

Diameter AAA, Server Lost Connections of DB IPWorks

OPERATING INSTRUCTIONS

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1 Introduction

This instruction concerns alarm handling.

1.1 Alarm Description

The alarm is issued when the connections between AAA server and MySQL NDB clusters are down.

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
AAA configuration error occurs.	The alarm is raised because of the incorrect configuration of AAA.	The attributes <code>ndbConnectString</code> in the <code>MO IpworksDiameterAAA</code> are configured incorrectly.	AAA server	AAA server cannot provide service.	See Section 2.1 on page 3
NDB cluster is under abnormal condition.	All Management Nodes or Data Nodes are down.	All the NDB connections are down.	NDB cluster		See Section 2.2 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	864257
Managed Object Class	<code>IpworksDiameterAAA</code>
Source	<code>ManagedElement=<Node Name>, SystemFunctions=1, Fm=1, FmAlarmModel=ipworksDiameterAAA, FmAlarmType=ipworksDiameterAAAConnectionToDBError</code>



Attribute Name	Attribute Value
Specific Problem	Diameter AAA, Server Lost Connections of DB
Event Type	communicationsAlarm(2)
Probable Cause	x733CommunicationsSubsystemFailure(306)
Additional Text	All the NDB connections are down. Diameter AAA requests that trigger NDB queries will fail with SERVFAIL response.;uuid:<Product_UUID> ⁽¹⁾
Perceived Severity	Major

(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 Prerequisite

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 the following document has been read:

— Fault Management

1.2.2 Tools

Not available

1.2.3 Conditions

Not applicable.

1.3 Related Information

Trademark information, typographic conventions, and definition and explanation of abbreviations and terminology can be found in the following documents:

- Trademark Information
- Typographic Conventions
- Glossary of Terms and Acronyms



2 Procedure

This section describes the procedure to follow to clear this alarm.

2.1 Configuring AAA server

To clear the alarm, do the following:

1. Log on to the ECLI interface.

```
# ssh <username>@<OAM IP Address> -t -s cli
```

2. Check the configuration of MySQLInfo.

```
>ManagedElement=<Node Name>,IpworksFunction=1,IpworksCommonRoot=1,DataBaseInfo=1,MySQLInfo=1
```

```
(MySQLInfo=1)>show -v -r
```

For example:

```
MySQLInfo=1
mysqlInfoId="1" <default>
ndbConnectString <default>
"SC-2:1186"
"SC-1:1186"
SQLNodeInfo=1
host="SC-1" <default>
password=[] <empty>
port=3307 <default>
sqlNodeInfoId="1" <default>
user="root" <default>
SQLNodeInfo=2
host="SC-2"
password=[] <empty>
port=3307 <default>
sqlNodeInfoId="2"
user="root" <default>
```

3. Check the following configuration parameters of MySQL:

The configuration files are saved at SC-X: /etc/ipworks/mysql/confs.

File Name	Parameter
ipworks_datanode_my.conf	ndb-connectstring



File Name	Parameter
ipworks_mgm.conf	HostName
	PortNumber
ipworks_sqlnode.conf	ndb-connectstring
	port

Verify whether the configuration shown in Step 2 match with the configuration in this step. If not, continue to proceed with Step 4.

4. Configure the MO MySQLInfo.

```
>ManagedElement=<Node Name>,IpworksFunction=1,IpworksCommonRoot=1,DataBaseInfo=1,MySQLInfo=1
```

```
(MySQLInfo=1)>configure
```

```
(config-MySQLInfo=1)>ndbConnectString=["SC-1:1186","SC-2:1186"]
```

```
(config-MySQLInfo=1)>commit
```

```
(config-MySQLInfo=1)>exit
```

5. Restart the AAA service on Payload (PL) node to make the change take effect.

```
PL-X:~ # /etc/init.d/ipworks.aaa stop
```

```
PL-X:~ # /etc/init.d/ipworks.aaa start
```

6. If this alarm still exists, consult the next level of maintenance support. Further actions are outside the scope of this instruction.

2.2 Starting Management Node and Data Node

To clear the alarm, do the following:

1. Log on to the SC-1.

```
# ssh <Username>@<SC-1 IP Address>
```

2. Check NDB status:

```
SC-1:~ # ndb_mgm
```

```
-- NDB Cluster -- Management Client --
```

```
ndb_mgm> show
```

```
Connected to Management Server at: localhost:1186
```

```
Cluster Configuration
```

```
-----
```

```
[ndbd(NDB)]      2 node(s)
```

```
id=27   @169.254.100.1  (mysql-5.6.31 ndb-7.4.12, Nodegroup: 0, *)
```

```
id=28   @169.254.100.2  (mysql-5.6.31 ndb-7.4.12, Nodegroup: 0)
```




```
[ndb_mgmd(MGM)] 2 node(s)
id=1    @169.254.100.1 (mysql-5.6.31 ndb-7.4.12)
id=2    @169.254.100.2 (mysql-5.6.31 ndb-7.4.12)

[mysqld(API)] 24 node(s)
id=3    @169.254.100.1 (mysql-5.6.31 ndb-7.4.12)
id=4    @169.254.100.2 (mysql-5.6.31 ndb-7.4.12)
id=5    @169.254.100.3 (mysql-5.6.31 ndb-7.4.12)
id=6 (not connected, accepting connect from any host)
id=7 (not connected, accepting connect from any host)
id=8 (not connected, accepting connect from any host)
id=9 (not connected, accepting connect from any host)
id=10 (not connected, accepting connect from any host)
id=11 (not connected, accepting connect from any host)
id=12 (not connected, accepting connect from any host)
id=13 (not connected, accepting connect from any host)
id=14 (not connected, accepting connect from any host)
id=15 (not connected, accepting connect from any host)
id=16 (not connected, accepting connect from any host)
id=17 (not connected, accepting connect from any host)
id=18 (not connected, accepting connect from any host)
id=19 (not connected, accepting connect from any host)
id=20 (not connected, accepting connect from any host)
id=21 (not connected, accepting connect from any host)
id=22 (not connected, accepting connect from any host)
id=23 (not connected, accepting connect from any host)
id=24 (not connected, accepting connect from any host)
id=25 (not connected, accepting connect from any host)
id=26 (not connected, accepting connect from any host)

ndb_mgm>
```

Above output is expected result, if result indicates that certain nodes are not started. Continue to proceed with Step 3.

3. Start the Management Node, Data Node, and SQL Node:

```
SC-1:~ # /etc/init.d/ipworks.mysql start-mgmd
```

```
SC-1:~ # /etc/init.d/ipworks.mysql start-ndbd
```

```
SC-1:~ # /etc/init.d/ipworks.mysql start-sqlnode
```

For more information on how to manage MySQL NDB Cluster, refer to [Configure MySQL NDB Cluster](#).

Log on to the SC-2, then start the Management Node , Data Node and SQL Node. And ensure the NDB status is identical to the output of Step 2.

If your all mysql nodes is down, you can start all nodes with one command :



```
SC-X:~ # /etc/init.d/ipworks.mysql start-ndbcluster
```

4. Start AAA server on PL:

```
PL-X:~ # /etc/init.d/ipworks.aaa start
```

Starting the AAA Serve

Also, you can restart AAA server on SC, for example:

```
SC-X:~ # ipw-ctr restart aaa_diameter PL-3
```

```
SC-X:~ # ipw-ctr restart aaa_diameter PL-4
```

5. 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.



Reference List

Ericsson Documents

- [1] Trademark Information
- [2] Typographic Conventions
- [3] Glossary of Terms and Acronyms
- [4] Fault Management
- [5] Configure MySQL NDB Cluster