

The optimal way how to get the total MS SQL server's performance is to measure time of an operation, which is similar to the one executed by the application running over MS SQL. In other words, query the SQL server for certain information, or make unified operations directly in the application's database (we assure you, that these are absolutely safe toward data in the database and application)

There are two "performance" templates for measuring of time over MS SQL available :

1. MS SQL Query Response time - measures time of operation sequence :

connection to the database,

requesting system time from the SQL server

disconnection from the SQL server

[Setup procedure \(below in the article\)](#)

2. MS SQL Query Response time with table - measures time of operation sequence :

connection to the database,

creation of a table with 300 rows and 5 columns, which it'll fill with the current date

deletes this table

disconnection from the database

[Setup procedure \(below in the article\)](#)

1. Setup procedure to MS SQL Query Response time

Watch measures time of this operation sequence *meria čas sledu operácií* :

connection to the database,

requesting system time from the SQL server

disconnection from the SQL server

The result (value) is the time of operations in milliseconds, which is transferred for view and history archivation to CM Portal. A great value is around 50ms, but it may vary according to HW and version of the SQL server. Even a response higher by just +20% indicates a significant load, since the test consists of relatively quickly executable operations. You should empirically determine the value, at which your applications run fast, and when the system is getting slow, and set the Watch's limit value accordingly.

Watch Wizard

Add condition for "SQL response for time"

Performance

- ☐ Memory usage
- ☐ CPU usage
- ☐ Disk activity
- ☐ Disk read / write queue length
- ☐ Network adapter usage
- ☐ Process usage (memory, CPU)
- ☐ Performance counters
- ☐ Transferred speed in LAN, Harddrives
- ☐ Transferred speed of FTP
- ☐ Internet IP trafic (transfer speed)
- ☐ Internet IP transferred data
- ☒ Preddefined performance templates

- General performance v1.0
- MS SQL Query response time v1.0**
- MS SQL Query with table resp.time v1.0
- SQL Memory, Page splits, Users v1.1
- SQL Trans. and Deadlocks v1.1
- Terminal active sessions
- POP3
- HTTP, HTTPS
- Exists file
- Exists directory
- Accessible directory
- Current IP
- Network presented

Health of systems

- ☐ EventLog Events Count (for Windows Vista and newer)
- ☐ Free space on disk
- ☐ Service status
- ☐ Loaded Device Driver
- ☐ Running process
- ☐ E-Mail looping test (SMTP -> POP3)
- ☐ Ping RTT (response time)
- ☐ Ping packet loss
- ☐ File size
- ☐ Files size in directory
- ☐ Files count in directory
- ☐ Start / Restart OS
- ☐ Windows running time
- ☐ Hardware Monitoring
- ☐ HW monitoring of server (HP, DELL, FUJITSU)
- ☐ LINUX monitoring
- ☐ Environment Monitoring (snmp)
- ☐ Environment Monitoring (http)
- ☐ Preddefined health templates

Security

- ☐ Running user process
- ☐ Unauthorized admin process
- ☐ LoggedOn user

Time limitations

- ☐ Date
- ☐ Day of Week
- ☐ Time
- ☐ Time Range

Custom conditions

- ☐ SNMP
- ☐ CHAT
- ☐ CHAT Variable
- ☐ CHAT Numeric Variable
- ☐ CHAT Vector Variable

Use state of another Watch

- ☐ Watch state

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Cancel

Image: Výber šablóny v sprievodcovi Watches v C-MonitorConsole pre meranie odozvy s príkazom timestamp

Watch Wizard

MS SQL Query response time v1.0

Script Name
MS SQL Query response time v1.0

Script

Parameter	Value
MSSQL query test	☒
MSSQL path to vbs-script	.\\Cn\\SWL_templates\\SQL_VBS\\mssql_query.vbs
Windows\\Server authentication	☒
Server	SERVER\\SQLEXPRESS
DataBase	namedb
Query for Database	SELECT CURRENT_TIMESTAMP
User	test
Password	XXXXXXXXXXXXXXXXXXXX

Test, Edit Script

Operation: Successful Test Period: 5 Unit: min

Value from this condition send to CM server
☐ Always
☒ Never

☐ Assess the state of watch

< Back Next > Cancel

Image: Políčka pre zadanie názvu SQL servera, názvu databázy, prístupových údajov. Pokračujte pretestovaním skriptu a zadaných údajov

You must choose name of the SQL server, or instance, according to type of installation. For the first SQL instance with default configuration, type one of these alternatives into the field Server :

1. **server's network name**

2. **server's network name\ name of instance** (the instance name, if there's only one, is usually MSSQLSERVER or SQLSERVER or possibly SQLEXPRESS).

For other instances, write name of the service for the SQL server's instance in the form MSSQL\$instance_name.

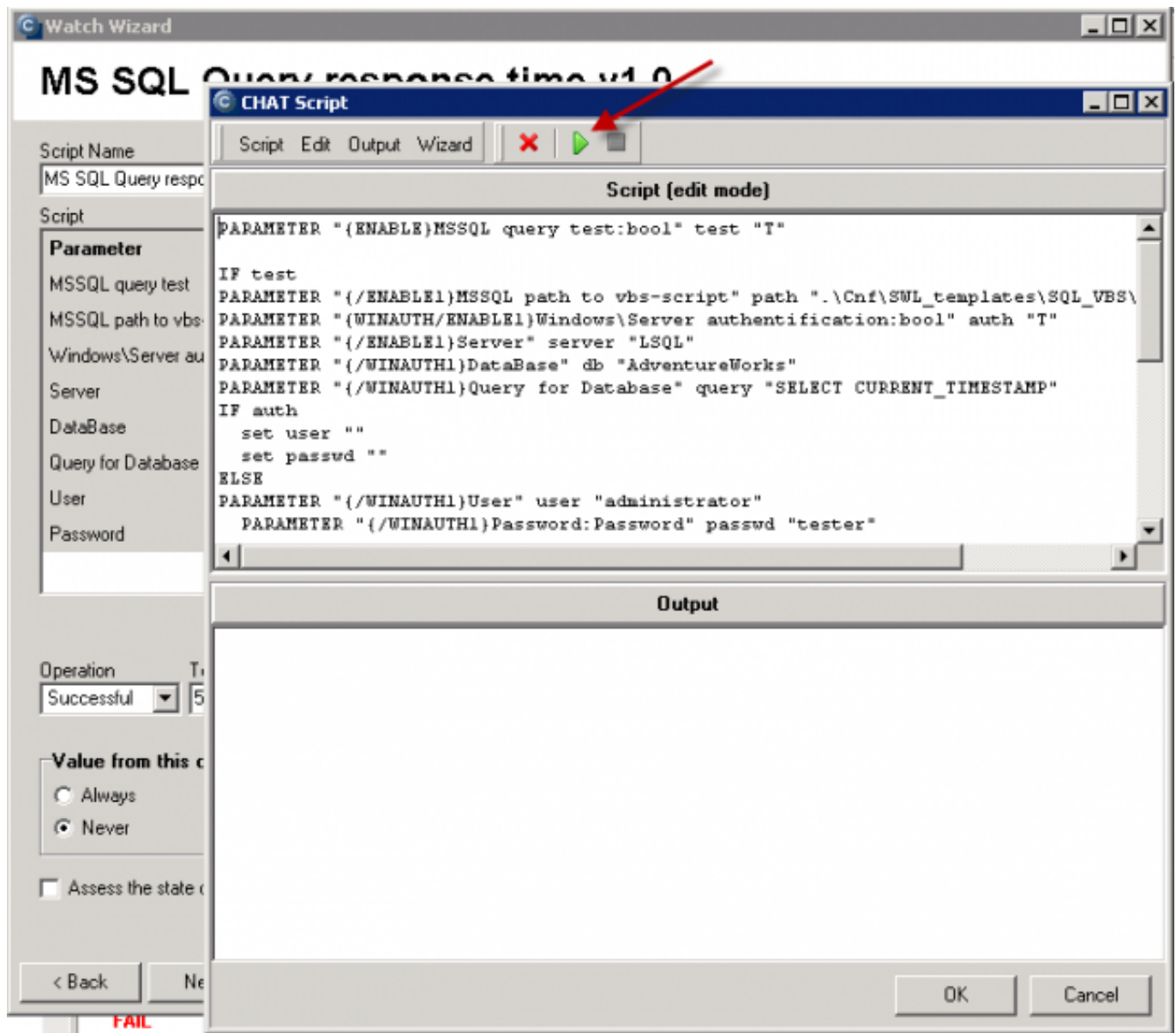


Image: Spustenie skriptu (zelenou šípkou)

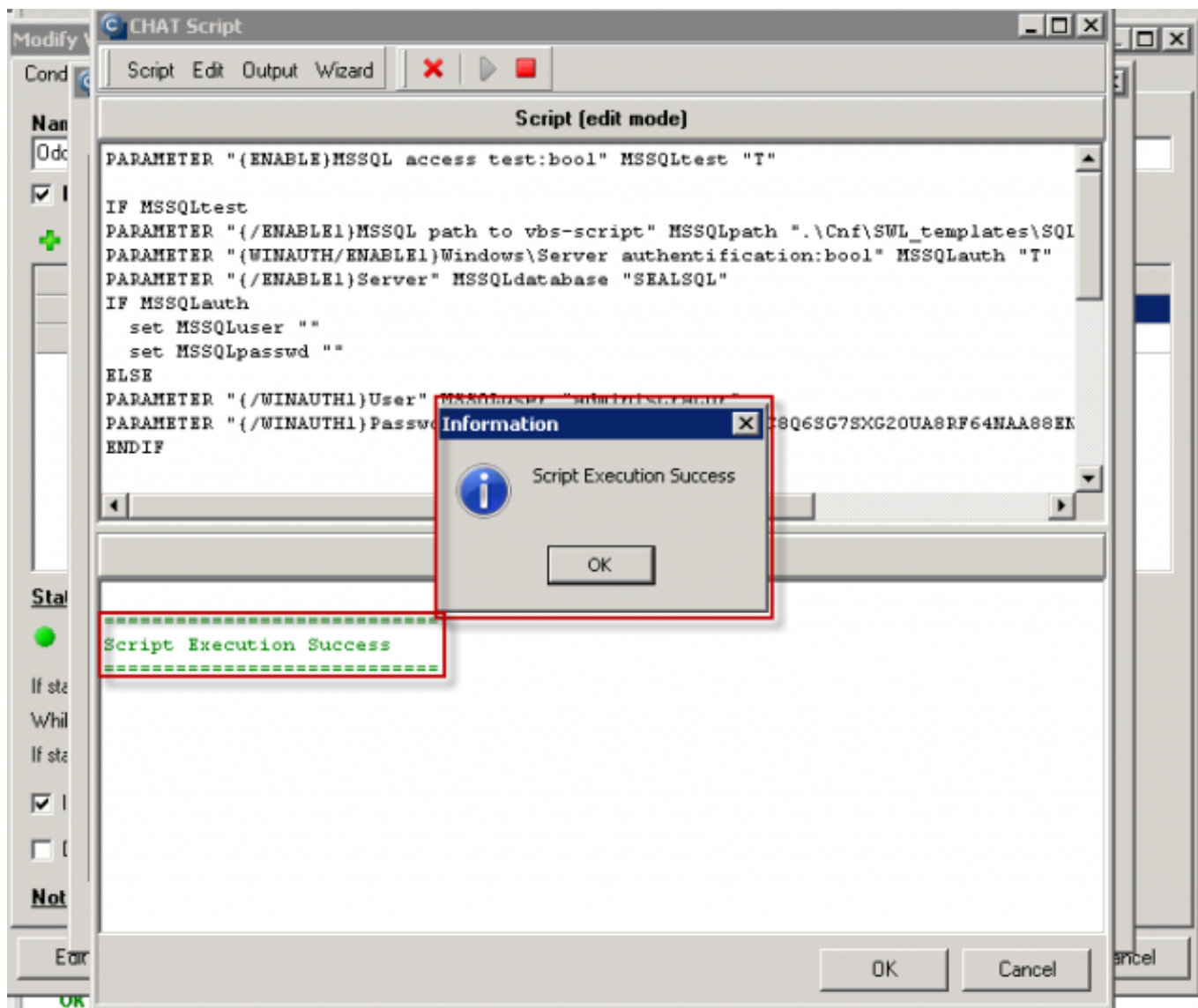


Image: Odkomunikované očakávané úspešné spustenie skriptu. Ak sa vám vyskytne chyba, reagujte podľa vypísanej chyby, obvykle je dobre zalogovaná.

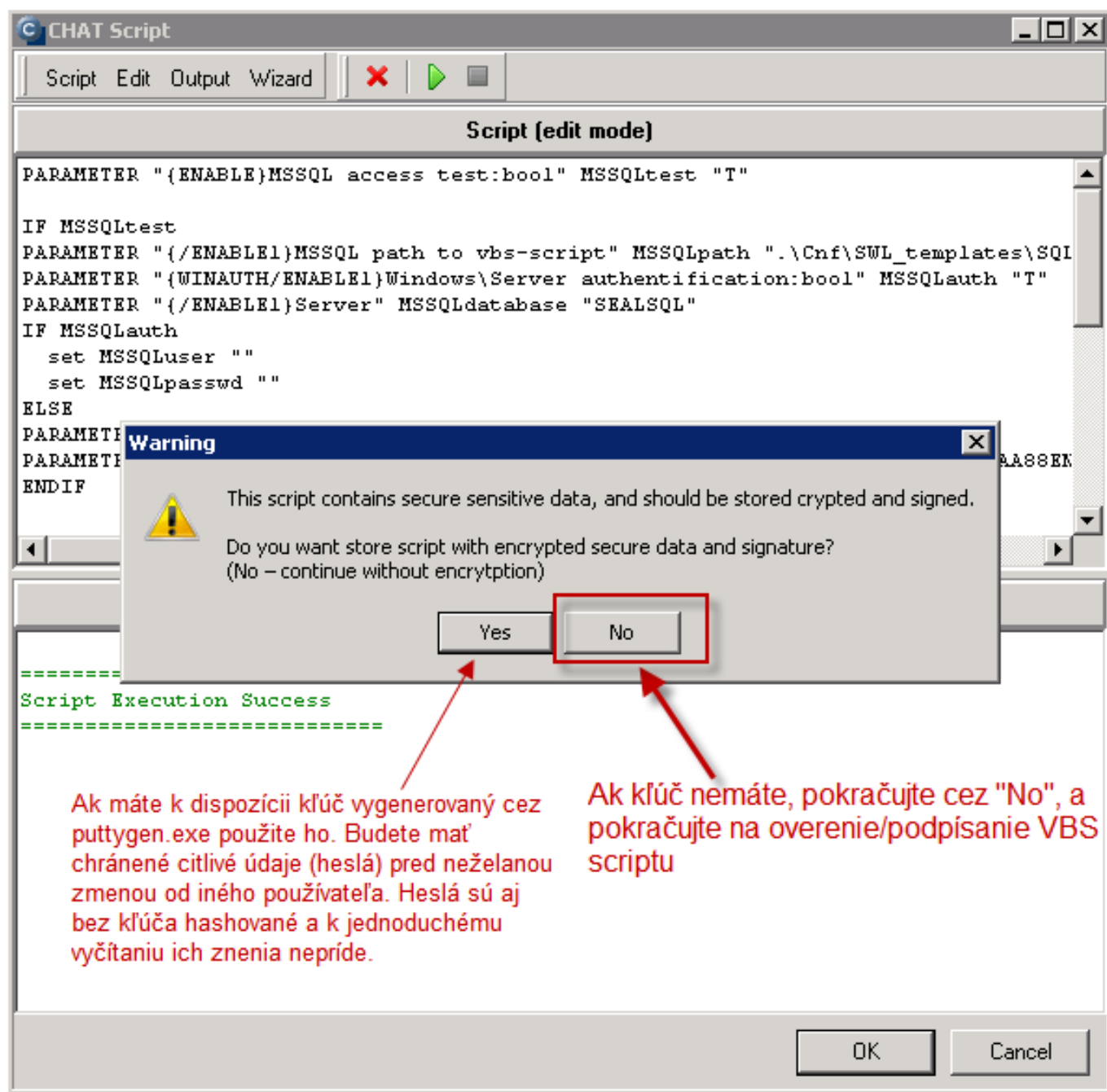


Image: Keďže v skripte sú uložené heslá, C-Monitor ponúka ich zakryptovanie pomocou kľúča (môžete ho získať napríklad cez Puttygen rovnakým spôsobom ako keď generujete kľúč pre SSH komunikáciu). Ak ho nemáte, použije sa hashovanie v rámci C-Monitora, čo ako zákl

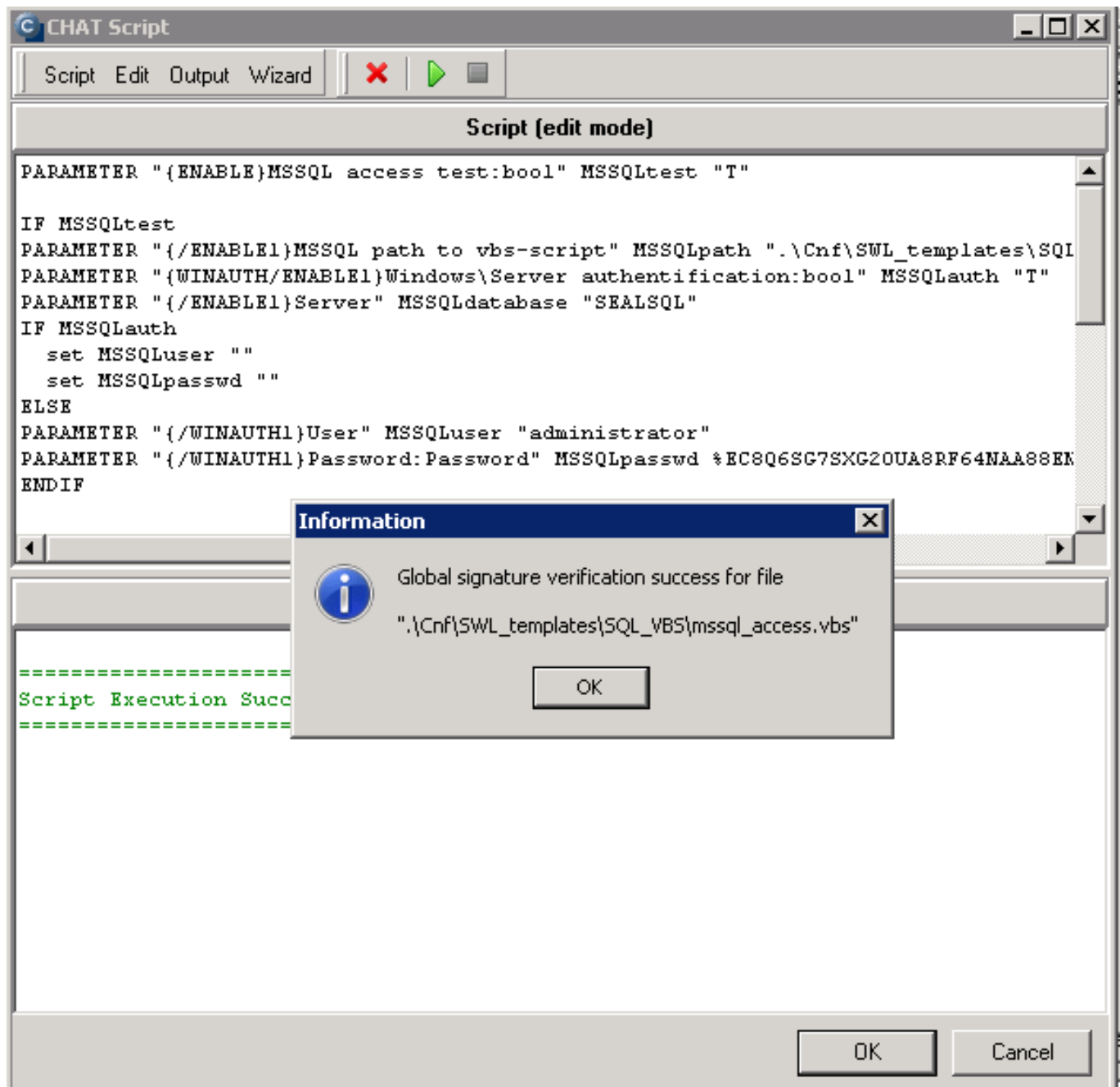


Image: V ďalšom kroku sa overuje, či máte podpísaný VBS skript, aby ho niekto nenahradil. Ak podpis chýba, automaticky sa vyžiada jeho doplnenie (musíte byť prihlásený ako administrátor).

Watch Wizard

Conditions for "response for timestamp"

- Successful CHAT MS SQL Query response time v1.0
Check every 5min
None value will be sent to CM Server
- CHAT Var. "RTMS" (MSSqlQueryTime_ms) < 1000
Check on each watch state evaluation
Value will be sent to CM Server only if change to last sent value is more than 10

Buttons: Add Condition, Edit Condition, Delete Condition

State of watch is **OK** if all conditions are true **FAIL** - if at least one condition is false

☐ Delay for FAIL state. (Useful for supressing short term FAIL state)

Hide Advanced Options

☒ If state of the watch is UNKNOWN, notify this by options in actions

☐ Evaluate watch state with longer period than 30s (specified by C-Monitor license)

Note: Watches are active from 5 min after the operating system start

Buttons: < Back, Next >, Skip Actions >>, Cancel

Image: Ďalšie nastavenie je už identické ako akýkoľvek iný Watch, nastavte akcie alebo ukončíte nastavovanie bez akcií.

Watches (Online monitoring)

Spoločnosť	Počítač & Umiestnenie	Zoradiť podľa	Zoradiť Watches podľa	Rozvyhla	Prípad
Meno Watchu	Current status	Zoradiť ako	Vzostupne	Zoradiť Watches ako	Vzostupne
Operátor	Zobrazíť	Pod sebou	☒ True ☒ False ☒ Unknown	☐ Vypnúť watche	☐ Len online PC

Stav	Názov	Parametre	Posledná kontrola	Posledná hodnota	Posledný dátum	Akcia
OK	response for timestamp	MSSqlQueryTime_ms < 1000	9. Mar 2013 10:35:02	TRUE - because all conditions are true TRUE - successful CHAT "MS SQL Query response time v1.0" (MSSQL 12.18.52 PM) TRUE - CHAT Var. "RTMS" : MSSqlQueryTime_ms (62) < 1000	9. Mar 2013 12:21:31	Editať

Image: Ukážka nameranej hodnoty na CM portáli

2. Setup procedute to MS SQL Query Response time with table (table operations)

measures time of this operation sequence :

- connection to the database,
- creation of a table with 300 rows and 5 columns, which it'll fill with the current date*
- deletes this table*
- disconnection from the database

The result (value) is the time of operations in milliseconds, which is transferred for view and history archivation to CM Portal. A great value is around 100ms. When the SQL server is loaded, the value can reach up to 500ms, which already signalizes reaction slowdown of the application that runs on the given server.

This section only describes the differences toward the above stated procedure. The main difference is that work with the table is realized by an SQL procedure, which has to be imported to the SQL server. The procedure is distributed in a C-Monitor installation file stored at
drive:\CMonitor\Cnf\SWL_templates\SQL_VBS\sql_table_procedure_v1xx.sql.

Import of the procedure to the SQL server

1. Open SQL management console
2. In hierarchy of SQL objects to SQL server, go to server / databases / **your_database** / Programmability / Stored Procedures
3. Doubleclick to open procedure
drive:\CMonitor\Cnf\SWL_templates\SQL_VBS\sql_table_procedure_v1xx.sql.
4. Press Execute
5. Refresh the tree and check if this procedure was added under your database into Stored Procedures
dbo.TestDBCMonitor1
4. Close SQL management console

Tip : It might occur, that the procedure will be saved under System databases / Master. You should then open the procedure's file from C-Monitor
- **sql_table_procedure_v1xx.sql** and use the command USE in the first line.

The original text is :

-- *USE name_of_tested_database (insert only if needed and delete double dash at start of this row)*

rewrite it to :

USE name_of_your_database

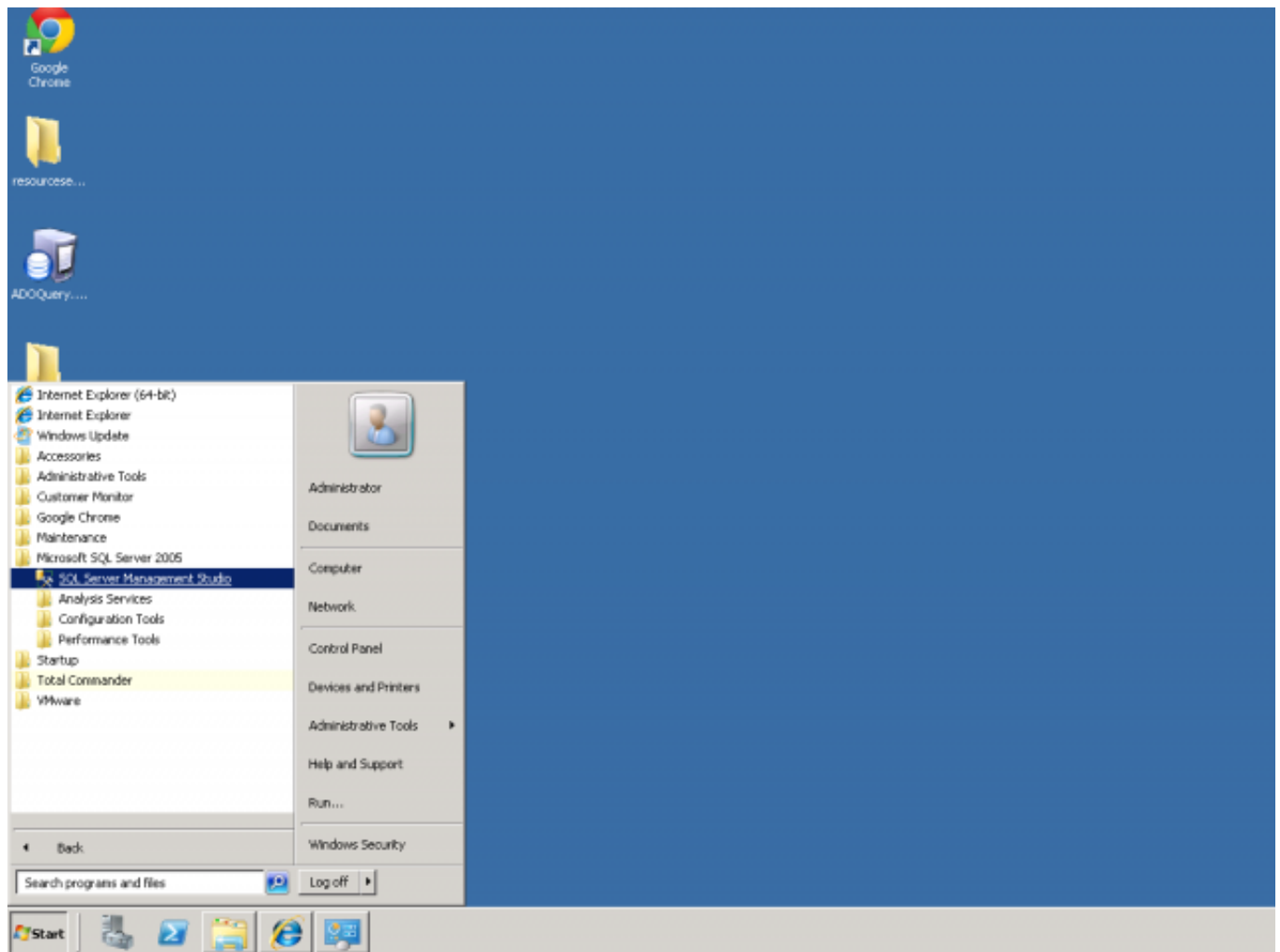


Image: Otvorenie SQL manažment konzoly

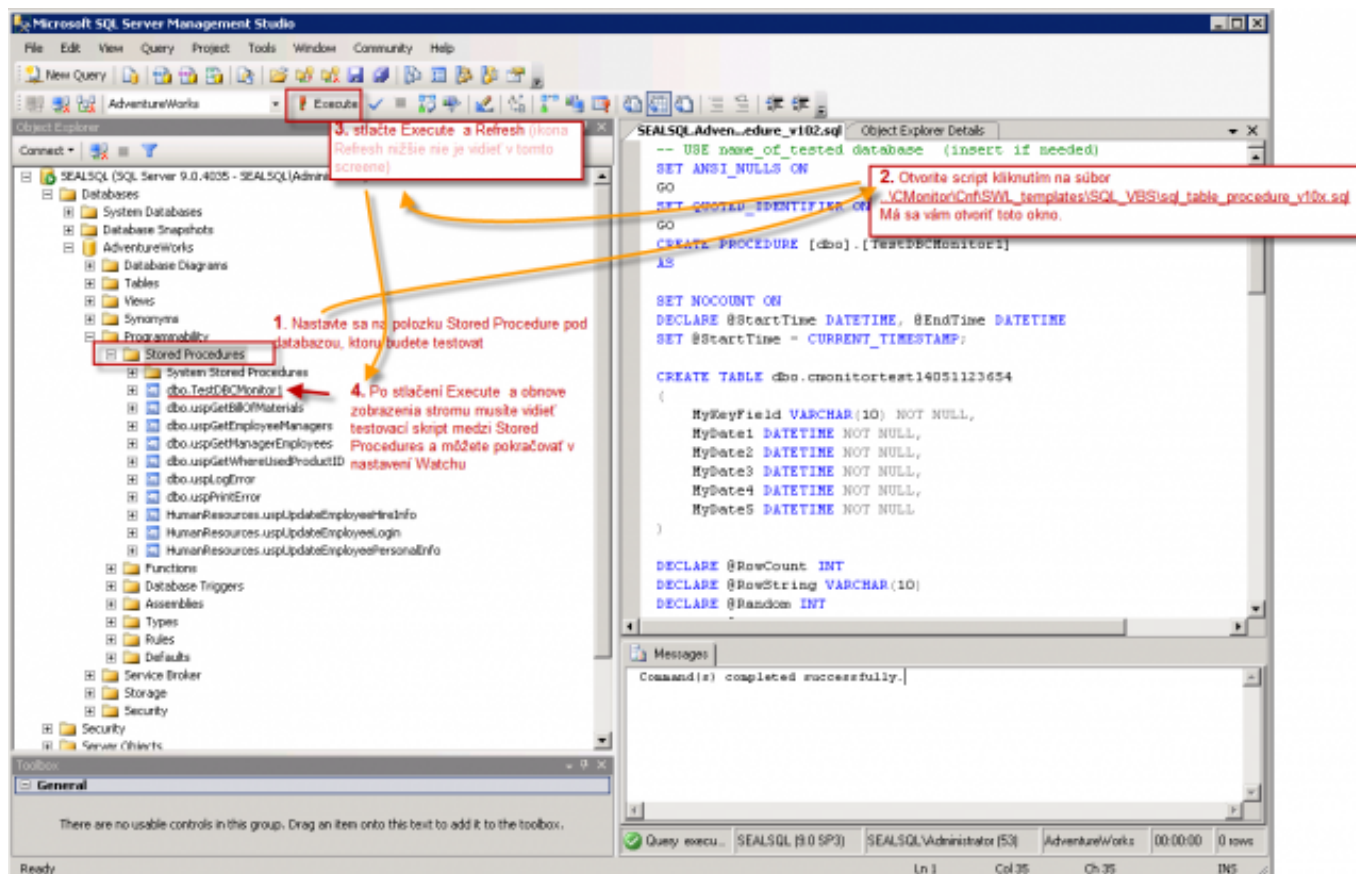


Image: Postup ako importovať testovaciu SQL procedúru

Continuation of Watch settings is the same as in the first case

Only the template selection is different, other steps are identical

Watch Wizard

Add condition for "response for SQL table test"

Performance

- ☐ Memory usage
- ☐ CPU usage
- ☐ Disk activity
- ☐ Disk read / write queue length
- ☐ Network adapter usage
- ☐ Process usage (memory, CPU)
- ☐ Performance counters
- ☐ Transferred speed in LAN, Harddrives
- ☐ Transferred speed of FTP
- ☐ Internet IP trafic (transfer speed)
- ☐ Internet IP transferred data
- ☒ Preddefined performance templates

General performance v1.0
MS SQL Query response time v1.0
MS SQL Query with table resp time v1.0
SQL Memory, Page splits, Users v1.1
SQL Trans. and Deadlocks v1.1
Terminal active sessions
POP3
HTTP, HTTPS
Exists file
Exists directory
Accessible directory
Current IP
Network presented

Health of systems

- ☐ EventLog Events Count (for Windows Vista and newer)
- ☐ Free space on disk
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- ☐ Loaded Device Driver
- ☐ Running process
- ☐ E-Mail looping test (SMTP -> POP3)
- ☐ Ping RTT (response time)
- ☐ Ping packet loss
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- ☐ Windows running time
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- ☐ HW/ monitoring of server (HP, DELL, FUJITSU)
- ☐ LINUX monitoring
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- ☐ Environment Monitoring (http)
- ☐ Preddefined health templates

Security

- ☐ Running user process
- ☐ Unauthorized admin process
- ☐ LoggedOn user

Time limitations

- ☐ Date
- ☐ Day of Week
- ☐ Time
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Custom conditions

- ☐ SNMP
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Use state of another Watch

- ☐ Watch state

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Cancel

Image: Výber šablóny v sprievodcovi Watches v C-MonitorConsole pre meranie odozvy s tabuľkovým testom

Watch Wizard

MS SQL Query with table resp.time v1.0

Script Name
MS SQL Query with table resp.time v1.0

Script

Parameter	Value
MSSQL query test	☒
MSSQL path to vbs-script	.\Cnf\SWL_templates\SQL_VBS\mssql_query.vbs
Windows\Server authentication	☒
Server	SERVER\SQLEXPRESS
DataBase	namedb
Query for Database	EXEC dbo.TestDBCMonitor1
User	test
Password	XXXXXXXXXXXXXXXXXXXX

Test, Edit Script

Operation: Successful Test Period: 5 Unit: min

Value from this condition send to CM server

☐ Always

☒ Never

☐ Assess the state of watch

< Back Next > Cancel

Image: Zadajte SQL server (voľba názvu je popísaná v prípade vyššie), názov databázy, prístupové údaje

Continue according to the above stated procedure.

Spoločnosť	Počítač & Umiestnenie	Zoradiť podľa	OH-D	Zoradiť Watches podľa	Rozvrhu	Hľadať
Meno Watchu	Current status	Zoradiť ako	Výstupu	Zoradiť Watches ako	Výstupu	
Operátor	Zobrazíť	Pod sebou	☒ True ☒ False ☒ Unknown	☐ Vypnúť watche	☐ Len online PC	

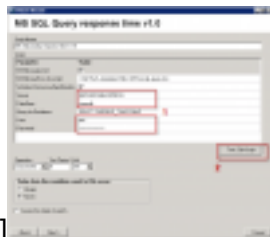
Watches (Online monitoring)	Status	Last check	Details
response for SQL table test	OK - because all conditions are true TRUE - successful CHAT 'MS SQL Query with table resp time v1.0' (3/9/2013 1:26:52 PM) TRUE - CHAT Var. 'RTMS': MSSQLQueryTime_ms (105) < 1000	9. Mar 2013 10:41:02	BEASV10 LSQL KDC 9. Mar 2013 13:30:04 Edit
response for timestamp	OK - because all conditions are true TRUE - successful CHAT 'MS SQL Query response time v1.0' (3/9/2013 12:34:52 PM) TRUE - CHAT Var. 'RTMS': MSSQLQueryTime_ms (62) < 1000	9. Mar 2013 10:35:02	BEASV10 LSQL KDC 9. Mar 2013 13:30:04 Edit

Image: Ukážka nameraných údajov na CM portáli

Date:
03/06/2013



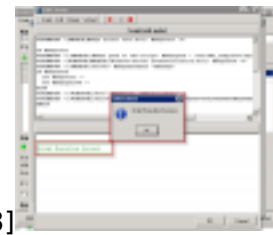
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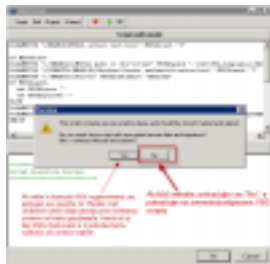
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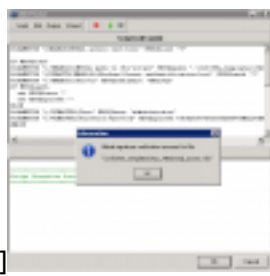
[3]



[4]



[5]



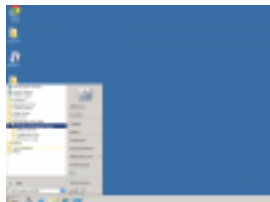
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[7]



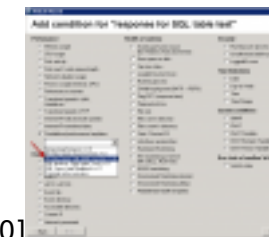
[8]



[9]



[10]



[11]



[12]



[13]

Links

- [1] https://customermonitor.co/sites/default/files/SQL_Response_time_Wizard01.png
- [2] https://customermonitor.co/sites/default/files/SQL_Response_time_Wizard02_insert_data.png
- [3] https://customermonitor.co/sites/default/files/SQL_Response_time_Wizard03_run_script.png
- [4] https://customermonitor.co/sites/default/files/SQL_Response_time_Wizard04_run_script.png
- [5] https://customermonitor.co/sites/default/files/SQL_Response_time_Wizard05_signing_with_key.png
- [6] https://customermonitor.co/sites/default/files/SQL_Response_time_Wizard06_signature_for_VBS.png
- [7] https://customermonitor.co/sites/default/files/SQL_Response_time_Wizard07_continue_with_or_without_settings_of_actions.png
- [8] https://customermonitor.co/sites/default/files/SQL_Response_time_CM_Potal_ukazka_0.png
- [9] https://customermonitor.co/sites/default/files/Spustenie_SQL_server_management_studio_0.png
- [10] https://customermonitor.co/sites/default/files/Otvorenie_skriptu_v_SQL_studiu_a_Execute02_0.png
- [11] https://customermonitor.co/sites/default/files/SQL_Response_table_Wizard01_template_selection.png
- [12] https://customermonitor.co/sites/default/files/SQL_Response_table_Wizard02_insert_data.png
- [13] https://customermonitor.co/sites/default/files/SQL_Response_table_CM_Potal_ukazka.png