period that separates an unqualified name from the domain name (like cisco.com).
  - DHCP Domain Search List—Click **Details** to view the list of DNS servers configured on the device.

Step 4 Click **Apply**. The Running Configuration file is updated.

The DNS Server Table displays the following information for each DNS server configured:

- DNS Server—The IP address of the DNS server.
- Preference—Each server has a preference value, a lower value means a higher chance of being used.
- Source—Source of the server's IP address (static or DHCPv4 or DHCPv6)
- Interface—Interface of the server's IP address.

Step 5 Up to eight DNS servers can be defined. To add a DNS server, click **Add.**

Step 6 Enter the parameters.

- IP Version—Select Version 6 for IPv6 or Version 4 for IPv4.
- IPv6 Address Type—Select the IPv6 address type (if IPv6 is used). The options are:
  - Link Local—The IPv6 address uniquely identifies hosts on a single network link. A link local address has a prefix of FE80, isn't routable, and can be used for communication only on the local network. Only one link local address is supported. If a link local address exists on the interface, this entry replaces the address in the configuration.
  - Global—The IPv6 address is a global Unicast IPV6 type that is visible and reachable from other networks.
- Link Local Interface—If the IPv6 address type is Link Local, select the interface through which it's received.
- DNS Server IP Address—Enter the DNS server IP address.

- Preference—Select a value that determines the order in which the domains are used (from low to high). This effectively determines the order in which unqualified names are completed during DNS queries.

Step 7 Click **Apply**. The DNS server is saved to the Running Configuration file.

Search List

The search list can contain one static entry defined by the user in the DNS Settings, on page 1 and dynamic entries received from DHCPv4 and DHCPv6 servers.

To view the domain names that have been configured on the device, click **General IP Configuration** > **DNS** > **Search List**.

The following fields are displayed for each DNS server configured on the device.

- Domain Name—Name of domain that can be used on the device.
- Source—Source of the server's IP address (static or DHCPv4 or DHCPv6) for this domain.
- Interface—Interface of the server's IP address for this domain.
- Preference—This is the order in which the domains are used (from low to high). This effectively determines the order in which unqualified names are completed during DNS queries.

Host Mapping

Host name/IP address mappings are stored in the Host Mapping Table (DNS cache).

This cache can contain the following type of entries:

- Static Entries—These are mapping pairs that manually added to the cache. There can be up to 64 static entries.
- Dynamic Entries—Are mapping pairs that are either added by the system as a result of being used by the user, or an entry for each IP address configured on the device by DHCP. There can be 256 dynamic entries.

Name resolution always begins by checking static entries, continues by checking the dynamic entries, and ends by sending requests to the external DNS server. Eight IP addresses are supported per DNS server per host name.

To add a host name and its IP address, complete the following:

Procedure

Step 1 Click **General IP Configuration** > **DNS** > **Host Mapping**.

Step 2 If required, select one of the following options from Clear Table to clear some or all of the entries in the Host Mapping Table.

- Static Only—Deletes the static hosts.

- Dynamic Only—Deletes the dynamic hosts.
- All Dynamic & Static—Deletes the static and dynamic hosts.

The Host Mapping Table displays the following fields:

- Host Name—User-defined host name or fully-qualified name.
- IP Address—The host IP address.
- IP Version—IP version of the host IP address.
- Type—Is this a Dynamic or Static entry to the cache.
- Status— Displays the results of attempts to access the host
  - OK—Attempt succeeded.
  - Negative Cache—Attempt failed, do not try again.
  - No Response—There was no response, but system can try again in future.
- TTL (Sec)— If this is a dynamic entry, how long will it remain in the cache.
- Remaining TTL (Sec)— If this is a dynamic entry, how much longer will it remain in the cache.

Step 3 To add a host mapping, click **Add** and configure the following:

- IP Version—Select Version 6 for IPv6 or Version 4 for IPv4.
- IPv6 Address Type—Select the IPv6 address type (if IPv6 is used). The options are:
  - Link Local—The IPv6 address uniquely identifies hosts on a single network link. A link local address has a prefix of FE80, isn't routable, and can be used for communication only on the local network. Only one link local address is supported. If a link local address exists on the interface, this entry replaces the address in the configuration.
  - Global—The IPv6 address is a global Unicast IPV6 type that is visible and reachable from other networks.
- Link Local Interface—If the IPv6 address type is Link Local, select the interface through which it's received.
- Host Name—Enter a user-defined host name or fully qualified name. Host names are restricted to the ASCII letters A through Z (case-insensitive), the digits 0–9, the underscore, and the hyphen. A period (.) is used to separate labels.
- IP Address—Enter a single address or up to eight associated IP addresses (IPv4 or IPv6).

Step 4 Click **Apply**. The settings are saved to the Running Configuration file.