

DNS, Query Failure Error

IPWorks

OPERATING INSTRUCTIONS

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DNS, Query Failure Error



1 Introduction

This instruction concerns alarm handling.

1.1 Alarm Description

The alarm is issued when DNS query error rate exceeds the given threshold (defined by attribute `thresholdHigh`).

Note: The DNS query is counted as successful only when the query result is "NOERROR" with "ANSWER" section, otherwise, the query is counted as DNS query failure, including NXDOMAIN, REFERRAL, NXRRSET and timeout.

The possible alarm causes and the corresponding fault reasons, fault locations, and impacts are described in Table 1.

Table 1 Alarm Causes

Alarm Cause	Description	Fault Reason	Fault Location	Impact	Solution
Provisioning error	Query is not permitted or other configuration error.	DNS cannot be queried; or there is DNS provisioning error on the zone, view, and so on.	DNS server	DNS queries fail	See Section 2.2 on page 3
Network issue	DNS server cannot get response in given time interval.	Forwarding time-out	Network connection		See Section 2.3 on page 3
DNS server internal failure	The name server encountered an internal failure while processing this request.	Abnormal query messages are received, or DNS works abnormally	DNS server		See Section 2.4 on page 4

Note: An alarm can appear as a result of the maintenance activity.

The alarm attributes are listed and explained in Table 2.



Table 2 Alarm Attributes

Attribute Name	Attribute Value
Major Type	193
Minor Type	851972
Managed Object Class	ipworksDns
Source	ManagedElement=<Node Name>,SystemFunctions=1,Pm=1,PmJob=<PMJob name, the default PMJob is DnsQueryDefaultJob>, MeasurementReader=mr_1:<hostname>
Specific Problem	DNS, Query Failure Error
Event Type	qualityOfServiceAlarm(11)
Probable Cause	x733ThresholdCrossed(351)
Additional Text	The alarm is raised when query failures rate exceeds the threshold in the given time interval (both defined by the related PMJob).;uuid:<Product_UUID> ⁽¹⁾
Perceived Severity	Warning

(1) <Product_UUID> is the universally unique identifier (UUID) of machine that generates the alarm. The value can be fetched from `/sys/devices/virtual/dmi/id/product_uuid` on the PL node.

1.2 Prerequisites

This section provides information on the documents, tools, and conditions that apply to the procedure.

1.2.1 Documents

Before starting this procedure, ensure that you have read the following documents:

- System Safety Information
- Personal Health and Safety Information
- Fault Management

1.2.2 Tools

No tools are required.



1.2.3 Conditions

No conditions.

2 Procedure

This section describes the procedure to follow when this alarm is received.

2.1 Analyzing the Alarm

Do the following at the maintenance center:

1. Check DNS provisioning, see Section 2.2 on page 3.
2. Solve Network issues, see Section 2.3 on page 3.
3. Solve DNS server internal failure, see Section 2.4 on page 4

2.2 Checking DNS Provisioning

To clear the alarm, do the following:

1. Make sure that the DNS server allows to be queried. For example:

```
# ipwcli
IPWorks> select dnserver exdns1
Selected 1 object(s).
IPWorks> list -field=option
[DnsServer exdns1]
option: allow-query { any;}
```

2. Make sure that DNS server provisioning is correct. If there are provisioning changes, update the DNS server.

```
# ipwcli
IPWorks> select <DNS Server Name>
IPWorks> list
IPWorks> update dnserver <DNS Server Name>
```

3. Confirm that the alarm has ceased. If the alarm remains, consult the next level of maintenance support. Further actions are outside the scope of this instruction.



2.3 Solving Network Issues

To clear the alarm, do the following:

1. Solve the networks and other related issues.
2. Confirm that the alarm has ceased. If the alarm remains, consult the next level of maintenance support. Further actions are outside the scope of this instruction.

2.4 Solving DNS Server Internal Failure

To clear the alarm, do the following:

1. Obtain the error code reported by PM job of `DnsQueryStatisticsGroup` that monitors all the failed scenarios.
2. Consult the next level of maintenance support. Further actions are outside the scope of this instruction.