

# CSCF Charging Answers Indicate Protocol Errors

Call Session Control Function

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## OPERATING INSTRUCTIONS

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# 1 Introduction

This instruction concerns alarm handling.

## 1.1 Alarm Description

The threshold alarm `CSCF Charging Answers Indicate Protocol Errors` is issued when there are problems with Accounting Requests (ACRs) sent from the CSCF to the charging system.

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

The alarm is raised when the number of Accounting-Answer (ACA) with protocol errors (code 3xxx) received through Diameter, has reached, or exceeded its corresponding `thresholdHigh` within the time period configured by `thresholdRateOfVariation` and `granularityPeriod`.

The alarm is automatically ceased when it reaches or goes below the `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 `cscfACAProtocolErrors` 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=cscfACAProtocolErrorsMeasReader`, `PmThresholdMonitoring= cscfACAProtocolErrors`. 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>cscfACAProtocolErrors</code> has reached or exceeded its configured upper threshold value.	The number of received ACA with Result-Code 3xxx (protocol errors) for sent ACR has reached or exceeded the configured threshold.	Peer entity problems to interpret or manage ACR messages.	Peer entity Charging Data Function (CDF) or protocol compatibility problems between CSCF and CDF.	Charging information is buffered on persistent media until communication to CDF is re-established.

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

The following are the consequences for the node if the alarm is not solved:

- There is a limited amount of memory reserved (in the range of a few days) to store the charging information temporarily. When this buffer is full, subsequent charging information is lost, and the alarm `CSCF Charging Backup File System Unavailable` is also raised.

The alarm attributes are listed and explained in Table 2.

Table 2 Alarm Attributes

Attribute Name	Attribute Value
Major Type	193
Minor Type	6684679
Managed Object Class	MeasurementReader
Managed Object Instance	ManagedElement=<node_name>, SystemFunctions=1, Pm=1, PmJob=CscfChargingStatisticsThreshold, MeasurementReader=cscfACAProtocolErrorsMeasReader
Specific Problem	CSCF Charging Answers Indicate Protocol Errors
Event Type	communication (2)
Probable Cause	x733ThresholdCrossed (351)
Additional Text	<code>cscfACAProtocolErrors</code> , 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 document:

- *Managed Object Model (MOM)*
- *CSCF Configuration Management*

### 1.2.2 Tools

Before starting this procedure, ensure that the following tools are 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 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 matches the errors in the log.
5. Investigate why communication with the Charging Data Function 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.