

1 DNS Commands

Command	Function
clear host	Clear the dynamic domain name cache entries.
clear dns proxy host	Clear the dynamic domain name cache entries on the DNS proxy.
ip domain-lookup	Enable DNS for domain name resolution, or enable DNS for domain name resolution and specify the source interface and IP address for domain name resolution.
ip host	Configure a static mapping between a host name and an IP address.
ip name-server	Configure an IPv4/IPv6 address for a DNS server.
ipv6 host	Configure a static mapping between a host name and an IPv6 address.
ip dns proxy cache	Enable the function of caching dynamic entries on the DNS proxy.
ip dns proxy enable	Enable the DNS proxy function.
ip dns proxy host	Configure a static mapping between a host name and an IP address on the DNS proxy.
ip dns proxy nameserver	Configure the IP address of a DNS server on the DNS proxy.
ip dns proxy port-range	Configure the range of a port used for query in upper-level DNS servers.
ip dns proxy ttl	Configure the time to live (TTL) of the reply packet in response to a static entry.
show hosts	Display the DNS configuration.
show dns proxy hosts	Display the entries on the DNS proxy.
show dns proxy statistics	Display the DNS proxy packet statistics.

1.1 clear host

Function

Run the **clear host** command to clear the dynamic domain name cache entries.

Syntax

```
clear host [ * | host-name ]
```

Parameter Description

host-name: Name of a host whose dynamic domain name entries need to be deleted.

*: Deletes all dynamic domain name entries.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

Mapping records in the domain name cache are sourced from the following:

- Static configuration by running the **ip host** or **ipv6 host** command;
- Dynamic learning through DNS.

This command can be used to delete domain name records dynamically learned through DNS.

Examples

The following example clears all the dynamic domain name cache entries.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)#clear host *
```

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.2 clear dns proxy host

Function

Run the **clear dns proxy host** command to clear the dynamic domain name cache entries on the DNS proxy.

Syntax

```
clear dns proxy host [ * | host-name ]
```

Parameter Description

host-name: Name of a host whose dynamic domain name cache entries need to be deleted.

*: Deletes all dynamic domain name entries.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

Mapping records in the domain name cache are sourced from the following:

- Static configuration by running the **ip dns proxy host** command;
- Dynamic learning through DNS.

This command can be used to delete domain name records dynamically learned through DNS.

Examples

The following example deletes all the dynamic domain name cache entries.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# clear dns proxy host *
```

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.3 ip domain-lookup

Function

Run the **ip domain-lookup** command to enable DNS for domain name resolution, or enable DNS for domain name resolution and specify the source interface and IP address for domain name resolution.

Run the **no** form of this command to disable this feature.

Run the **default** form of this command to restore the default configuration.

The DNS domain name resolution function is enabled and the function of domain name resolution using a specified source interface or IP address is disabled by default.

Syntax

```
ip domain-lookup [ oob [ via mgmt-name ] ] [ vrf vrf-name ] [ source { interface-type interface-number | ip  
ipv4-address | ipv6 ipv6-address } ] ]
```

```
no ip domain-lookup [ oob [ via mgmt-name ] ] [ vrf vrf-name ] source ]
```

```
default ip domain-lookup [ oob [ via mgmt-name ] ] [ vrf vrf-name ] source ]
```

Parameter Description

oob: Configures out-of-band management.

via *mgmt-name*: Specifies the outbound management interface of packets.

vrf *vrf-name*: Specifies a VRF instance. If this parameter is not specified, it indicates the public network instance.

source: Specifies the source interface or source IP address for domain name resolution.

interface-type interface-number: L3 interface type and interface number.

ip *ipv4-address*: IPv4 address.

ipv6 *ipv6-address*: IPv6 address.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

By default, no source interface is specified, and the source IP address of a DNS query packet is decided through the routing process.

If a source interface is specified in the command, when an IPv4 DNS query packet is sent, the primary IPv4 address of the source interface is used as the source address of the DNS query packet. When an IPv6 DNS query packet is sent, the first effective IPv6 address of the source interface is used as the source address of the DNS query packet. If no address is configured for a source interface, a DNS query packet fails to be sent.

If an IPv4 source address is specified in the command, when an IPv4 DNS query packet is sent, the configured IPv4 address serves as the source address of the IPv4 DNS query packet, and the sending of an IPv6 DNS query packet will fail. If an IPv6 source address is specified in the command, when an IPv6 DNS query packet is sent, the configured IPv6 address serves as the source address of the IPv6 DNS query packet, and the sending of an IPv4 DNS query packet will fail.

Caution

An effective IPv6 address is a unicast address and it cannot be either a local link address or a loopback address.

Examples

The following example disables the DNS domain name resolution and disables the function of domain name resolution using a specified source interface or IP address.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# no ip domain-lookup
```

Notifications

When the configured interface is not an L3 interface, the following notification will be displayed:

```
% Error: AggregatePort 1 is not l3 layer!
```

When the configured address is an illegitimate IPv4 address, for example, a loopback address, the following notification will be displayed:

```
% Invalid ip(1.1.1.1) address!
```

When the configured address is an illegitimate IPv6 address, for example, a local-link address or a loopback address, the following notification will be displayed:

```
% Invalid ipv6(0000::1) address!
```

Common Errors

- The configured source interface for DNS domain name resolution is an L2 interface and this command cannot be successfully configured.
- The configured source IP address for DNS domain name resolution is not a unicast address and this command cannot be successfully configured.

Platform Description

N/A

Related Commands

N/A

1.4 ip host

Function

Run the **ip host** command to configure a static mapping between a host name and an IP address.

Run the **no** form of this command to remove this configuration.

No static mapping between a host name and an IP address is configured by default.

Syntax

```
ip host [ oob ] host-name [ telnet-port ] ip-address [ via mgmt-name ]
```

```
ip host [ vrf vrf-name ] host-name [ telnet-port ] ip-address
```

```
no ip host [ oob ] host-name [ telnet-port ] ip-address [ via mgmt-name ]
```

```
no ip host [ vrf vrf-name ] host-name [ telnet-port ] ip-address
```

Parameter Description

oob: Configures out-of-band management.

vrf *vrf-name*: Configures a VRF instance.

host-name: Host name of a device.

telnet-port: Telnet port of a device. The value range is from 0 to 65535. The default value is 0.

ip-address: IP address of a device.

via *mgmt-name*: Specifies the outbound management interface of packets.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example configures the static mapping between host name `www.test.com` and IP address `192.168.5.243`.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip host www.test.com 192.168.5.243
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show hosts](#)
- [clear host](#)

1.5 ip name-server

Function

Run the **ip name-server** command to configure an IPv4/IPv6 address for a DNS server.

Run the **no** form of this command to remove this configuration.

No DNS server is configured by default.

Syntax

```
ip name-server [ oob ] { ipv4-address&<1-6> | ipv6-address&<1-6> } [ via mgmt-name ]
```

```
ip name-server [ vrf vrf-name ] { ipv4-address&<1-6> | ipv6-address&<1-6> }
```

```
no ip name-server [ oob ] { ipv4-address | ipv6-address } [ via mgmt-name ]
```

no ip name-server [vrf vrf-name] { ipv4-address | ipv6-address } [via mgmt-name]

Parameter	Description
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oob: Configures out-of-band management.

ipv4-address&<1-6>: IPv4 address of a DNS server. &<1-6> indicates that the IPv4 addresses of up to six DNS servers can be configured.

ipv6-address&<1-6>: IPv6 address of a DNS server. &<1-6> indicates that the IPv6 addresses of up to six DNS servers can be configured.

vrf vrf-name: Specifies a VRF instance.

via mgmt-name: Specifies the outbound management interface of packets when the **oob** parameter is set.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Dynamic domain name resolution can be performed only after a DNS server is configured.

This command is used to configure the IPv4/IPv6 addresses for DNS servers. Each time this command is run, the device will add one DNS server. When a domain name cannot be obtained from the first server, the device tries to send a DNS request to subsequent servers until it receives a correct reply.

The system supports up to six DNS servers. If the *ipv4-address* or *ipv6-address* parameter is specified when you delete a DNS server, only the specified server will be deleted. Otherwise, the IP addresses of all DNS servers will be deleted.

Examples

The following example sets the IPv4 address of a DNS server to 192.168.5.134 and the management interface to 0.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip name-server 192.168.5.134 via mgmt 0
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.6 ipv6 host

Function

Run the **ipv6 host** command to configure a static mapping between a host name and an IPv6 address.

Run the **no** form of this command to remove this configuration.

No static mapping between a host name and an IPv6 address is configured by default.

Syntax

```
ipv6 host [ oob ] host-name [ telnet-port ] ipv6-address [ via mgmt-name ]
```

```
ipv6 host [ vrf vrf-name ] host-name [ telnet-port ] ipv6-address
```

```
no ipv6 host [ oob ] host-name [ telnet-port ] ipv6-address [ via mgmt-name ]
```

```
no ipv6 host [ vrf vrf-name ] host-name [ telnet-port ] ipv6-address
```

Parameter Description

oob: Configures out-of-band management.

vrf *vrf-name*: Configures a VRF instance.

host-name: Host name of a device.

ipv6-address: IPv6 address of a device.

via *mgmt-name*: Specifies the outbound management interface of packets.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example configures the static mapping between host name `www.test6.com` and IPv6 address `2001:0DB8:700:20:1::12`.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 host www.test6.com 2001:0DB8:700:20:1::12
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show hosts](#)
- [clear host](#)

1.7 ip dns proxy cache

Function

Run the **ip dns proxy cache** command to enable the function of caching dynamic entries on the DNS proxy.

Run the **no** form of this command to disable this feature.

The function of caching dynamic entries on the DNS proxy is enabled by default.

Syntax

ip dns proxy cache

no ip dns proxy cache

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

When processing a request packet from the DNS client, the DNS proxy searches for the domain name-IP mapping in the local cache first. If the required domain name-IP mapping is found, the DNS proxy directly returns it to the client. If the required domain name-IP mapping is not found, the DNS resolver searches an external DNS server for the IP address mapped to the domain name and returns a reply packet to the client.

Examples

The following example disables the function of caching dynamic entries on the DNS proxy.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# no ip dns proxy cache
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [ip dns proxy enable](#)

1.8 ip dns proxy enable

Function

Run the **ip dns proxy enable** command to enable the DNS proxy function.

Run the **no** form of this command to disable this feature.

DNS proxy is disabled by default.

Syntax

ip dns proxy enable

no ip dns proxy enable

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

DNS proxy is generally deployed on the front-end egress gateway between a DNS server and a PC, and acts as a proxy of the DNS server to process users' DNS domain name resolution requests.

Examples

The following example disables the DNS proxy function.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# no ip dns proxy enable
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.9 ip dns proxy host

Function

Run the **ip dns proxy host** command to configure a static mapping between a host name and an IP address on the DNS proxy.

Run the **no** form of this command to remove this configuration.

No static mapping between a host name and an IP address is configured on the DNS proxy by default.

Syntax

```
ip dns proxy host host-name { ipv4-address | ipv6-address }  
no ip dns proxy host host-name { ipv4-address | ipv6-address }
```

Parameter Description

host-name: Host name of a device.

ipv4-address: IPv4 address of a device.

ipv6-address: IPv6 address of a device.

Command Modes

Global configuration mode

Usage Guidelines

N/A

Examples

The following example configures a static mapping between host name `www.test.com` and IP address `192.168.5.243` on the DNS proxy.

```
Hostname> enable  
Hostname# configure terminal  
Hostname(config)# ip dns proxy host www.test.com 192.168.5.243
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [clear dns proxy host](#)
- [show dns proxy hosts](#)

1.10 ip dns proxy nameserver

Function

Run the **ip dns proxy nameserver** command to configure the IP address of a DNS server on the DNS proxy.

Run the **no** form of this command to remove this configuration.

No DNS server is configured on the DNS proxy by default.

Syntax

```
ip dns proxy nameserver { ipv4-address | ipv6-address }
```

```
no ip dns proxy nameserver [ ipv4-address | ipv6-address ]
```

Parameter Description

ipv4-address: IPv4 address of a DNS server.

ipv6-address: IPv6 address of a DNS server.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Each time this command is run, the device will add one DNS server. When a domain name cannot be obtained from the first server, the device tries to send a DNS request to subsequent servers until it receives a correct reply.

The system supports up to six DNS servers. If the *ipv4-address* or *ipv6-address* parameter is specified when you delete a DNS server, only the specified server will be deleted. Otherwise, the IP addresses of all DNS servers will be deleted.

Examples

The following example sets the IPv4 address of a DNS server to 192.168.5.134 on the DNS proxy.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip dns proxy nameserver 192.168.5.134
```

The following example sets the IPv6 address of a DNS server to 2001::1 on the DNS proxy.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip dns proxy nameserver 2001::1
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.11 ip dns proxy port-range

Function

Run the **ip dns proxy port-range** command to configure the range of a port used for query in upper-level DNS servers.

Run the **no** form of this command to restore the default configuration.

The default port range is from 55000 to 58000.

Syntax

ip dns proxy port-range *port-min port-max*

no ip dns proxy port-range

Parameter Description

port-min: Minimum value of the port range. The value range is from 1025 to 65535. The default value is 55000.

port-max: Maximum value of the port range. The value range is from 1025 to 65535. The default value is 58000.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command can be used to adjust the range of a port used for query in upper-level DNS servers.

If the port range is too small, the concurrent processing performance of the device is affected. On the contrary, if the port range is too large, excessive flow table entry resources will be occupied and the egress device needs to adjust the flow table restriction synchronously.

Examples

The following example configures the range of a port used for query in the upper-level DNS servers to 30000 to 35000.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip dns proxy port-range 30000 35000
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.12 ip dns proxy ttl

Function

Run the **ip dns proxy ttl** command to configure the time to live (TTL) of the reply packet in response to a static entry.

Run the **no** form of this command to restore the default configuration.

The default TTL of the reply packet in response to a static entry is 3,600 seconds.

Syntax

```
ip dns proxy ttl ttl
```

```
no ip dns proxy ttl
```

Parameter Description

ttl: TTL of the reply packet in response to a static entry, in seconds. The value range is from 10 to 65535, and the default value is 3600.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example sets the TTL of the reply packet in response to a static entry to 10 seconds.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ip dns proxy ttl 10
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.13 show hosts

Function

Run the **show hosts** command to display the DNS configuration.

Syntax

```
show hosts [ vrf vrf-name | oob [ via mgmt-name ] ] [ host-name ]
```

Parameter Description

oob: Configures out-of-band management.

vrf *vrf-name*: Configures a VRF instance.

via *mgmt-name*: Specifies the outbound management interface of packets.

host-name: Specified domain name. If this parameter is not specified, all domain names will be displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the DNS configuration.

```
Hostname> enable
Hostname# show hosts
Name servers are:
192.168.5.134 static
Host                type           Address           TTL (sec)
switch              static         192.168.5.243    -
www.dnstest.com     dynamic        192.168.5.123    126
```

Table 1-1 Output Fields of the show hosts Command

Field	Description
Name servers	DNS servers.
Host	Domain name.

Field	Description
type	Resolution type. <ul style="list-style-type: none">● static indicates static resolution.● dynamic indicates dynamic resolution.
Address	IP address mapped to a domain name.
TTL	TTL of a domain name/IP entry.

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.14 show dns proxy hosts

Function

Run the **show dns proxy hosts** command to display the entries on the DNS proxy.

Syntax

```
show dns proxy hosts
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays all entries on the DNS proxy.

```
Hostname> enable
Hostname# show dns proxy hosts
proxy state: enable
Name servers are:
192.168.59.194
```



```

2.0.0.3
static host      max: 1024
static host      count: 1
cache domain     max: 5120
cache domain     count: 1
Host
TTL(sec)         Address
www.Hostname.net                               static
-               192.168.5.21
www.baidu.com                                       dynamic
109            163.177.151.110
163.177.151.109
    
```

Table 1-1 Output Fields of the show dns proxy hosts Command

Field	Description
proxy state	Functional status of a service.
Name servers	DNS servers.
static host max	Maximum number of supported static entries.
static host count	Number of static entries used.
cache domain max	Maximum number of dynamic entries.
cache domain count	Number of dynamic entries used.
Host	Domain name.
type	Resolution type. <ul style="list-style-type: none"> ● static indicates static resolution. ● dynamic indicates dynamic resolution.
Address	IP address mapped to a domain name.
TTL	TTL of a domain name/IP entry.

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.15 show dns proxy statistics

Function

Run the **show dns proxy statistics** command to display the DNS proxy packet statistics.

Syntax

```
show dns proxy statistics
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays DNS proxy packets statistics.

```
Hostname> enable
Hostname# show dns proxy statistics
Receive client request packet counts : 0
Send to client reply packet counts   : 0
Send to server request packet counts : 0
Receive server reply packet counts   : 0
```

Table 1-1 Output Fields of the **show dns proxy hosts** Command

Field	Description
Receive client request packet counts	Number of received request packets from the DNS client.
Send to client reply packet counts	Number of response packets sent to the DNS client.
Send to server request packet counts	Number of request packets sent to the DNS server.
Receive server reply packet counts	Number of received response packets from the DNS server.
Deal timeout packet counts	Number of timeout DNS request timeout packets.

Notifications

N/A

Platform Description

N/A

Related Commands

N/A