

Custom SQL Objects (CSOs)

The CSO feature is to utilize information available in Information_Schema (as well as Performance_Schema of MySQL 5.5+) that are not exposed in the basic SHOW statements we have been using in the monitors/advisors. In addition to the Performance_Schema SELECT queries any query which returns a result set can be monitored.

CSOs not only lets you monitor server metrics but also lets you monitor server data.

A CSC is based on any user-defined SQL query returning a result set. The array returned by MySQL from the SQL query populates a SQL DM for MySQL Object (a "Custom SQL Object" (CSO) in this case). This is exposed as a javascript array that may be referenced in SQL DM for MySQL counter definitions like any SQL DM for MySQL object.

Enabling pre-defined CSCs and CSOs:

In order to monitor CSOs you need to create a Custom SQL Counter(CSC). SQL DM for MySQL comes shipped with a bunch of pre-defined CSCs with their respective CSOs. By default, all pre-defined CSOs and CSCs are disabled. To enable some of these samples follow these steps:

1. Click the drop-down icon beside the title Monitors -> Manage CSO. The twenty-eight pre-defined CSOs display in the left menu. As an example select the **DiskInfo** item. The User Defined SQL-query displays in the SQL box. Sample interval and retention timeframe specific for this CSO may be changed as per your preference and you may specify for which MySQL server(s) this particular CSO should be collected. Also note that one or more Key columns are defined. It must be a column or a set of columns returning (a) unique (set of) value(s) (similar to a UNIQUE KEY in MySQL). Without defining a Key Column, the result monitors might now show proper values.

MANAGE CUSTOM SQL OBJECTS (+) ✕ Close

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

Tables_Size

Tables_with_full_table_scans

Tables_Without_Constraints

Unused_Indexes_In_Schema

Users_Connected

Users_Hitting_by_File_io

Users_Hitting_by_Tablescans

Users_statements_executed

Name*

DiskInfo

Name of the Custom SQL object.

Enabled?

☐ Yes ☒ No

Select "Yes" to have MONyog evaluate this Monitor and display the output on the Monitors page.

SQL Query*

```
/* Requirement : MySQL v5.0+
   This query will return TableName and number of records it has.
*/

SELECT
  TABLE_SCHEMA AS `Database`,
  TABLE_NAME AS `Table`,
  TABLE_ROWS AS `Rows`
FROM
  information_schema.TABLES;
```

The MySQL query that defines this Custom SQL Object

Key Columns*

Database, Table

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

Server(s)

A comma separed names of all the servers for which this Custom SQL Object is applied. If this field is left empty, this Custom SQL Object is applicable to all the servers added

Data Collection Interval

5

Minute(s) ▼

Purging Interval

7

Day(s) ▼

2. Go to Monitors page, select **Manage Monitor Groups**, enable the **DiskInfo** Group, and **Save** the changes. This pre-defined group contains pre-defined CSC's using the CSOs you enabled in the previous step.
3. Go to Monitors page, select the **DiskInfo** group that now displays at the bottom. You can see five new counters in that group that in various ways reference the CSOs that we just enabled (click the counter name and next 'Customize' as usually to see the javascript code). Customize those further as you want to do with any counter in SQL DM for MySQL.

