

- **recover**: A recovery thread retrieves data from a local checkpoint. A recovery thread specified as such never acts as a query thread.

It is also possible to combine the existing **main** and **rep** threads in either of two ways:

- Into a single thread by setting either one of these arguments to 0. When this is done, the resulting combined thread is shown with the name **main_rep** in the **ndbinfo.threads** table.
- Together with the **recv** thread by setting both **ldm** and **tc** to 0, and setting **recv** to 1. In this case, the combined thread is named **main_rep_recv**.

In addition, the maximum numbers of a number of existing thread types have been increased. The new maximums, including those for query threads and recovery threads, are listed here:

- LDM: 332
- Query: 332
- Recovery: 332
- TC: 128
- Receive: 64
- Send: 64
- Main: 2

Maximums for other thread types remain unchanged.

For more information, see the descriptions of the **ThreadConfig** parameter and the **ndbinfo.threads** table.

Also, as the result of work done relating to this task, **NDB** now employs mutexes to protect job buffers when using more than 32 block threads. While this can cause a slight decrease in performance (1 to 2 percent in most cases), it also significantly reduces the amount of memory required by very large configurations. For example, a setup with 64 threads which used 2 GB of job buffer memory prior to **NDB 8.0.23** should require only about 1 GB instead in **NDB 8.0.23** and later. In our testing this has resulted in an overall improvement on the order of 5 percent in the execution of very complex queries.

- **ndbmtdd Thread Auto-Configuration.** Beginning with **NDB 8.0.23**, it is possible to employ automatic configuration of threads for multi-threaded data nodes using the **ndbmtdd** configuration parameter **AutomaticThreadConfig**. When this parameter is set to 1, **NDB** sets up thread assignments automatically, based on the number of processors available to applications, for all thread supported thread types, including the new **query** and **recover** thread types described in the previous item. If