

CSCF Credit Control Answers Indicate Protocol Errors

Call Session Control Function

OPERATING INSTRUCTIONS

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1 Introduction

This instruction concerns alarm handling.

1.1 Alarm Description

The threshold alarm `CSCF Credit Control Answers Indicate Protocol Errors` is issued when there are problems with Credit Control charging Requests (CCR) sent from the Call Session Control Function (CSCF) to the charging system.

Triggering happens when the number of Credit Control Answers (CCA) with protocol errors (code 3xxx) received through Diameter has reached or exceeded its corresponding threshold value.

The alarm is associated to the Performance Management counter `cscfCCAProtocolErrors`.

The alarm is raised when the number of `cscfCCAProtocolErrors` has reached or exceeded its configured `thresholdHigh` within the time period configured by `thresholdRateOfVariation` and `granularityPeriod`.

The alarm is automatically ceased when it reaches or goes below the configured `thresholdLow` value.

The default values related to this alarm are: `thresholdRateOfVariation=PER_GP`, `granularityPeriod=FIVE_MIN`, `thresholdHigh=2`, and `thresholdLow=0`. This means that when the counter value is 2 or higher, the alarm is raised when the granularity period is ended. The alarm is ceased when the counter `cscfCCAProtocolErrors` has reached a value of 0 at the end of a granularity period.

Note: The thresholds for raising and ceasing this alarm are configurable. The default distinguished name for the thresholds is `ManagedElement=<node_name>`, `SystemFunctions=1`, `Pm=1`, `PmJob=CscfChargingStatisticsThreshold`, `MeasurementReader=cscfCCAProtocolErrorsMeasReader`, `PmThresholdMonitoring=cscfCCAProtocolErrors`.

It is not possible to change threshold values once they have been set. To change a threshold, first the `PmThresholdMonitoring` instance must be deleted and recreated with required `thresholdHigh` and `thresholdLow`.

For more information, refer to *Performance Management*.

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
The PM counter <code>cscfCCAProtocolErrors</code> has reached or exceeded its configured upper threshold value.	The number of received CCAs with Result-Code 3xxx (protocol errors) for sent CCRs has reached or exceeded the configured threshold.	Peer entity problems to interpret or manage CCR messages.	Peer entity Charging Server or protocol compatibility problems between the CSCF and the Charging Server.	Sessions receiving these error codes from the charging server will be terminated.

Note: An alarm can appear as a result of 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	6684686
Managed Object Class	MeasurementReader
Managed Object Instance	ManagedElement=<node_name>, SystemFunctions=1, Pm=1, PmJob=CscfChargingStatisticsThreshold, MeasurementReader=cscfCCAProtocolErrorsMeasReader
Specific Problem	CSCF Credit Control Answers Indicate Protocol Errors
Event Type	communication (2)
Probable Cause	x733ThresholdCrossed (351)
Additional Text	<code>cscfCCAProtocolErrors</code> , check connection to the charging system, possibly caused by configuration problem.
Perceived Severity	major (4)



1.2 Prerequisites

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

1.2.1 Documents

This instruction references the following documents:

- *Performance Management*
- [RFC 3588 Diameter Base Protocol](#)
- *Managed Object Model (MOM)*

1.2.2 Tools

Before starting this procedure, ensure that the following tool is available:

- A Diameter protocol sniffer, refer to [RFC 3588 Diameter Base Protocol](#)

1.2.3 Conditions

No conditions.





2 Procedure

Note: If the reason for the alarm has disappeared after the granularity period, the alarm automatically ceases.

Do the following:

1. Log on and check that the System Controller (SC) is the primary processor:

```
cat/proc/drdb
```

```
Primary printout: 0:cs:Connected st:Primary/Secondary  
id:Consistent
```

or

```
Secondary printout: 0:cs:Connected st:Secondary/Primary  
id:Consistent
```

2. Check the log file and **grep** on error 3xxx (protocols errors):

```
grep "Result-Code= [30]" /storage/no-backup/cdclsv/log  
/lpmsv/*
```

3. Log off the SC.
4. Verify that the alarm is matching with the errors in the log.
5. Investigate why communication with the Charging Server node fails.
6. If the cause is that the alarm threshold is set too low, adjust the alarm threshold.
7. 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.
8. Job is completed.