

# MRF IP Auto-Configuration Failure

Virtual Multimedia Resource Function

Operating Instructions

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# 1 Overview

This instruction concerns alarm handling.

## 1.1 MRF IP Auto-Configuration Failure Alarm Description

The alarm is a primary alarm. The severity of the alarm is Major. The alarm is issued by the `MrfMediaInterface` MO.

The alarm is raised when IP auto-configuration of a media IP address in a VM fails, for example, if the DHCP client cannot obtain, renew, or rebind an IP address, or if the lease time of the IP address ends.

The possible alarm causes and fault locations are explained in [Table 1](#).

Table 1 Alarm Causes

| Alarm Cause                       | Description   | Fault Reason <sup>(1)</sup>                                | Fault Location                              | Impact  |
|-----------------------------------|---|--|---|---|
| DHCP server not responding        | Connectivity failure between DHCP server and client | DHCP Discover sent, and no accepted Offer received         | DHCP server or Network or Cloud environment | No user plane traffic is possible on the media interface. If all media interfaces are down, MTAS is instructed not to offer new sessions to the VM connected to the media interface while the problem persists. |
|                                   |   | DHCP IPV6 Solicit sent, and no accepted Advertise received |   |   |
|                                   |   | DHCP REQUEST sent, and no accepted ACK received            |   |   |
|                                   |   | DHCP IPV6 REQUEST sent, and no accepted ACK received       |   |   |
| Invalid response from DHCP server | No valid configuration answer from server           | DHCP ACK rejected  |   |   |



| Alarm Cause                                | Description  | Fault Reason <sup>(1)</sup>   | Fault Location | Impact |
|--|--|-------------------------------|----------------|--------|
|  |  | DHCP IPV6 Reply discarded     |                |        |
| IP address confirmation failed             | The server indicates that the client network address is incorrect or client IP address lease has expired | DHCP NAK received for REQUEST |                |        |
| Unsuccessful IP address lifetime extension | The server indicates that the client network address is incorrect or client IP address lease has expired | DHCP NAK in RENEW state       |                |        |
|  |  | DHCP NAK in REBIND state      |                |        |
|  | IP address lease has expired   | DHCP LEASE expired            |                |        |
|  |  | DHCP IPV6 LEASE expired       |                |        |

(1) Fault reason is described in the additionalText field of the alarm and it is used when analyzing the alarm.

The alarm is ceased in the following case:

- The DHCP client receives a valid IP address for a media interface.

The DHCP client is continuously trying to obtain IP addresses after the alarm is raised, therefore no manual actions are needed in the VM after the DHCP-related issues are solved.

The following is the consequence for the VM if the alarm is not solved:

- No user plane traffic is possible on the media interface.

DHCP client states are listed and explained in [Table 2](#).



Table 2 DHCP Client States

| DHCP Client State | Description   |
|-------------------|---|
| INIT              | Initialization state, the client starts requesting an IP address lease. Also, it is the state after failed lease or when lease ends.  |
| SELECTING         | The client is waiting to receive DHCP OFFER messages from one or more DHCP servers.   |
| REQUESTING        | The client is waiting for reply from the server to which it sent DHCP REQUEST.  |
| BOUND             | The client has a valid lease and is in normal operational state.  |
| RENEWING          | The client is trying to renew its lease. It regularly sends DHCP REQUEST messages with the server that gave it its current lease and waits for a reply.   |
| REBINDING         | The client has failed to renew its lease with the selected server, and now seeks a lease extension with any server. The client periodically sends DHCP REQUEST messages with no server specified until it receives a reply or the lease ends. |

The alarm attributes are listed and explained in [Table 3](#).

Table 3 Alarm Attributes

| Attribute Name          | Attribute Value  |
|-------------------------|--|
| Major Type              | 193  |
| Minor Type              | 5308426  |
| Managed Object Class    | MrfMediaInterface  |
| Managed Object Instance | ManagedElement=1,MediaResourceFunction=1,MrfResource=1,MrfInstance=<MrfInstanceId>,MrfMediaInterface=<MrfMediaInterfaceId> |
| Specific Problem        | MRF IP Auto-Configuration Failure  |
| Event Type              | communicationsAlarms (2)   |
| Probable Cause          | CommunicationsProtocolError (305)  |
| Additional Text         | DHCP Server <IP address>, <cause> <sup>(1)</sup> , State: <state> <sup>(2)</sup> ; uuid: <uuid> <sup>(3)</sup>             |



| Attribute Name     | Attribute Value |
|--------------------|-----------------|
| Perceived Severity | major (4)       |

- (1) <cause> is one of the fault reasons from [Table 1](#).  
(2) <state> is one of the states from [Table 2](#).  
(3) <uuid> is the identity of the Virtual Machine from which the alarm is issued.





## 2 Cease the MRF IP Auto-Configuration Failure Alarm

The following procedure describes how to cease an MRF IP Auto-Configuration Failure alarm.

### Prerequisites

You have logged into the node.

### Steps

1. Check from the cloud environment, or, if in use, from the external DHCP server, whether DHCP server is enabled for the instance. If the server is disabled, enable it.
2. Check the DHCP server configuration. One possible scenario is to run out of IP addresses in the subnet.
  - If only one VM has the active alarm, lock and restart the VM.
  - If all VMs have DHCP problem, restart the DHCP service in the cloud environment.
3. If the alarm does not cease, consult the next level of maintenance support. Further actions are outside the scope of this instruction.

### 2.1 Perform Concluding Routines

#### Steps

1. Make a report.
2. The job is completed.