

CSCF Credit Control Answers Indicate Protocol Errors

Call Session Control Function

OPERATING INSTRUCTIONS

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1 Alarm Description

The threshold alarm `CSCF Credit Control Answers Indicate Protocol Errors` is raised 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](#).



Table 1 CSCF Credit Control Answers Indicate Protocol Errors 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 compatibilities problems between the CSCF and the Charging Server. | Sessions receiving these error codes from the Charging Server are terminated. |

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

Table 2 CSCF Credit Control Answers Indicate Protocol Errors 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 | cscfCCAProtocolErrors, check connection to the charging system, possibly caused by configuration problem. |
| Perceived Severity | major (4) |



2 Procedure

2.1 Handle Alarm CSCF Credit Control Answers Indicate Protocol Errors

Prerequisites

- This instruction references the following documents:
 - Performance Management
 - Managed Object Model (MOM)
- Before starting this procedure, ensure that the following tool is available:
 - A Diameter protocol sniffer, refer to [RFC 3588 Diameter Base Protocol](#).
- The following condition must apply:
 - The alarm is raised.

Steps

Note: If the reason for the alarm has disappeared after the Granularity Period, the alarm automatically ceases.

1. Log on to the System Controller (SC).
2. Make sure that the SC is the primary processor:

```
cat/proc/drdb
```

The following is the expected output when the SC is the primary processor:

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

The following is the expected output when the SC is the secondary processor:

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

3. Check the log file for error 3xxx (protocols errors):

```
grep "Result-Code= [30]" /storage/no-backup/cdclsv/log/lpmv/*
```
4. Log off from the SC.
5. Make sure that the alarm is matching with the errors in the log.
6. Find the cause why the communication with the Charging Server node fails.
7. Is that the alarm threshold is set too low?



Yes: Adjust the alarm threshold and then continue with the next step.

No: Continue with the next step.

8. Has the alarm ceased?

Yes: Proceed with Step 10.

No: Continue with the next step.

9. If the alarm is not ceased, consult the next level of maintenance support.

Further actions are outside the scope of this instruction.

10. Job is completed.