Configuring DNS

SYSTEM ADMINISTRATOR GUIDE

Contents

1 Overview

This document provides an overview of the Domain Name System (DNS) features supported by the SmartEdge router and describes the tasks used to configure, monitor, and administer DNS. It also provides DNS configuration examples.

This document applies to both the Ericsson SmartEdge® and SM family routers. However, the software that applies to the SM family of systems is a subset of the SmartEdge OS; some of the functionality described in this document may not apply to SM family routers.

For information specific to the SM family chassis, including line cards, refer to the SM family chassis documentation.

For specific information about the differences between the SmartEdge and SM family routers, refer to the Technical Product Description *SM Family of Systems* (part number 5/221 02-CRA 119 1170/1) in the **Product Overview** folder of this Customer Product Information library.

Note: When IP Version 6 (IPv6) addresses are not referenced or explicitly specified, the term, IP address, can refer generally to IP Version 4 (IPv4) addresses, IPv6 addresses, or IP addressing. In instances where IPv6 addresses are referenced or explicitly specified, the term, IP address, refers only to IPv4 addresses. For a description of IPv6 addressing and the types of IPv6 addresses, see RFC 3513, *Internet Protocol Version 6 (IPv6) Addressing Architecture*.

DNS maps hostnames to IP addresses. When a command refers to a hostname, the OS of the SmartEdge router consults the host table for mappings to IP addresses. If the information is not in the table, the OS generates a DNS query to resolve the hostname. DNS is enabled on a per-context basis, with one domain name allowed per context.

2 Configuration and Operations Tasks

Note: In this section, the command syntax in the task tables displays only the root command; for the complete command syntax, see *Command List*.

To configure DNS, perform the tasks described in the following sections:

2.1 Configure DNS

To configure DNS, perform the tasks described in Table 1; enter all commands in context configuration mode.

Table 1   Configure DNS

Task	Root Command	Notes
Specify a domain name (or alias) for the context.	*ip domain-name*	You can create up to six domain names per context.
Specify the IP address of a primary (and, optionally, secondary) DNS server with one of the following tasks:		For DNS resolution to function, there must be an IP route to the DNS server.
Specify IPv4 addresses.	*ip name-servers*	
Specify IPv6 addresses.	*ipv6 name-servers*	
Enable theSmartEdge router to use DNS resolution to look up hostname-to-IP address mappings.	*ip domain-lookup*	For DNS resolution to function, you must configure domain-name lookup.

2.2 Enable DNS to Establish Subscriber Sessions (Optional)

To enable subscriber sessions to be established using DNS, perform the task described in Table 2.

Table 2   Enable DNS to Establish Subscriber Sessions (Optional)

Task	Root Command	Notes
Configure the IP address of a primary or secondary DNS server that a subscriber should use.	*dns*	Enter this command in subscriber configuration mode.

2.3   Configure Static Hostname-to-IP Address Mappings (Optional)

In addition to having DNS perform dynamic resolution, you can configure static hostname-to-IP address mappings. To do so, perform the task described in Table 3; enter all commands in context configuration mode.

Table 3   Configure Static Hostname-to-IP Address Mappings

Task	Root Command	Notes
Create static hostname-to-IP address mappings in the host table with one of the following tasks:		The OS of the SmartEdge router always consults the host table prior to generating a DNS lookup query. You can create up to 64 static entries in the host table.
Create a mapping with an IPv4 address.	*ip host (context)*	
Create a mapping with an IPv6 address.	*ipv6 host*	

2.4   Operations Tasks

Note: In this section, the command syntax in the task tables displays only the root command.

To monitor and troubleshoot DNS features, perform the DNS operations tasks described in Table 4. Enter the `debug` command in exec mode; enter the `show` commands in any mode.

Table 4   DNS Operations Tasks

Task	Root Command
Enable the generation of DNS debug messages.	*debug ip dns*
Display all static hostname-to-IPv4 address mappings stored in the local host table for the current context.	*show ip host*
Display all static hostname-to-IPv6 address mappings stored in the local host table for the current context.	*show ipv6 host*

3   Configuration Examples

The following example configures the **redback.com** domain for the **local** context and configures a connection to a remote DNS server at IP address, **155.53.130.200**. The `ip domain-lookup` command enables DNS resolution:

```
[local]Redback(config)#context local

[local]Redback(config-ctx)#ip domain-lookup

[local]Redback(config-ctx)#ip domain-name redback.com

[local]Redback(config-ctx)#ip name-servers 155.53.130.200
```