MySQL NDB Cluster 9.1 Release Notes

Abstract

This document contains release notes for the changes in each release of MySQL NDB Cluster that uses version 9.1 of the `NDB` (`NDBCLUSTER`) storage engine.

Each NDB Cluster 9.1 release is based on a mainline MySQL Server release and a particular version of the `NDB` storage engine, as shown in the version string returned by executing `SELECT VERSION()` in the `mysql` client, or by executing the `ndb_mgm` client `SHOW` or `STATUS` command; for more information, see MySQL NDB Cluster 9.1.

For general information about features added in NDB Cluster 9.1, see What is New in MySQL NDB Cluster 9.1. For a complete list of all bug fixes and feature changes in MySQL NDB Cluster, please refer to the changelog section for each individual NDB Cluster release.

For additional MySQL 9.1 documentation, see the MySQL 9.1 Reference Manual, which includes an overview of features added in MySQL 9.1 that are not specific to NDB Cluster (What Is New in MySQL 9.1), and discussion of upgrade issues that you may encounter for upgrades from MySQL 9.0 to MySQL 9.1 (Changes in MySQL 9.1). For a complete list of all bug fixes and feature changes made in MySQL 9.1 that are not specific to `NDB`, see MySQL 9.1 Release Notes.

Updates to these notes occur as new product features are added, so that everybody can follow the development process. If a recent version is listed here that you cannot find on the download page (https://dev.mysql.com/downloads/), the version has not yet been released.

The documentation included in source and binary distributions may not be fully up to date with respect to release note entries because integration of the documentation occurs at release build time. For the most up-to-date release notes, please refer to the online documentation instead.

For legal information, see the Legal Notices.

For help with using MySQL, please visit the MySQL Forums, where you can discuss your issues with other MySQL users.

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Preface and Legal Notices

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Changes in MySQL NDB Cluster 9.1.0 (2024-10-16, Innovation Release)

MySQL NDB Cluster 9.1.0 is a new Innovation release of NDB Cluster, based on MySQL Server 9.1 and including features in version 9.1 of the `NDB` storage engine, as well as fixing recently discovered bugs in previous NDB Cluster releases.

Obtaining MySQL NDB Cluster 9.1.   NDB Cluster 9.1 source code and binaries can be obtained from https://dev.mysql.com/downloads/cluster/.

For an overview of major changes made in NDB Cluster 9.1, see What is New in MySQL NDB Cluster 9.1.

This release also incorporates all bug fixes and changes made in previous NDB Cluster releases, as well as all bug fixes and feature changes which were added in mainline MySQL 9 through MySQL 9.1.0 (see Changes in MySQL 9.1.0 (2024-10-15, Innovation Release)).

• Deprecation and Removal Notes

• Functionality Added or Changed

• Bugs Fixed

Deprecation and Removal Notes

• Use of an `Ndb.cfg` file for setting the connection string for an NDB process was not well documented or supported. With this release, this file is now formally deprecated, and a warning is issued whenever it is used. You should expect support for this file to be removed in a future release of MySQL Cluster. (WL #15765)

Functionality Added or Changed

• The `ndbcluster` plugin subscribes to all changes that occur in `NDB` and writes them epoch by epoch to the binary log. Each epoch received from `NDB` consists of a large number of changes, all of which are written to the binary log transaction cache before flushing them to the binary log.

Previously, it was possible to configure the cache size for all threads, which often led to improper resource allocation for a MySQL Server used for writing a binary log of changes for `NDB`.

To enable dimensioning and configuring the system properly, we introduce a new system variable `ndb_log_cache_size` which makes it possible to set the size of the transaction cache used by the `NDB` binary log injector, so that this size can be set separately for writing the binary log for NDB transactions and (using `binlog_cache_size`) for writing other transactions whose sizes are likely to be smaller. (Bug #36694848)

Bugs Fixed

- **NDB Cluster APIs:** Using `NdbRecord` and `OO_SETVALUE` from the NDB API to write the value of a `Varchar`, `Varbinary`, `Longvarchar`, or `Longvarbinary` column failed with error `829`. (Bug #36989337)

- **MySQL NDB ClusterJ:** References to ClusterJPA and OpenJPA have been removed from the comments in the packaging files, as JPA code was already removed from ClusterJ some time ago. (Bug #36725675)

- **MySQL NDB ClusterJ:** `ReconnectTest` in the ClusterJ test suite failed sometimes due to a race condition. The test has been rewritten with proper synchronization. (Bug #28550140)

- Removed node management code from `TRIX` that was not actually used. (Bug #37006547)

- Submitting concurrent shutdown commands for individual nodes using `ndb_mgm SHUTDOWN node_id` or the MGM API sometimes had one or both of the following adverse results:

  - Cluster failure when all nodes in the same node group were stopped

  - Inability to recover when all nodes in the same node group were stopped, and the cluster had more than one node group

  This was due to the fact that the (planned) shutdown of a single node assumed that only one such shutdown occurred at a time, but did not actually check this limitation.

  We fix this so that concurrent single-node shutdown requests are serialized across the cluster, and any which would cause a cluster outage are rejected. (Bug #36943756)

  References: See also: Bug #36839995.

- Shutdown of a data node late in a schema transaction updating index statistics caused the president node to shut down as well. (Bug #36886242)

  References: See also: Bug #36877952.

- It was possible for duplicate events to be sent to user applications when a data node was shut down. (Bug #36750146)

- `BLOB_INLINE_SIZE=0` set within a column comment was not honored, and the default for the blob type was used instead (such as 256 bytes for `BLOB`).

  See NDB_COLUMN Options, for more information. (Bug #36724336)

- Issues arose when an attempt was made to use a SHM transporter's wakeup socket before it was ready, due in part to error-handling when setting up the SHM transporter, which did not close the socket correctly prior to making another attempt at setup. (Bug #36568752, Bug #36623058)

- An error in a `my.cnf` file could cause the management node to shut down unexpectedly. (Bug #36508565)

- A race condition sometimes occurred between the watchdog thread and the signal execution thread trying to start node failure handling in parallel. (Bug #35728261)

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