



# ARP/ND User Guide

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# 1. Introduction

RBFS allows you to set the timer information for ARP and ND routes. The timer information specifies how frequently a device sends messages to its neighbor. RBFS provides a logical interface with which you can configure timers for neighbor router. These timers are essential for protocol such as ARP and ND.

RBFS supports timers for the following attributes:

## **Gratuitous ARP Interval**

The Gratuitous ARP is sent as a broadcast by a node to communicate its IP address to MAC address mapping on the network. The GARP timer enables you to specify the interval time based on which GARP can be communicated.

## **Neighbor Probe Interval**

RBFS allows you to coinfigure the neighbor probe interval for the specified interface. This attribute is used to ensure that the neighbor is available or not.

## **Router Advertisement Interval**

RBFS allows you to configure router advertisement interval. Router advertisement includes route information to show the network hosts that the router is operational. The router sends these messages periodically with a time range specified with minimum and maximum values. Router Advertisement Interval timer is applicable only to IPv6.

## **Neighbor Scan Interval**

It specifies the time interval for neighbor router scanning. It scans the ARP table of a neighbor router to determine which IP addresses are active.

## **ARP Throttle Interval**

ARP throttling is a method of rate limiting of ARP packets and it safeguards the router by limiting too many ARP requests triggered by incoming traffic. RBFS allows you to configure the time interval for ARP throttling.

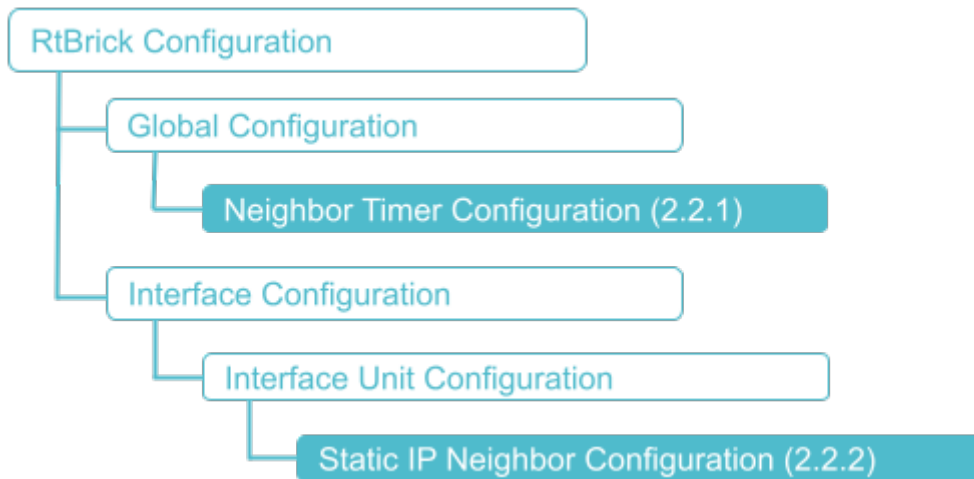
## **1.1. Supported Platforms**

Not all features are necessarily supported on each hardware platform. Refer to the *Platform Guide* for the features and the sub-features that are or are not supported by each platform.

## 2. Configuration

### 2.1. Configuration Hierarchy

The diagram illustrates the Neighbor Timer configuration hierarchy.



### 2.2. Configuration Syntax and Commands

#### 2.2.1. Neighbor Timer Configuration

The following sections describe the interface configuration syntax and commands.

##### Syntax:

**set global neighbor** <attribute> <value>

Attribute	Description
garp-interval	Gratuitous ARP interval. The value is in seconds. Range: 1 to 1000 seconds Default: 60
probe-interval	Neighbor probe interval. The value is in seconds. Range: 1 to 1000 seconds Default: 10
ra-interval	Router advertisement interval. The value is in seconds. Range: 1 to 1000 seconds Default: 10

Attribute	Description
scan interval	Neighbor scan interval. The value is in seconds. Range: 1 to 1000 seconds Default: 60
throttle-interval	ARP throttle interval. The value is in seconds. Range: 1 to 1000 seconds Default: 10

### Example: Neighbor timer Configuration

```
{
  "rtbrick-config:neighbor": {
    "garp-interval": 10,
    "probe-interval": 120,
    "scan-interval": 120,
    "throttle-interval": 120,
    "ra-interval": 120
  }
}
```

## 2.2.2. Static IP Neighbor Configuration

This section describes configuration options at static IP neighbor.

### Syntax:

**set interface** <interface-name> **unit** <unit-id> **neighbor** <attribute> <value>

Attribute	Description
<interface-name>	Name of the interface. Examples: ifp-0/0/1, hostif-0/0/1.
<unit-id>	Create a logical interface (also referred to as a sub-interface) under the physical interface.
IPv4/IPv6 <ip-address>	Neighbor IPv4 or IPv6 address.
MAC <mac-address>	Neighbor MAC address.

### Example: Static IP Neighbor Configuration

```
supervisor@rtbrick>LEAF01: cfg> show config
{
  "data": {
    "rtbrick-config:interface": [
      {
        "name": "ifp-0/1/5",
        "unit": [
          {
            "unit-id": 1,
            "neighbor": {
              "ipv4": [
                {
                  "address4": "11.1.1.2",
                  "mac": "11:11:11:11:11:11"
                }
              ]
            }
          ]
        ]
      }
    ]
  }
}
supervisor@rtbrick>LEAF01: cfg>
```

## 3. Operational Commands

### 3.1. Show Commands

#### 3.1.1. Neighbor Timer Show Commands

**Syntax:**

**show neighbor** <option>

Option	Description
-	Without any option, the commands displays the information for all neighbors.
instance <instance_name>	Displays summary of specified neighbor instance
<afi>	Displays neighbor summary for the specified address family

Example 1: Summary of neighbor

```
supervisor@rtbrick>LEAF01: op> show neighbor
Instance          MAC Address      Interface      IP Address
Dynamic  Entry Time
default          e4:ed:7a:8e:d5:9d  if1-0/0/5/1   192:1::3
true            Thu Feb 24 02:23:19
```

Example 2: Summary of neighbor instance

```
supervisor@rtbrick>LEAF01: op> show neighbor instance default
Instance          MAC Address      Interface      IP Address
Dynamic  Entry Time
default          7a:01:bf:60:03:02  memif-0/2/3/10
fe80::b:7801:bfff:fe60:30 true            Thu Feb 24 04:57:22
default          7a:01:bf:60:03:02  memif-0/2/3/20
fe80::15:7801:bfff:fe60:3 true            Thu Feb 24 04:57:22
```

Example 3: Summary of the neighbor for the specified address family

```
supervisor@rtbrick>LEAF01: op> show neighbor ipv4
<cr>
instance          Instance name
```



```

supervisor@rtbrick>LEAF01: op> show neighbor ipv6
Instance           MAC Address           Interface           IP Address
Dynamic  Entry Time
default           7a:01:bf:60:03:02    memif-0/2/3/10
fe80::b:7801:bfff:fe60:30 true    Thu Feb 24 04:57:22
default           7a:01:bf:60:03:02    memif-0/2/3/20
fe80::15:7801:bfff:fe60:3 true    Thu Feb 24 04:57:22

```

#### Example 4: Summary of the static IP neighbor

```

supervisor@rtbrick>LEAF01: op> show neighbor
Instance           MAC Address           Interface           IP Address
Dynamic  Entry Time
default           11:11:11:11:11:11    if1-0/1/5/1        11.1.1.2
true    Fri Feb 25 10:13:04

```

## 3.1.2. Neighbor Address Resolution

### Syntax:

**show address resolution** <request | response>

Option	Description
Request	Displays the summary of address resolution request
Response	Displays summary of address resolution response

#### Example 1: Summary of the neighbor address resolution request

```

supervisor@rtbrick>LEAF01: op> show address-resolution request
TableName: global.static.1.address.resolution.request
Next Hop           AFI           SAFI           Instance
192:1::3           ipv6          labeled-un    default

```

#### Example 2: Summary of the neighbor address resolution response

```

supervisor@rtbrick>LEAF01: op> show address-resolution response
TableName: global.static.1.address.resolution.response
IP Address           Covering Prefix           MAC Address
Interface
192:1::3             192:1::3/128             e4:ed:7a:8e:d5:9d
if1-0/0/5/1

```