

# Storage Engine, Memory Usage Too High In DS, Warning Threshold Reached

Ericsson Centralized User Database

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## OPERATING INSTRUCTION

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# 1 Introduction

This instruction concerns alarm handling for the *Storage Engine, Memory Usage Too High In DS, Warning Threshold Reached* alarm.

## 1.1 Alarm Description

The alarm is issued in the following situations:

- The memory use of a Data Store (DS) cluster reaches the level configured for the *Warning* threshold, and later it is cleared when the memory use keeps increasing, and reaches the level configured for the *Full* threshold. In this case, another alarm is issued: refer to *Storage Engine, Memory Usage Too High In DS, Full Threshold Reached*, Reference [1] for more information.
- The memory use of the DS cluster decreases below the level configured for the *Full* threshold. Later, once the memory use decreases below the *Warning* level, the alarm is cleared.

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 memory use of the DS cluster reached the <i>Warning</i> threshold level.	The amount of subscriber data stored in the DS results in a level of memory use which reaches the level configured for the <i>Warning</i> threshold.	The DS cluster contains too much subscriber data.	Affected DS cluster.	The memory use of the affected DS cluster may reach the <i>Full</i> threshold, resulting in the rejection of newly provisioned subscriber data on that DS cluster.

The alarm attributes are listed and explained in Table 2:

*Table 2 Alarm Attributes*

Attribute Name	Attribute Value
Auto Cease	Yes
Module	STORAGE-ENGINE
Error Code	8
Timestamp First	Date and time when the alarm was raised for the first time.
Repeated Counter	Number which indicates how many times the alarm was raised.
Timestamp Last	Date and time of the most recent alarm raise.



Attribute Name	Attribute Value
Resource ID	.1.3.6.1.4.1.193.169.1.2.8.<DG>
Alarm Model Description	Memory usage at Warning level, Storage Engine.
Alarm Active Description	Storage Engine (DS-group #<DG>): memory usage at Warning level.
ITU Alarm Event Type	processingErrorAlarm (4)
ITU Alarm Probable Cause	storageCapacityProblem (151)
ITU Alarm Perceived Severity	(6) - Warning
Originating Source IP	Node IP where the alarm was raised.
Sequence Number	Number which indicates the order in which alarms were raised.

In Table 2, the indicated variables are as follows:

- <DG> is the Data Store Unit Group (DSG) the DS cluster belongs to.

Refer to the following documents for more information:

- For further information about the `Warning` threshold level, refer to *CUDB Node Configuration Data Model Description*, Reference [2].
- For further information about the `Full` threshold level, refer to the section of the `cudbReallocate` command in *CUDB Node Commands and Parameters*, Reference [3].
- For further information about attribute descriptions, refer to *CUDB Node Fault Management Configuration Guide*, Reference [4].

## 1.2 Prerequisites

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 you have read the following documents:

- The section on the `cudbDsgProvisioningManage` and `cudbReallocate` commands in *CUDB Node Commands and Parameters*, Reference [3].
- *CUDB Node Fault Management Configuration Guide*, Reference [4], regarding alarm configuration.



- The “Running Defragmentation” section of *CUDB System Administrator Guide*, Reference [5].
- *System Safety Information*, Reference [7].
- *Personal Health and Safety Information*, Reference [8].

### **1.2.2 Tools**

Not applicable.

### **1.2.3 Conditions**

Not applicable.



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## 2 Procedure

In case the alarm is raised, do the following:

1. Perform a defragmentation in the affected DSG. Refer to *CUDB System Administrator Guide*, Reference [5] for more information.
2. Check if the alarm is cleared. If not, continue with the below steps.
3. Use the `cudbDsgProvisioningManage` command with the `--disable` option to prevent the newly distributed data from being added to the referred DSG. For more information, refer to *CUDB Node Commands and Parameters*, Reference [3].
4. Move the distributed data out of the referred DSG to decrease memory use with the `cudbReallocate` command. Either specify the percentage of distributed data to be moved with the `--entriespercentage` option, or export the data and use the `--list` option. Refer to *CUDB Node Commands and Parameters*, Reference [3] for more information on the `cudbReallocate` command and its options.
5. Perform a defragmentation again in the affected DSG. Refer to *CUDB System Administrator Guide*, Reference [5] for more information.
6. Check if the alarm is cleared, and depending on the result, perform one of the below steps:
  - a. If the alarm is cleared, then use the `cudbDsgProvisioningManage` command with the `--enable` option to allow the newly distributed data to be added to the referred DSG again. For more information, refer to *CUDB Node Commands and Parameters*, Reference [3].
  - b. If the alarm remains, then consult the next level of maintenance support. Further actions are outside the scope of this instruction.



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## Glossary

For the terms, definitions, acronyms and abbreviations used in this document, refer to *CUDB Glossary of Terms and Acronyms*, Reference [6].



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## Reference List

### **CUDB Documents**

- [1] *Storage Engine, Memory Usage Too High In DS, Full Threshold Reached*
- [2] *CUDB Node Configuration Data Model Description*
- [3] *CUDB Node Commands and Parameters*
- [4] *CUDB Node Fault Management Configuration Guide*
- [5] *CUDB System Administrator Guide*
- [6] *CUDB Glossary of Terms and Acronyms*

### **Other Ericsson Documents**

- [7] *System Safety Information*
- [8] *Personal Health and Safety Information*