

CUDB Binary Large Object Attributes Management

FACILITY DESCRIPTION

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1 Introduction

This document provides a description of the optional Binary Large Object (BLOB) Attributes Management feature for the Ericsson Centralized User Database (CUDB).

1.1 Scope

The purpose of this document is to describe the operational conditions and function administration of the optional BLOB Attributes Management feature.

1.2 Revision Information

This section contains the changes in the feature between the releases of this document.

Rev. A	This document is based on 2/155 34-CRH 109 0494/6 and contains editorial changes only.
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1.3 Target Groups

This document is intended for system administrators and users operating CUDB equipment.

1.4 Prerequisites

Users of this document must have a basic knowledge of CUDB and BLOBs.

1.5 Typographic Conventions

Typographic conventions can be found in the following document:

- *Typographic Conventions.*





2 Overview

This section provides an overview of the BLOB Attributes Management feature.

2.1 Prerequisites

This section is not applicable to this feature.

2.2 Architecture

This section is not applicable to this feature.

2.3 Description

The BLOB Attributes Management feature allows to define LDAP attributes up to 4 GB in size. When defining and installing a new LDAP schema for CUDB, attributes larger than 4 KB are mapped to SQL BLOB data types.

BLOB attributes can be kept in RAM, or on the disk storage system. The storage location must be selected according to capacity and performance requirement considerations. BLOB attributes kept on the disk storage system have slower access time than BLOBs stored in the memory; however, keeping BLOBs on the disk storage system leaves more memory capacity for other CUDB data.

The CUDB system automatically manages the storage space for every piece of data kept in RAM; however, the storage space of the BLOBs on the disk storage system must be managed manually. System administrators must estimate the amount of LDAP entries (including object classes) and the approximate size of the BLOB data stored on the disk storage system for each affected LDAP entry, then allocate the amount of storage used for every BLOB attribute (in every object class) according to the estimation.

For each BLOB disk storage space defined, a number of data files are created to improve system performance. Each file has an initial size of 128 MB (unless the space for the BLOB disk storage space is lower than 128 MB), which is distributed between the object class attributes. The BLOB storage space is named after the object class name storing its attributes on it: this BLOB storage space name is also indicated in the related alarms.

Refer to *CUDB LDAP Schema Management*, Reference [1] for more information on schema management in CUDB.



2.4 Dependencies and Interactions

This section is not applicable to this feature.



3 Operation and Maintenance

This section provides operation and maintenance information for the BLOB Attribute Management feature.

3.1 Configuration

BLOB attributes are configured in CUDB with LDAP schemas, and by means of octet string attribute types added to CUDB schemas by following the process described in *CUDB Application Integration Guide*, Reference [2].

The added schemas are then loaded into CUDB by using CUDB schema management tools, which map octet string attribute types that are bigger than 4 KB to BLOBs, and also allocate the necessary disk storage space. Refer to *CUDB LDAP Schema Management*, Reference [1] for more information on schema management in CUDB.

The `cudbDbDiskManage` command is used to manage the disk storage space for the BLOB attributes of a specific CUDB object class kept on the disk storage system. The following operations can be performed :

- Allocating extra storage space for BLOB attributes belonging to a specified object class. This operation must be performed if the originally reserved space is not enough anymore.
- Checking the amount of occupied and free storage space for storing attribute values for a specified object class.

Refer to *CUDB Node Commands and Parameters*, Reference [7] for more information on the command.

3.2 Fault Management

The following events generate an alarm:

- An alarm is raised when a specific BLOB storage space in a DS cluster of a CUDB node is running out of available space, and reached its threshold. Refer to *Storage Engine, Tablespace Usage Too High In DS, Warning*, Reference [3].
- An alarm is raised when a specific BLOB storage space in the Processing Layer Database (PLDB) Storage Engine is running out of available space, and reached its threshold. Refer to *Storage Engine, Tablespace Usage Too High In PLDB, Warning*, Reference [4].



- An alarm is raised when a specific BLOB storage space in the DS cluster of a CUDB node is full.
Refer to *Storage Engine, Out Of Tablespace In DS*, Reference [5].
- An alarm is raised when a specific BLOB storage space in the PLDB Storage Engine is full.
Refer to *Storage Engine, Out Of Tablespace In PLDB*, Reference [6].

3.3 Performance Management

This section is not applicable to this feature.

3.4 Security

This section is not applicable to this feature.

3.5 Logging

This section is not applicable to this feature.



Glossary

For the terms, definitions, acronyms and abbreviations used in this document, refer to *CUDB Glossary of Terms and Acronyms*, Reference [8].





Reference List

CUDB Documents

- [1] *CUDB LDAP Schema Management*
- [2] *CUDB Application Integration Guide*
- [3] *Storage Engine, Tablespace Usage Too High In DS, Warning*
- [4] *Storage Engine, Tablespace Usage Too High In PLDB, Warning*
- [5] *Storage Engine, Out Of Tablespace In DS*
- [6] *Storage Engine, Out Of Tablespace In PLDB*
- [7] *CUDB Node Commands and Parameters*
- [8] *CUDB Glossary of Terms and Acronyms*