

New CSOs and CSCs

What makes a CSO?

Choose Manage CSO from the drop-down. This opens up a form with the following details:

- **SQL:** Any user defined SQL which returns a result set.
- **Key Columns:** CSOs work with a result set which has unique rows. A combination of one or more columns of the result set can be made as a key column as long as this key column identifies a unique row in the result set.
- **Server(s):** Comma separated names of the servers for which this SQL needs to be queried every Collection Interval.
- **Data Collection Interval:** Interval in which this SQL is queried periodically. We recommend five minutes which also happens to be the default value.
- **Purging Interval:** The data retention time & we recommend seven days.

MANAGE CUSTOM SQL OBJECTS Close

Name*
Cluster_Data_Free
Name of the Custom SQL object.

Enabled?
 Yes No
Select "Yes" to have SQL Diagnostic Manager evaluate this Monitor and display the output on the Monitors page.

SQL Query*

```
/* Requirement : MySQL Cluster v7.1.3
This query will return percentage of free data memory */

SELECT
    @total_data_memory :=
    (SELECT
        SUM(total) AS `Total_Memory`
    FROM
        ndbinfo.memoryusage
    WHERE memory_type = 'Data memory') AS
    `Total_Data_Memory`,
    @used_data_memory :=
```


The MySQL query that defines this Custom SQL Object

Key Columns*
Used_Data_Memory
A column or a combination of columns that uniquely identifies a row in the result set.

Available Options

- Cluster_Data_Free
- Cluster_Nodes
- Cluster_Redobuffer
- Cluster_Redologspace
- Data_Types
- Database_Size
- DiskInfo
- FullText_Index
- Host_Hitting_by_File_io
- Host_Hitting_by_Tablescans
- Non_InnoDB_Tables_Count
- Object_accessed_the_most
- Percona_Active_Tables
- Percona_Unused_Indexes
- Performance_Schema_Events
- Primary_Key_Ratio
- Schema_Redundant_Index
- Storage_Engine
- Table_InnoDB_Buffer_Pool

Making its CSC

We create a CSC like any other monitor. Go to monitors page and select **Add new monitor** from the drop-down

- Enter the name of the counter being added.
- Type in the name of the group to which this counter is being added.
- Choose the type of counter as Custom SQL.

- **Formula:** A MySQL server parameter that is needed to compute the value of this counter.
- **Value:** This defines a function that computes the value. Below, you can find a template:

```
function() {
    var sqlObject = MONyog.UserObject('<Name of your Custom SQL Object>');
    if (!sqlObject || !sqlObject.isEnabled() || !MONyog.MySQL.Custom.Available)
        return '(n/a)';
    /* You will have to call select here to fetch the resultset. */
    var resultSet = sqlObject.select();
    var results = ''; /* results holds the resultset in the form of array of row(s).*/
    /*Get column(s) for each row from the result set */
    for (i in resultSet) {
        if (resultSet.length > 0)
            results += '<br>';
        results += resultSet[i].<Column name in resultset> +
            '.' + resultSet[i].<Column name in resultset>;
    }
    if (results.length == 0)
        results = 'None';
    return results;
}
```

- **Description:** Description of Monitor/Advisor.
- **Advice Text:** Advise text to the Monitor/Advisor being added.

[SQL Diagnostic Manager for MySQL](#) agentless and cost-effective performance monitoring for MySQL and MariaDB.

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