

# CUDB Counters List

LIST

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# 1 Introduction

This document lists the counters used in the Ericsson Centralized User Database (CUDB).

## 1.1 Document Purpose and Scope

This document provides information about the different counters made available by the CUDB. For further information on how to create and configure counters, refer to [CUDB Performance Guide, Reference \[1\]](#).

## 1.2 Revision Information

### Rev. A

This document is based on 1/00651-CSH 109 067/9 with the following changes:

- Section 2.1 on page 3: Updated section regarding the configuration of LDAP FEs.
- Section 2.3.2 on page 17: Updated the description of `failedLdapRequests` in Table 36, and the range of `DSn`.

### Rev. B

Other than editorial changes, this document has been revised as follows:

- Section 2.2.1 on page 4, Section 2.3.1 on page 14, and Section 2.3.2 on page 17: Updated with Key Performance Indicators (KPIs).

### Rev. C

Other than editorial changes, this document has been revised as follows:

- Section 2.2.1 on page 4: Added new tables, Table 13, Table 14, and Table 15.

### Rev. D

Other than editorial changes, this document has been revised as follows:

- Section 2.1 on page 3: Removed command.

### Rev. E

Other than editorial changes, this document has been revised as follows:



- Section 2.1 on page 3: Added Table 3.
- Section 2.3.1 on page 14: Added Table 27.
- Section 2.3.2 on page 17: Added Table 34.
- Section 2.2.1 on page 4, Section 2.3.1 on page 14, and Section 2.3.2 on page 17: Updated note regarding KPI validity in Table 11, Table 12, Table 29, Table 30, Table 31, Table 37, Table 38, and Table 39.

#### **Rev. F**

Other than editorial changes, this document has been revised as follows:

- Section 2.2.1 on page 4: Added Table 16 and Table 17.
- Section 2.2.2 on page 12: Updated the number of configurable application groups.

## 1.3 Typographic Conventions

Typographic conventions can be found in the following document:

- [Typographic Conventions](#)



## 2 Counter Descriptions

The following table shows a brief description of the counter fields that are provided by CUDB node. This information is shown in following chapters for each counter.

Table 1 Field Description in the Counters Tables

Field	Description
Counter name	Name of the counter as it will appear in the 3GPP XML output file.
Counter group	Group to which this counter belongs.
Counter description	Brief explanation of the counter.
Counter type	A counter may be a gauge (it may increase or decrease) or be cumulative (it always increases).
Triggering event	The event or events that may increase or decrease the counter.

**Note:** The maximum size for cumulative counters is  $2^{63}-1$ . Counters are reset once they reach the maximum size.

### 2.1 LDAP Server Counters

These counters show information about the average of the number of LDAP operations. There is a counter per each possible LDAP server in the CUDB node.

Table 2 LDAP Server Transactions Counter n

Field	Description
Counter name	ldapTpsAtFrontEndn
Counter group	LdapFrontEnds
Counter description	Number of LDAP operations per second being carried out by LDAP server number n. <sup>(1)</sup>
Counter type	Gauge
Triggering event	LDAP requests

(1) n is the number of the LDAP server, from 1 to 34.

TPS counter values are initialized to -2 for all LDAP Front Ends (FEs) that can be configured in a CUDB node, that is, LDAP FEs 1 to 34, and will be updated by the LDAP counters process after that.

Typically, CUDB nodes will not be fully configured with all possible LDAP FEs. TPS counters for non-configured LDAP FEs will keep the -2 value.



It is possible that, at the time the LDAP counters process tries to get information from an LDAP FE, the LDAP FE is down or not responding. TPS counters for configured but not-responding LDAP FEs will have a -1 value.

**Note:** This counter is incremented both by external LDAP operations received from application FEs connected to CUDB and by internal LDAP operations (that is, dummy LDAP searches used to monitor the LDAP servers).

Table 3 LDAP Server Individual Transactions Counter n

Field	Description
Counter name	effectiveLdapTpsAtFrontEndn
Counter group	LdapFrontEnds
Counter description	Number of individual LDAP operations per second including individual LDAP write operations within each bundle requests being carried out by LDAP server number n. <sup>(1)</sup>
Counter type	Gauge
Triggering event	LDAP requests

(1) n is the number of the LDAP server, from 1 to 34.

## 2.2 LDAP Node Counters

These counters provide information about the LDAP requests handled by a CUDB node.

**Note:** Only SEARCH, MODIFY, ADD, or DELETE LDAP requests are counted. BIND, UNBIND LDAP requests or requests with invalid syntax or referring to not configured schemas are not counted.

### 2.2.1 Overall LDAP Node Counters

This set of counters provide information about how all the LDAP requests received in the CUDB node are handled. These counters indirectly offer a summary of how the CUDB system as a whole is performing when looking at it from this CUDB node.

Table 4 LDAP Requests Received

Field	Description
Counter name	receivedLdapReqsTotal
Counter group	LdapNodeOverall
Counter description	Number of LDAP requests received in the CUDB node.
Counter type	Cumulative
Triggering event	LDAP requests





Table 5 LDAP Requests Processed Locally

Field	Description
Counter name	processedLdapReqsLocalNode
Counter group	LdapNodeOverall
Counter description	Number of LDAP requests processed locally, answered by querying any of the local database clusters, PLDB or DSs. This counter only considers the database cluster where the actual data related to the LDAP request is stored; PLDB lookups to figure out where (in which DSG) the requested piece of data are not counted here.
Counter type	Cumulative
Triggering event	LDAP requests

Table 6 LDAP Requests Processed at Other Nodes

Field	Description
Counter name	processedLdapReqsRemoteNodes
Counter group	LdapNodeOverall
Counter description	Number of LDAP requests processed at other nodes. This counter includes LDAP requests that were proxied to another CUDB node in the system and that were processed locally there or proxied again and processed locally in a third CUDB node.
Counter type	Cumulative
Triggering event	LDAP requests

Table 7 LDAP Requests Dropped Because the Local LDAP Servers Are Overloaded

Field	Description
Counter name	droppedLdapReqsLocalLdapLayer
Counter group	LdapNodeOverall
Counter description	Number of LDAP requests dropped because the local LDAP servers are overloaded.
Counter type	Cumulative
Triggering event	LDAP requests

Table 8 LDAP Requests Dropped Because the Local Clusters Are Overloaded

Field	Description
Counter name	droppedLdapReqsLocalClusters



Field	Description
Counter group	LdapNodeOverall
Counter description	<p>Number of LDAP requests dropped because the local database clusters are overloaded. This counter includes:</p> <ul style="list-style-type: none"><li>• LDAP requests dropped by the LDAP FEs because the clusters are overloaded</li><li>• LDAP requests where any of the related database operations was rejected by the local cluster itself due to overload.</li></ul>
Counter type	Cumulative
Triggering event	LDAP requests

Table 9 LDAP Requests Failed to Be Processed Locally

Field	Description
Counter name	failedLdapReqsLocalNode
Counter group	LdapNodeOverall



Field	Description
Counter description	<p>Number of LDAP requests failed to be processed locally. This counter includes:</p> <ul style="list-style-type: none"> <li>• LDAP requests intended to be processed at the master replica of a masterless DSG or PLDB.</li> <li>• LDAP requests intended to be processed at the master replica of a DSG (or PLDB) when a master election is ongoing.</li> <li>• LDAP requests received while the local replica of PLDB is down.</li> <li>• LDAP requests intended to be processed at a DSG when no replica of that DSG is available.</li> <li>• LDAP requests intended to be processed at a local DS (or PLDB) when the local cluster happens to be unreachable.</li> <li>• Write LDAP requests on an entry which is blocked during reallocation when the master replica of the DSG storing that LDAP entry is hosted in the local node.</li> <li>• Write LDAP requests on a DSG (or PLDB) whose master replica is hosted in the local node and is full.</li> <li>• LDAP requests not processed due to thread limits in the LDAP FE.</li> <li>• LDAP search requests intended to be handled locally that were not answered within the time limit set for the operation.</li> </ul>
Counter type	Cumulative
Triggering event	LDAP requests

Table 10 LDAP Requests Not Processed at Other Nodes

Field	Description
Counter name	nonProcessedLdapReqsRemoteNodes
Counter group	LdapNodeOverall



Field	Description
Counter description	<p>Number of LDAP requests not processed on other nodes. This counter includes every kind of operation to be processed on a different node but that was not, because:</p> <ul style="list-style-type: none"><li>• they were proxied to another node but turned out to be "Dropped Because the Local LDAP FEs Are Overloaded", "Dropped Because the Local Clusters Are Overloaded" or "Failed to Be Processed Locally" operations in that remote node.</li><li>• they were proxied to another node but the time limit for the operation was reached before a response was received from the remote node.</li></ul>
Counter type	Cumulative
Triggering event	LDAP requests

Table 11 Processing Capacity Used by LDAP Requests

Field <sup>(1)</sup>	Description
KPI name	kpiLdapFeLoad
KPI group	LdapNodeOverall
KPI description	Processing capacity used by LDAP requests, in %. <sup>(2)</sup>
KPI type	Gauge
Triggering event	LDAP requests

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDb.

(2) The average of the LDAP FE load of the associated virtual cores within the node for the previous 15 minute monitoring period.

Table 12 Percentage of LDAP Requests Dropped Because LDAP FE Is Overloaded

Field <sup>(1)</sup>	Description
KPI name	kpiRatioDroppedLdap
KPI group	LdapNodeOverall
KPI description	Ratio of LDAP requests dropped due to the overload of the local LDAP FE over the total number of LDAP requests received during the same period, in %. <sup>(2)</sup>
KPI type	Gauge
Triggering event	LDAP requests

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDb.

(2) Calculated as the average of the values collected during the previous 15 minute monitoring period.



The following relationship holds among the above counters:

$$\text{receivedLdapReqsTotal} = \text{processedLdapReqsLocalNode} + \text{processedLdapReqsRemoteNodes} + \text{droppedLdapReqsLocalLdapLayer} + \text{droppedLdapReqsLocalClusters} + \text{failedLdapReqsLocalNode} + \text{nonProcessedLdapReqsRemoteNodes}$$

Table 13 Number of Local Read LDAP Requests Processed in the Replica of Current Node

Field	Description
Counter name	processedLocalReadsLocalNode
Counter group	LdapNodeOverall
Counter description	<p>Number of local read LDAP requests processed at a local DS replica. It counts direct requests received from a client application FE (it does not count incoming proxy operations from other CUDB nodes) that fulfill all the following conditions:</p> <ul style="list-style-type: none"> <li>• LDAP search operations, excluding distributed searches, received from an LDAP user configured with ReadModeInDS=LP and which are not overridden by the ReadMode LDAP control. For more information, refer to the ReadMode Control section of <a href="#">CUDB LDAP Interwork Description, Reference [2]</a>.</li> <li>• Operations processed at this node.</li> </ul>
Counter type	Cumulative
Triggering event	LDAP search requests

Table 14 Number of Local Read LDAP Requests Processed at a DS Replica within the Same Site

Field	Description
Counter name	processedLocalReadsOtherNodesInSite
Counter group	LdapNodeOverall



Field	Description
Counter description	<p>Number of local read LDAP requests processed at a DS replica within the same site. It counts direct requests received from a client application FE (it does not count incoming proxy operations from other CUDB nodes) that fulfill all the following conditions:</p> <ul style="list-style-type: none"><li>• LDAP search operations, excluding distributed searches, received from an LDAP user configured with ReadModeInDS=LP and which are not overridden by the ReadMode LDAP control. For more information, refer to the ReadMode Control section of <a href="#">CUDB LDAP Interwork Description, Reference [2]</a>.</li><li>• Operations proxied towards nodes within the same site, because either there is no available replica of the target DS in the same site or the conditions to apply local reads are not met.</li></ul>
Counter type	Cumulative
Triggering event	LDAP search requests

The total number of Local Reads for users with ReadModeInDS=LP configuration, that is, the total count of LDAP search requests terminated in any node sitting in the same site where the original client search was received, is the sum of the previous two counters (`processedLocalReadsLocalNode` + `processedLocalReadsOtherNodesInSite`). Thus, either a local read ended in the same node or in another peer node but still in the same network site.

Table 15 Number of Local Read LDAP Requests Processed at a DS Replica in a Different Site

Field	Description
Counter name	<code>processedLocalReadsRemoteSites</code>
Counter group	<code>LdapNodeOverall</code>



Field	Description
Counter description	<p>Number of local read LDAP requests processed at a DS replica in a different site. It counts direct requests received from a client application FE (it does not count incoming proxy operations from other CUDB nodes) that fulfill all the following conditions:</p> <ul style="list-style-type: none"> <li>• LDAP search operations, excluding distributed searches, received from an LDAP user configured with ReadModeInDS=LP and which are not overridden by the ReadMode LDAP control. For more information, refer to the ReadMode Control section of <a href="#">CUDB LDAP Interwork Description</a>, Reference [2].</li> <li>• Operations proxied towards nodes in a different site, because either there is no available replica of the target DS in the same site or the conditions to apply local reads are not met.</li> </ul>
Counter type	Cumulative
Triggering event	LDAP search requests

Table 16 Load Unbalance on LDAP FEs in CUDB Node

Field	Description
KPI name	kpiLdapFesLoadUnbalance
KPI group	LdapNodeOverall
KPI description	Load unbalance on LDAP FEs in CUDB node, calculated as absolute mean deviation from average TPS values on each active LDAP FE, in %.
KPI type	Gauge
Triggering event	Uneven LDAP FEs load distribution

Table 17 Memory Usage Unbalance in CUDB Node

Field	Description
KPI name	kpiDsMemoryUsageUnbalance
KPI group	LdapNodeOverall



Field	Description
KPI description	Memory usage unbalance amongst Data Store (DS) Units in CUDB node, calculated as absolute mean deviation from memory usage values on each active DS, in %.
KPI type	Gauge
Triggering event	Uneven memory usage distribution

## 2.2.2

### Per-Application Group LDAP Node Counters

This subset of counters provides information about the LDAP requests handled by a CUDB node on a per-application group basis. LDAP users can be mapped to application groups by means of a configuration parameter, `countersGroup`, part of the `CudbLdapUser` class. For details on this parameter, refer to [CUDB Node Configuration Data Model Description, Reference \[3\]](#).

There are 14 configurable application groups, `AppGroupn`, with `n` ranging from 1 to 14. A 15th, "catch all", application group gathers any LDAP users not assigned to one of the 14 configurable application groups.

Table 18 LDAP Requests Received from LDAP Users Belonging to Application Group `n`

Field	Description
Counter name	<code>receivedLdapReqsAppGrpn</code>
Counter group	<code>LdapNodePerApplication</code>
Counter description	Number of LDAP requests received from LDAP users belonging to application group <code>n</code> .
Counter type	Cumulative
Triggering event	LDAP requests

Table 19 LDAP Requests Received from LDAP Users Belonging to Application Group `n` That Were Processed

Field	Description
Counter name	<code>processedLdapReqsAppGrpn</code>
Counter group	<code>LdapNodePerApplication</code>
Counter description	Number of LDAP requests received from LDAP users belonging to application group <code>n</code> and that were processed.
Counter type	Cumulative
Triggering event	LDAP requests





**Table 20 LDAP Requests Received from LDAP Users Belonging to Application Group n That Were Dropped or Failed to Be Processed**

Field	Description
Counter name	droppedAndFailedLdapReqsAppGrpn
Counter group	LdapNodePerApplication
Counter description	<p>Number of LDAP requests received from LDAP users belonging to application group n and that were:</p> <ul style="list-style-type: none"> <li>• dropped because any of the components in the CUDB was overloaded, or</li> <li>• failed to be processed due to one of the reasons indicated in Table 9.</li> </ul>
Counter type	Cumulative
Triggering event	LDAP requests

**Table 21 LDAP Requests Received from LDAP Users That Do Not Belong to Any Application Group**

Field	Description
Counter name	receivedLdapReqsCatchAll
Counter group	LdapNodePerApplication
Counter description	Number of LDAP requests received from LDAP users that do not belong to any of the four configurable application groups.
Counter type	Cumulative
Triggering event	LDAP requests

**Table 22 LDAP Requests Received from LDAP Users That Do Not Belong to Any Application Group That Were Processed**

Field	Description
Counter name	processedLdapReqsCatchAll
Counter group	LdapNodePerApplication
Counter description	Number of LDAP requests received from LDAP users that do not belong to any of the four configurable application groups and that were processed.
Counter type	Cumulative
Triggering event	LDAP requests



Table 23 LDAP Requests Received from LDAP Users That Do Not belong to Any Application Group That Were Dropped or Failed to Be Processed

Field	Description
Counter name	droppedAndFailedLdapReqsCatchAll
Counter group	LdapNodePerApplication
Counter description	<p>Number of LDAP requests received from LDAP users that do not belong to any of the four configurable application groups and that were:</p> <ul style="list-style-type: none"><li>• dropped because any of the components in the CUDB was overloaded, or</li><li>• failed to be processed due to one of the reasons indicated in Table 9.</li></ul>
Counter type	Cumulative
Triggering event	LDAP requests

The following relationship holds among the above counters:

$$\text{receivedLdapReqsAppGrpn} = \text{processedLdapReqsAppGrpn} + \text{droppedAndFailedLdapReqsAppGrpn}$$
$$\text{receivedLdapReqsCatchAll} = \text{processedLdapReqsCatchAll} + \text{droppedAndFailedLdapReqsCatchAll}$$

## 2.3 Per Database Cluster Counters

### 2.3.1 PLDB Cluster Counters

This set of counters provides information about the local PLDB database cluster. Some counters report how the cluster is performing as far as LDAP processing is concerned. Other counters reports cluster memory usage and used processing capacity.

PLDB lookups to figure out where (in which DSG) the requested piece of data is are counted here. So, if an LDAP operation involves a PLDB lookup and after that one or several other databases are accessed, the counters incremented are: a PLDB counter and a counter for each of the other databases that have been accessed.

**Note:** Only SEARCH, MODIFY, ADD or DELETE LDAP requests are counted. BIND, UNBIND LDAP requests or requests with invalid syntax or referring to not configured schemas are not counted.



Table 24 LDAP Requests That Required Access to the PLDB Cluster

Field	Description
Counter name	intendedLdapRequests
Counter group	Pldb
Counter description	Number of LDAP requests that required access to the PLDB.
Counter type	Cumulative
Triggering event	LDAP requests

Table 25 LDAP Requests That Actually Accessed the PLDB

Field	Description
Counter name	processedLdapRequests
Counter group	Pldb
Counter description	Number of LDAP requests that actually accessed the PLDB.
Counter type	Cumulative
Triggering event	LDAP requests

Table 26 LDAP Requests Dropped Because the PLDB Cluster Is Overloaded

Field	Description
Counter name	droppedLdapRequests
Counter group	Pldb
Counter description	<p>Number of LDAP requests dropped because the PLDB is overloaded. This counter includes:</p> <ul style="list-style-type: none"> <li>• LDAP requests dropped by the LDAP FEs (first line of defense) because the cluster is overloaded, and</li> <li>• LDAP requests where any of the related database operations was rejected by the local cluster itself due to overload.</li> </ul>
Counter type	Cumulative
Triggering event	LDAP requests

Table 27 Sum of LDAP Requests That Actually Accessed the PLDB with Individual LDAP Write Operations Within Successful Bundle Requests Targeting PLDB Cluster

Field	Description
Counter name	effectiveLdapOperations



Field	Description
Counter group	Pldb
Counter description	Number of LDAP requests that actually accessed the PLDB summed with individual LDAP write operations within successful bundle requests targeting PLDB cluster.
Counter type	Cumulative
Triggering event	LDAP requests

Table 28 LDAP Requests Failed to Be Processed by the PLDB

Field	Description
Counter name	failedLdapRequests
Counter group	Pldb
Counter description	Number of LDAP requests failed to be processed by the PLDB. These would fall in one of the following cases: <ul style="list-style-type: none"><li>• LDAP requests intended to be processed at the local PLDB when the local PLDB happens to be unreachable.</li><li>• Write LDAP requests on the PLDB when the master replica is hosted in the local node and is full.</li></ul>
Counter type	Cumulative
Triggering event	LDAP requests

Table 29 PLDB Cluster Memory Usage

Field <sup>(1)</sup>	Description
KPI name	memoryUsage
KPI group	Pldb
KPI description	Used database memory pages over total database memory pages, in %.
KPI type	Gauge
Triggering event	Changes in the amount of data stored in PLDB

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDb.

Table 30 Used Processing Capacity of the PLDB Cluster

Field <sup>(1)</sup>	Description
KPI name	kpiClusterLoad
KPI group	PLDB load indicator



Field <sup>(1)</sup>	Description
KPI description	Used processing capacity of the PLDB cluster, in %. <sup>(2)</sup>
KPI type	Gauge
Triggering event	PLDB cluster requests

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDb.

(2) The average value of the peak PLDB load in the associated virtual cores for the previous 15 minute monitoring period.

Table 31 Percentage of LDAP Requests Dropped Because PLDB Is Overloaded

Field <sup>(1)</sup>	Description
KPI name	kpiRatioDroppedCluster
KPI group	PLDB dropped LDAP requests ratio indicator.
KPI description	Ratio of LDAP requests dropped due to the overload of PLDB, including requests dropped by the LDAP FE and by the local cluster, over the total number of LDAP requests that attempted to access PLDB during the same period, in $\theta/\theta\theta\theta$ . <sup>(2)</sup>
KPI type	Gauge
Triggering event	PLDB cluster requests

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDb.

(2) Calculated as the average of the values collected during the previous 15 minute monitoring period.

## 2.3.2

### DS Cluster Counters

These sets of counters provide information about each of the local DS<sub>n</sub> database clusters, with n ranging from 1 to 17. Some counters report how the DS<sub>n</sub> cluster is performing as far as LDAP processing is concerned. Other counters report DS<sub>n</sub> cluster memory usage and used processing capacity.

**Note:** Only SEARCH, MODIFY, ADD or DELETE LDAP requests are counted. BIND, UNBIND LDAP requests or requests with invalid syntax or referring to not configured schemas are not counted.

Table 32 LDAP Requests That Required Access to DS<sub>n</sub>

Field	Description
Counter name	intendedLdapRequests
Counter group	Dsn
Counter description	Number of LDAP requests that required access to DS <sub>n</sub> .
Counter type	Cumulative
Triggering event	LDAP requests



Table 33 LDAP Requests That Actually Accessed DSn

Field	Description
Counter name	processedLdapRequests
Counter group	Dsn
Counter description	Number of LDAP requests that actually accessed DSn.
Counter type	Cumulative
Triggering event	LDAP requests

Table 34 Sum of LDAP Requests That Actually Accessed the DS with Individual LDAP Write Operations Within Successful Bundle Requests Targeting DSn Cluster

Field	Description
Counter name	effectiveLdapOperations
Counter group	Dsn
Counter description	Number of LDAP requests that actually accessed the DS summed with individual LDAP write operations within successful bundle requests targeting DSn cluster. <sup>(1)</sup>
Counter type	Cumulative
Triggering event	LDAP requests

(1) n is the number of the LDAP server, from 1 to 34.

Table 35 LDAP Requests Dropped Because DSn Is Overloaded

Field	Description
Counter name	droppedLdapRequests
Counter group	Dsn
Counter description	<p>Number of LDAP requests dropped because DSn is overloaded. This counter includes:</p> <ul style="list-style-type: none"><li>• LDAP requests dropped by the LDAP FEs (first line of defense) because the cluster is overloaded.</li><li>• LDAP requests where any of the related database operations was rejected by the local cluster itself due to overload.</li></ul> <p><b>Note:</b> In case of LDAP search operations that affect several DSs, if the operation is rejected due to overload in any of the DSs, this counter will be incremented for all the affected DSs and not for just the ones overloaded.</p>
Counter type	Cumulative
Triggering event	LDAP requests

Table 36 LDAP Requests Failed to Be Processed by DS<sub>n</sub>

Field	Description
Counter name	failedLdapRequests
Counter group	Dsn
Counter description	<p>Number of LDAP requests failed to be processed by DS<sub>n</sub>. LDAP requests are intended to be processed at a local DS when that local DS happens to be unreachable.</p> <p><b>Note:</b> Even though it may seem reasonable to also count as failed operations for a DS those that fail either because of a lock due to reallocation, they will not be counted as such. In these cases, the overall counter for failed operations will be incremented as well as the one for processed operations in the per local cluster counters group for the PLDB but no update will be done on the per local cluster counters for the target DS.</p> <p><b>Note:</b> In case of LDAP search operations that affect several DSs, if the processing in any of the DS fails, this counter will be incremented for all the affected DSs and not for just the ones for which the operation failed.</p>
Counter type	Cumulative
Triggering event	LDAP requests

Table 37 DS Cluster Memory Usage

Field <sup>(1)</sup>	Description
KPI name	memoryUsage
KPI group	Dsn
KPI description	Used database memory pages over total database memory pages, in %.
KPI type	Gauge
Triggering event	Changes in the amount of data stored in DS <sub>n</sub>

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDb.

Table 38 Used Processing Capacity of the DS<sub>n</sub> Cluster

Field <sup>(1)</sup>	Description
KPI name	kpiClusterLoad
KPI group	DSG load indicator
KPI description	Used processing capacity of the DS <sub>n</sub> cluster, in %. <sup>(2)</sup>



Field <sup>(1)</sup>	Description
KPI type	Gauge
Triggering event	DSn cluster requests

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDB.

(2) The average value of the peak PLDB load in the associated virtual cores for the previous 15 minute monitoring period.

Table 39 Percentage of LDAP Requests Dropped Because DSn Is Overloaded

Field <sup>(1)</sup>	Description
KPI name	kpiRatioDroppedCluster
KPI group	Dropped LDAP requests ratio indicators
KPI description	Ratio of dropped LDAP requests due to overload of the DSn, including requests dropped by the LDAP FE and by the local cluster, over the total number of LDAP requests that attempted to access DSn during the same period, in $\theta/\theta\theta\theta$ . <sup>(2)</sup>
KPI type	Gauge
Triggering event	DSn

(1) Valid for CUDB systems deployed on native BSP 8100 and vCUDB.

(2) Calculated as the average of the values collected during the previous 15 minute monitoring period.

## 2.4 Notifications Counters

These counters show information about notifications sent to other application FEs. For more details, refer to [CUDB Notifications](#), Reference [4].

Table 40 Notifications Counter

Field	Description
Counter name	notificationsSent
Counter group	SoapNotifications
Counter description	The accumulated number of total notifications sent from a CUDB node.
Counter type	Cumulative
Triggering event	Any event configured in CUDB to trigger a notification.

Table 41 Failed Notifications Counter

Field	Description
Counter name	notificationsFailed





Field	Description
Counter group	SoapNotifications
Counter description	The accumulated number of failures detected in the acknowledgement from notification recipients, accounted per CUDB node.
Counter type	Cumulative
Triggering event	Any faulty acknowledgement to a notification sent by any CUDB node.





## Glossary

For the terms, definitions, acronyms and abbreviations used in this document, refer to [CUDB Glossary of Terms And Acronyms](#), Reference [5].





## Reference List

### **CUDB Documents**

- [1] CUDB Performance Guide
- [2] CUDB LDAP Interwork Description
- [3] CUDB Node Configuration Data Model Description
- [4] CUDB Notifications
- [5] CUDB Glossary of Terms And Acronyms