

vDicos, Diameter Link Failure

OPERATING INSTRUCTIONS

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1 Alarm Description

The alarm is issued when a Diameter connection has failed.

Table 1 vDicos, Diameter Link Failure Alarm Causes

Alarm Cause	Description	Fault Reason	Fault Location	Impact
A Diameter connection has failed.	Format error of Capabilities-Exchange-Request (CER)/Capabilities Exchange Answer (CEA) messages	The received message has not been coded according to the diameter standard for coding parameters	Examine the log in /opt/cdclsv/storage/log/lpmsv to determine fault reason	Missing connection between one or more Diameter peer nodes, which can decrease the throughput of messages between Diameter applications
		One or more Attribute-Value Pairs (AVPs) are missing		
		A vendor-defined mandatory AVP is received and that AVP is not defined in the receiving node		
	Configuration fault	The security configuration is not the same on both sides	Software configuration	
		An application is not installed on both sides		
		The number of connections is not equal on both sides		
	Link inactivity	A connection to a Diameter peer is broken because of link inactivity without response to a watchdog message	Network interface	
	IP network failure	IP network failure	IP network	
		Socket failure	Socket	
		Malformed message	Network	
	System error	Internal	Software	
	Connection failure	Network configuration fault	Misconfigured IP addresses or port numbers	
		Temporary fault	Any of the Diameter peer nodes	



Note: The alarm is cleared automatically in the following situations:

- Related peer node is disabled

When a peer node is disabled, all vDicos Diameter Link Failure alarms on connections related to this peer node are cleared and a new vDicos, Diameter Peer Node Disabled alarm is raised.

- Own node is disabled

When the own node is disabled, alarms for connections (and peer nodes) related to the own node are cleared and a new vDicos, Diameter Own Node Disabled alarm is raised for the own node.

- A Diameter link is disabled

When a Diameter link for this connection is disabled, the alarm is cleared and a new vDicos, Diameter Link Disabled alarm is raised for the connection.

2 Procedure

2.1 Handle Alarm vDicos, Diameter Link Failure

Prerequisites

- This instruction references the following documents:
 - *Data Collection Guideline*
 - *vDicos, Diameter Link Disabled*
 - *vDicos, Diameter Own Node Disabled*
 - *vDicos, Diameter Peer Node Disabled*
- No tools are required.
- The following conditions must apply:
 - The alarm is raised.
 - An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress.

Steps



1. Check the `additionalText` attribute of the alarm.
2. Select action according to the attribute text:
 - If `Format error of CER/CEA messages`, proceed with Section 2.2 Handle Reason Format Error of CER/CEA Messages on page 3.
 - If `Configuration fault`, proceed with Section 2.3 Handle Reason Configuration Fault on page 6.
 - If `Link inactivity, IP network failure, or Connection failure`, proceed with Section 2.4 Handle Reason Link Inactivity, IP Network Failure, or Connection Failure on page 6.
 - If `System error`, proceed with Section 2.5 Handle Reason System Error on page 8.

2.2 Handle Reason Format Error of CER/CEA Messages

Steps

1. Check the status of the links to the peer indicated by the alarm, for example:

```
>dn ManagedElement=NODE06ST,XYZFunction=xyz,DIA-CFG-App
lication=DIA,DIA-CFG-StackContainer=abc,DIA-CFG-PeerNo
deContainer=abc,DIA-CFG-NeighbourNode=node12.ericsson
n.com\23abc
```

```
(DIA-CFG-NeighbourNode=node12.ericsson.com\23abc) >show-
table -m DIA-CFG-Conn -p connId,linkStatus
```

The following is an example output:

```
=====
| connId                               | linkStatus |
=====
| abc\23node12....com\23conn1         | Down      |
| abc\23node12....com\23conn2         | Up        |
=====
```

2. Is at least one of the connections established for the peer node?

Yes: Continue with the next step.

No: Proceed with Step 9.

3. Navigate to the *DIA-CFG-Conn* Managed Object (MO) with link status Down, for example:

```
>dn ManagedElement=NODE06ST,XYZFunction=xyz,DIA-CFG-App
lication=DIA,DIA-CFG-StackContainer=abc,DIA-CFG-PeerNod
```



```
eContainer=abc,DIA-CFG-NeighbourNode=node12.ericsson.com\23abc,DIA-CFG-Conn=abc\23node12.ericsson.com\conn1
```

4. Disable and re-enable the connection:

```
(DIA-CFG-Conn=abc\23node12.ericsson.com\conn1)>configure
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1)  
>enabled=false
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1)  
>commit -s
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1)>enabled=true
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1)  
>commit
```

5. Verify the setting:

```
(DIA-CFG-Conn=abc\23node12.ericsson.com\conn1)>show  
enabled
```

```
enabled=true
```

6. Navigate up one step to the peer node:

```
(DIA-CFG-Conn=abc\23node12.ericsson.com\conn1)>up
```

7. Check the status of the links again, for example:

```
(DIA-CFG-NeighbourNode=node12.ericsson.com\23abc)>show-  
table -m DIA-CFG-Conn -p connId,linkStatus
```

The following is an example output:

```
=====
| connId                               | linkStatus |
=====
| abc\23node12....com\23conn1         | Up         |
| abc\23node12....com\23conn2         | Up         |
=====
```

8. Are there additional connections with link status Down?

Yes: Proceed with Step 3.

No: Proceed with Step 11.

9. Disable and re-enable the peer node, for example:



```
(DIA-CFG-NeighbourNode=node12.ericsson.com\23abc) >con
figure

(config-DIA-CFG-NeighbourNode=node12.ericsson.com\23abc
) >enabled=false

(config-DIA-CFG-NeighbourNode=node12.ericsson.com\23abc
) >commit -s

(config-DIA-CFG-NeighbourNode=node12.ericsson.com\23ab
c) >enabled=true

(config-DIA-CFG-NeighbourNode=node12.ericsson.com\23
abc) >commit
```

10. Verify the setting:

```
(DIA-CFG-NeighbourNode=node12.ericsson.com\23abc) >show
enabled

enabled=true
```

11. Check the link status of the connections:

```
(DIA-CFG-NeighbourNode=node12.ericsson.com\23abc) >show-
table -m DIA-CFG-Conn -p connId,linkStatus
```

The following is an example output:

```
=====
| connId                      | linkStatus |
=====
| abc\23node12...com\23conn1 | Up         |
| abc\23node12...com\23conn2 | Up         |
=====
```

12. Is the connection established?

Yes: Continue with the next step.

No: Proceed with Step 14.

13. Is the alarm cleared?

Yes: Proceed with Step 16.

No: Continue with the next step.

14. Perform data collection, refer to *Data Collection Guideline*.

15. Consult the next level of maintenance support. Further actions are outside the scope of this instruction.



16. Job is completed.

2.3 Handle Reason Configuration Fault

Steps

1. Check the value of attribute `blockReason` of the *DIA-CFG-Conn* MO indicated by the alarm, for example:

```
>dn ManagedElement=NODE06ST,XYZFunction=xyz,DIA-CFG-App  
lication=DIA,DIA-CFG-StackContainer=abc,DIA-CFG-PeerNod  
eContainer=abc,DIA-CFG-NeighbourNode=node12.ericsson.co  
m\23abc,DIA-CFG-Conn=abc\23node12.ericsson.com\conn1
```

```
(DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >show  
blockReason
```

The following is an example output:

```
blockReason=3007(application is unsupported)
```

Note: Possible reasons are 3007(application is unsupported), 5010(there is no common application), 3010(the peer is unknown), or 5012(not enough resources defined).

2. Contact the relevant organization (deployment organization or network administrator) and provide the result code.
3. Job is completed.

2.4 Handle Reason Link Inactivity, IP Network Failure, or Connection Failure

Steps

1. Check the link status of the *DIA-CFG-Conn* MO indicated by the alarm, for example:

```
>dn ManagedElement=NODE06ST,XYZFunction=xyz,DIA-CFG-App  
lication=DIA,DIA-CFG-StackContainer=abc,DIA-CFG-PeerNod  
eContainer=abc,DIA-CFG-NeighbourNode=node12.ericsson.co  
m\23abc,DIA-CFG-Conn=abc\23node12.ericsson.com\conn1
```

```
(DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >show  
linkStatus
```

The following is an example output:

```
linkStatus=Down
```

2. Is the connection established?



Yes: Proceed with Step 8.

No: Continue with the next step.

3. Disable and re-enable the connection:

```
(DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >configure
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >enabled=false
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >commit -s
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >enabled=true
```

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >commit
```

4. Verify the setting:

```
(config-DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >show enabled
```

```
enabled=true
```

5. Wait for automatic reconnection.

6. Check the link status:

```
(DIA-CFG-Conn=abc\23node12.ericsson.com\conn1) >show linkStatus
```

The following is an example output:

```
linkStatus=Up
```

7. Is the connection established?

Yes: Continue with the next step.

No: Proceed with Step 9.

8. Is the alarm cleared?

Yes: Proceed with Step 14.

No: Proceed with Step 12.

9. Use tools `ping` and `traceroute` to check the connection to the peer node.



Can the peer be reached within 10 seconds?

Yes: Proceed with Step 12.

No: Continue with the next step.

10. Contact the network administrator about a possible network fault.
11. Proceed with Step 14.
12. Perform data collection, refer to *Data Collection Guideline*.
13. Consult the next level of maintenance support. Further actions are outside the scope of this instruction.
14. Job is completed.

2.5 Handle Reason System Error

Steps

1. Perform data collection, refer to *Data Collection Guideline*.
2. Consult the next level of maintenance support. Further actions are outside the scope of this instruction.
3. Job is completed.