

# Storage Engine, High Load in PLDB

## Ericsson Centralized User Database

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REGISTRATION

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# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Alarm Description	1
1.2	Prerequisites	3
<b>2</b>	<b>Procedure</b>	<b>5</b>
2.1	Actions for Intensive Database Operations	5
2.2	Actions for High Rate of Incoming LDAP Operations	5
	<b>Glossary</b>	<b>7</b>
	<b>Reference List</b>	<b>9</b>





# 1 Introduction

This instruction concerns alarm handling for the Storage Engine, High Load In PLDB alarm.

## 1.1 Alarm Description

The alarm is issued when the load in the Processing Layer Database (PLDB) is above its processing capacity. A clear sign of this is when the *drop ratio* goes above a certain threshold. The *drop ratio* for the PLDB is defined as the number of Lightweight Directory Access Protocol (LDAP) operations that could not be processed because of overload in the PLDB, divided by the number of received LDAP operations which were meant to be processed by the PLDB over a period of time.

The alarm is issued in the following situation:

- The ratio defined above goes beyond the threshold configured in the `pldbClusterDropRatioAlarmThreshold` parameter. Refer to *CUDB Node Configuration Data Model Description*, Reference [1] for more information on this parameter.

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
High ratio of failed operations vs. total operations in the PLDB.	The ratio of failed operations vs. total operations in the PLDB was higher during a period of time than the configured threshold.	Intensive database operations are performed in the PLDB. Such operations can include provisioning, massive searches, PLDB blade reboot and so on.	PLDB	<ul style="list-style-type: none"><li>Traffic may be rejected for the PLDB.</li><li>Response time of operations addressed to the PLDB may be higher.</li></ul>
		<p>The rate of incoming LDAP operations is too high. This can occur in the following cases:</p> <ul style="list-style-type: none"><li>The rate of incoming LDAP operations per subscriber is very high, even if the number of subscribers is low.</li><li>The number of subscribers is very high, even if the rate of incoming LDAP operations per subscribers is low.</li></ul>		

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	17
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 raised.
Resource ID	.1.3.6.1.4.1.193.169.1.1.17
Alarm Model Description	High Load, Storage Engine.
Alarm Active Description	Storage Engine (PLDB): High Load.
ITU Alarm Event Type	processingErrorAlarm (4)
ITU Alarm Probable Cause	systemResourcesOverload (207)
ITU Alarm Perceived Severity	(4) - Major



Attribute Name	Attribute Value
Originating Source IP	Node ID where the alarm was raised.
Sequence Number	Number which indicates the order in which alarms were raised.

For further information about attribute descriptions, refer to the *Alarm Format and Description* section of *CUDB Node Fault Management Configuration Guide*, Reference [2].

## 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:

- *CUDB Node Fault Management Configuration Guide*, Reference [2]
- *System Safety Information*, Reference [4]
- *Personal Health and Safety Information*, Reference [5]

### 1.2.2 Tools

Not applicable.

### 1.2.3 Conditions

Not applicable.







## 2 Procedure

This section describes the procedure to follow when this alarm is received.

### 2.1 Actions for Intensive Database Operations

Database processing-intensive tasks, such as massive operations, provisioning or PLDB blade reboot can explain the high load. If such an operation is running when the alarm is raised, wait for the alarm to be automatically cleared.

### 2.2 Actions for High Rate of Incoming LDAP Operations

Occasional high load situations can be expected in any traffic-processing system, since there might be times when the incoming traffic level is higher than foreseen. Nevertheless, if this alarm is raised too frequently, or stays raised for long periods of time, then do the following:

1. Check if the application Front Ends (FEs), LDAP clients using the CUDB system are configured in a way that results in the balanced distribution of load across all CUDB nodes. In case too many application FEs are connected to a specific CUDB node, it can result in the high load of the the PLDB. In this case, consult the next level of maintenance support. Further actions are outside the scope of this instruction.
2. If the application FEs seem to be properly configured, then the incoming traffic may be higher than originally expected, and the current CUDB system dimensioning may no longer be enough to cope with it. In this case, consult the next level of maintenance support. Further actions are outside the scope of this instruction.





## Glossary

For the terms, definitions, acronyms, and abbreviations used in this document, refer to *CUDB Glossary of Terms and Acronyms*, Reference [3].





## Reference List

### **CUDB Documents**

- [1] *CUDB Node Configuration Data Model Description*
- [2] *CUDB Node Fault Management Configuration Guide*
- [3] *CUDB Glossary of Terms and Acronyms*

### **Other Ericsson Documents**

- [4] *System Safety Information*
- [5] *Personal Health and Safety Information*