

## 15 ODBC monitoring

### 15.1 Overview

ODBC monitoring corresponds to the *Database monitor* item type in the Zabbix frontend.

ODBC is a C programming language middle-ware API for accessing database management systems (DBMS). The ODBC concept was developed by Microsoft and later ported to other platforms.

Zabbix may query any database, which is supported by ODBC. To do that, Zabbix does not directly connect to the databases, but uses the ODBC interface and drivers set up in ODBC. This function allows for more efficient monitoring of different databases for multiple purposes - for example, checking specific database queues, usage statistics and so on. Zabbix supports unixODBC and iODBC, which are the two most commonly used open source ODBC API implementations.

### 15.2 Installing unixODBC

The suggested way of installing unixODBC is to use the Linux operating system default package repositories. In the most popular Linux distributions unixODBC is included in the package repository by default. If it's not available, it can be obtained at the unixODBC homepage:

<http://www.unixodbc.org/download.html>.

unixODBC installation using the *yum* package manager:

```
shell> yum -y install unixODBC unixODBC-devel
```

The unixODBC-devel package is needed to compile Zabbix with unixODBC support.

### 15.3 Installing unixODBC drivers

A unixODBC database driver should be installed for the database, which will be monitored. unixODBC has a list of supported databases and drivers: <http://www.unixodbc.org/drivers.html>. In some Linux distributions database drivers are included in package repositories.

For example, a MySQL database driver can be installed using the *yum* package manager:

```
shell> yum install mysql-connector-odbc
```

### 15.4 Configuring unixODBC

ODBC configuration is done by editing the **odbcinst.ini** and **odbc.ini** files. To verify the configuration file location, type:

```
shell> odbcinst -j
```

**odbcinst.ini** is used to list the installed ODBC database drivers:

```
[mysql]
Description = ODBC for MySQL
Driver      = /usr/lib/libmyodbc5.so
```

Parameter details:

Attribute	Description
<i>mysql</i>	Database driver name.
<i>Description</i>	Database driver description.
<i>Driver</i>	Database driver library location.

**odbc.ini** is used to define data sources:

```
[test]
Description = MySQL test database
Driver      = mysql
Server      = 127.0.0.1
User        = root
Password    =
Port        = 3306
Database    = zabbix
```

Parameter details:

Attribute	Description
<i>test</i>	Data source name (DSN).
<i>Description</i>	Data source description.
<i>Driver</i>	Database driver name - as specified in odbcinst.ini
<i>Server</i>	Database server IP/DNS.
<i>User</i>	Database user for connection.
<i>Password</i>	Database user password.
<i>Port</i>	Database connection port.
<i>Database</i>	Database name.

To verify if ODBC connection is working successfully, a connection to database should be tested. That can be done with the **isql** utility (included in the unixODBC package):

```
shell> isql test
+-----+
| Connected!
|
| sql-statement
| help [tablename]
| quit
|
+-----+
```

SQL>

### 15.5 Compiling Zabbix with ODBC support

To enable ODBC support, Zabbix should be compiled with one of following flags:

```

--with-iodbc[=ARG]      use odbc driver against iODBC package
[default=no],
--with-unixodbc[=ARG]  use odbc driver against unixODBC package

```

See more about Zabbix installation from the [source code](#).

### 15.6 Item configuration in Zabbix frontend

Configure a database monitoring [item](#):

Item

Host	<input type="text" value="Zabbix server"/>	<input type="button" value="Select"/>
Name	<input type="text" value="MySQL host count"/>	
Type	<input type="text" value="Database monitor"/>	
Key	<input type="text" value="db.odbc.select[mysql-simple-check]"/>	<input type="button" value="Select"/>
Additional parameters	<div style="border: 1px solid #ccc; padding: 5px; min-height: 80px;">           DSN=test            user=zabbix            password=            sql=select count(*) from hosts;         </div>	
Type of information	<input type="text" value="Numeric (unsigned)"/>	

Specifically for database monitoring items you must enter:

<i>Type</i>	Select <i>Database monitor</i> here.
<i>Key</i>	Enter <b>db.odbc.select</b> [unique_description] The unique description will serve to identify the item in triggers etc.
<i>Additional parameters</i>	<b>DSN</b> - data source name (as specified in odbc.ini) <b>user</b> - database user name (optional if user is specified in odbc.ini) <b>password</b> - database user password (optional if password is specified in odbc.ini) <b>sql</b> - SQL query
<i>Type of information</i>	It is important to know what type of information will be returned by the query, so that it is selected correctly here. With an incorrect <i>type of information</i> the item will turn unsupported.

### 15.7 Important notes

- Zabbix does not limit the query execution time. It is up to the user to choose queries that can be executed in a reasonable amount of time.

- Starting from Zabbix 2.0.8 the **Timeout** parameter value from Zabbix server is used as the ODBC login timeout (note that depending on ODBC drivers the login timeout setting might be ignored).
- The query must return one value only.
- If a query returns more than one column, only the first column is read.
- If a query returns more than one line, only the first line is read.
- The SQL command must begin with **select**.
- The SQL command mustn't contain any line breaks.
- See also [known issues](#) for ODBC checks

## 15.8 Error messages

Starting from Zabbix 2.0.8 the ODBC error messages are structured into fields to provide more detailed information. Example:

```
Cannot execute ODBC query:[SQL_ERROR]:[42601][7][ERROR: syntax error at or
near ";"; Error while executing the query]|
-----|-----
|
|
|- error message. | - Native error code
| |
| | - Record separator
| |
| - SQLState
|- Zabbix message | - ODBC return code
```

Note that the error message length is limited to 128 bytes, so the message can be truncated. If there is more than one ODBC diagnostic record Zabbix tries to concatenate them as far as the length limit allows.

From:  
<https://www.zabbix.com/documentation/2.0/> - **Zabbix Documentation 2.0**

Permanent link:  
[https://www.zabbix.com/documentation/2.0/manual/config/items/itemtypes/odbc\\_checks](https://www.zabbix.com/documentation/2.0/manual/config/items/itemtypes/odbc_checks)

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