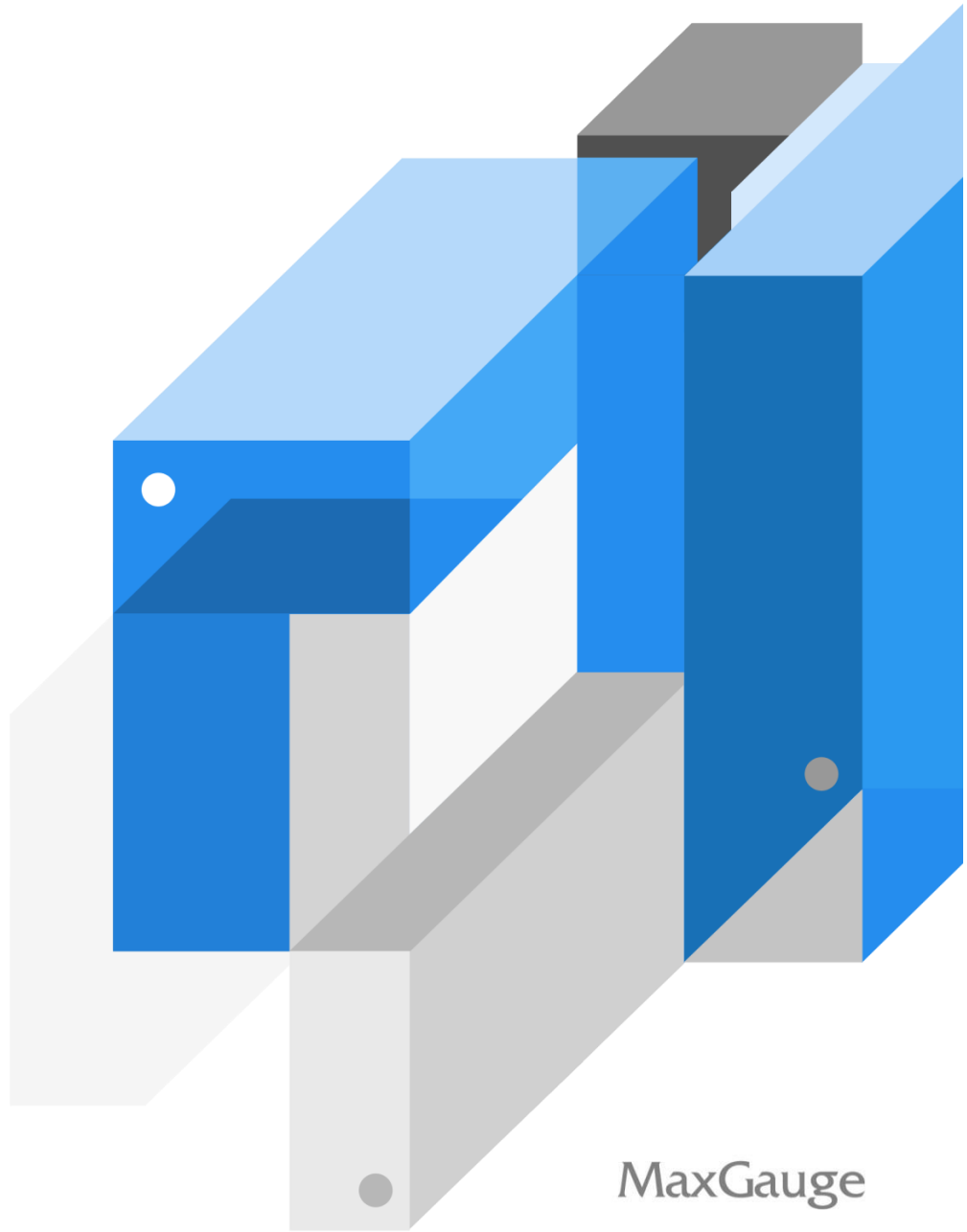


MFS 4.2

Install Guide



MaxGauge

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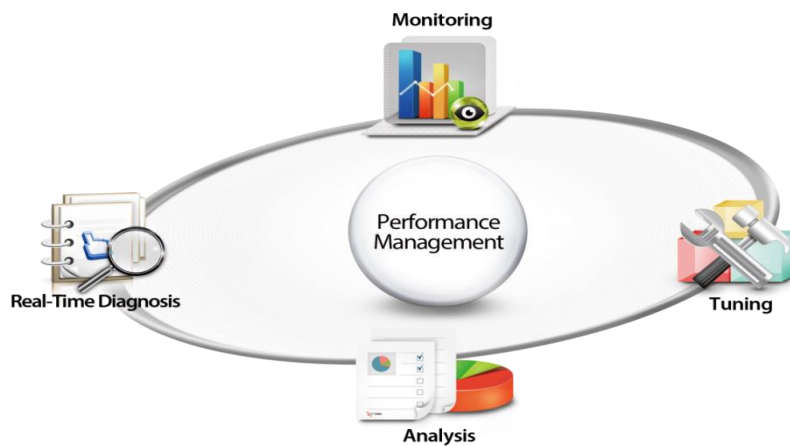
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MFS OVERVIEW

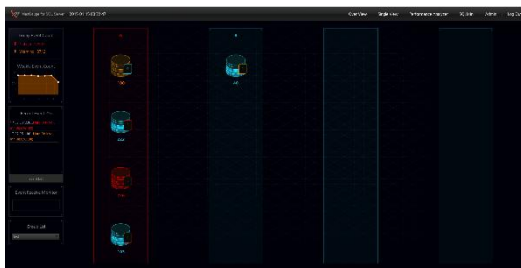
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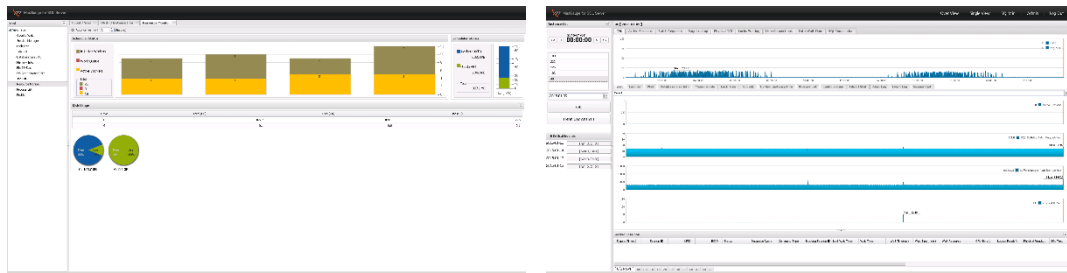
1. MFS Overview

MaxGauge for SQL Server(MFS) is a specialized tool for SQL server database management system with features such as real time monitoring and system activity data collection, diagnosis and analysis, performance tuning, and system availability, all of which are a vital support for an effective performance management.

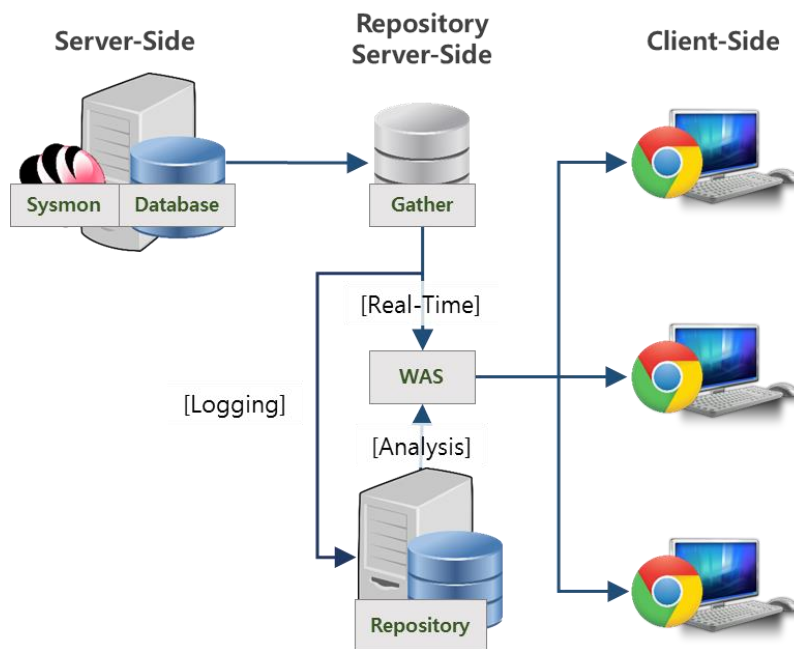


MFS uses a web-based 3-tier access that collects database system's entire operation history with minimal load. Real time monitoring feature is possible through our Dashboard or the Single View. Furthermore, the system activity data collected in the repository can be checked with our Performance Analyzer for performance analysis or problem analysis from anywhere, at anytime





Architecture



SQL Server Server-Side

The SQL Server Server-Side means the target monitoring tier from which the Gather collects performance data. The performance management data is collected by MaxGauge's procedures and queries, and the OS Data is collected by MaxGauge's Sysmon Agent. Once the sysmon agent is installed, it will automatically registered to 'services'.

Repository Server-Side

Repository Server-side means a log collection tier which stores the SQL server's performance and session data, and this is composed of the Gather, Web Application Server (WAS), and the Repository DB (SQL Server). The database performance management data collected by the Gather and the OS performance management data collected by Sysmon Agent are delivered to WAS in real time. The WAS transfers and saves the collected performance management data into the Repository Database. The WAS provides real time monitoring data to the Client-Side, and also transfers performance management data to the Repository Database for post analysis.

Client-Side

On the Client-Side tier, user can monitor system activity data provided by WAS using web browser.

Repository Server Specifications and Configuration Settings

OS

- Windows 7 or higher, Windows Server 2008 or higher (x86 / x64)

Hardware

- CPU : 2 Cores (Minimum) / 4 Cores or more (Recommended)
- RAM : 4 GB (Minimum) / 8 GB or more (Recommended)
- Disk : 20GB (For 30-days of historical data retained period.)
(For 500MB per day for one SQL server. The historical size depends upon the system usage.)

Network

- Sysmon TCP Port Settings: 9729 Port by default (Server-Side, Port number can be changed upon user needs)
- WAS Port Settings: 8090 Port by default (Repository-Side, Port number can be changed upon user needs)

SQL SERVER SIDE CONFIGURATION

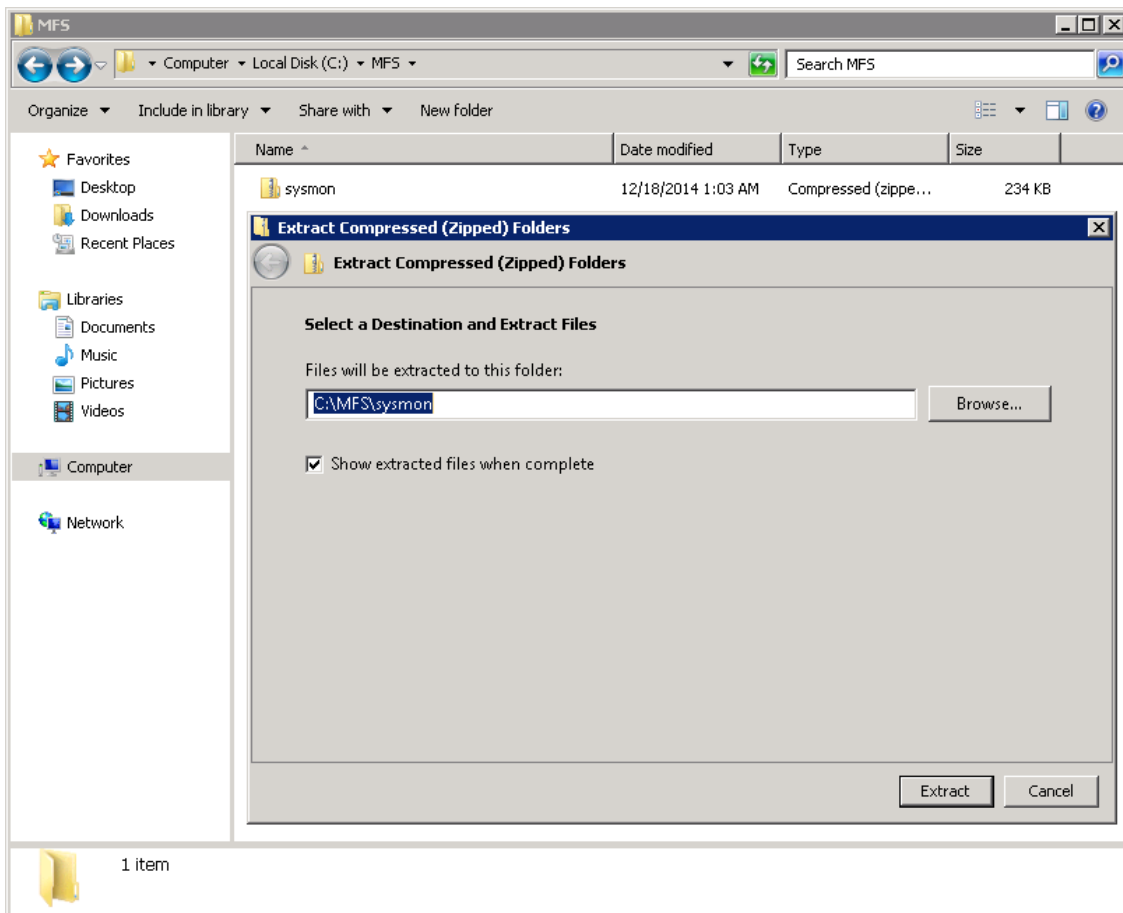
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2. SQL Server Side Configuration

Sysmon

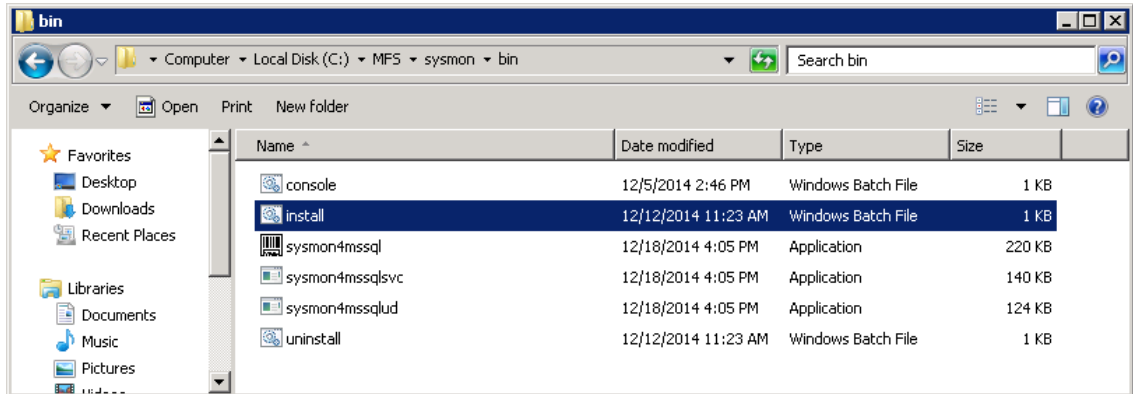
Installing Sysmon Agent

1. Upload and unzip installation file



Unzip the compressed installation file (sysmon.zip).

2. Install Sysmon to Services



Run the install.bat file from the bin folder which is a sub-folder in the unzipped sysmon folder.

3. Check the services are running

Name	Description	Status	Startup Type	Log On As
EXEM Sysmon For MSSQL Service		Started	Automatic	Local System

Once the installation is done, open the services.msc to check if the EXEM Sysmon for SQL Service database management system is running or not.

REPOSITORY SERVER-SIDE INSTALLATION

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3. Repository Server-Side Installation

Repository Database

Installing SQL Server

MFS collects the performance management data and saves them in the Repository Database. The Repository Database is based of SQL Server and also supports SQL Server Express edition. However, there are a few restrictions with the SQL Server Express edition which depends on the server's usage. It is recommended to use less than 3 instances logged in with the Express version.

Limits of SQL Server Express for Each Version

	2008	2008R2	2012(Recommended)	2014(Recommended)
CPU	1 core	1 core	Limited to less than 1 Socket or 4 cores	Limited to less than 1 Socket or 4 cores
RAM	1 GB	1 GB	1 GB	1 GB
DB Size	4 GB	10 GB	10 GB	10 GB

If the Express edition is used as a Repository database, it is recommended to use 2012 or higher versions for best performance.

Operating Systems Supporting the SQL Server 2012 Express

- Window 7
- WindowServer2008R2
- WindowServer2008 Service Pack 2
- WindowVista Service Pack 2

Note. Download : <http://www.microsoft.com/en-US/download/details.aspx?id=29062>

Operating Systems Supporting the SQL Server 2014 Express

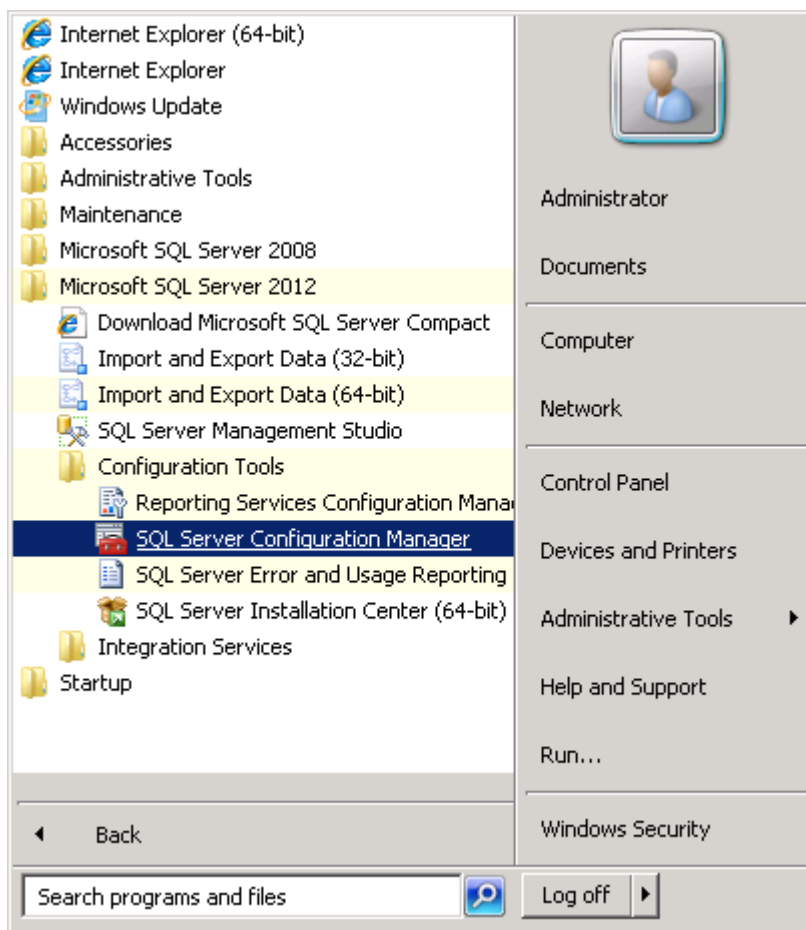
- Window7
- Window7 Service Pack 1
- Window 8

- Window 8.1
- Window Server 2008 R2
- Window Server 2008 R2 SP1
- Window Server 2012
- Window Server 2012 R2

Note. Download : <http://www.microsoft.com/en-US/download/details.aspx?id=42299>

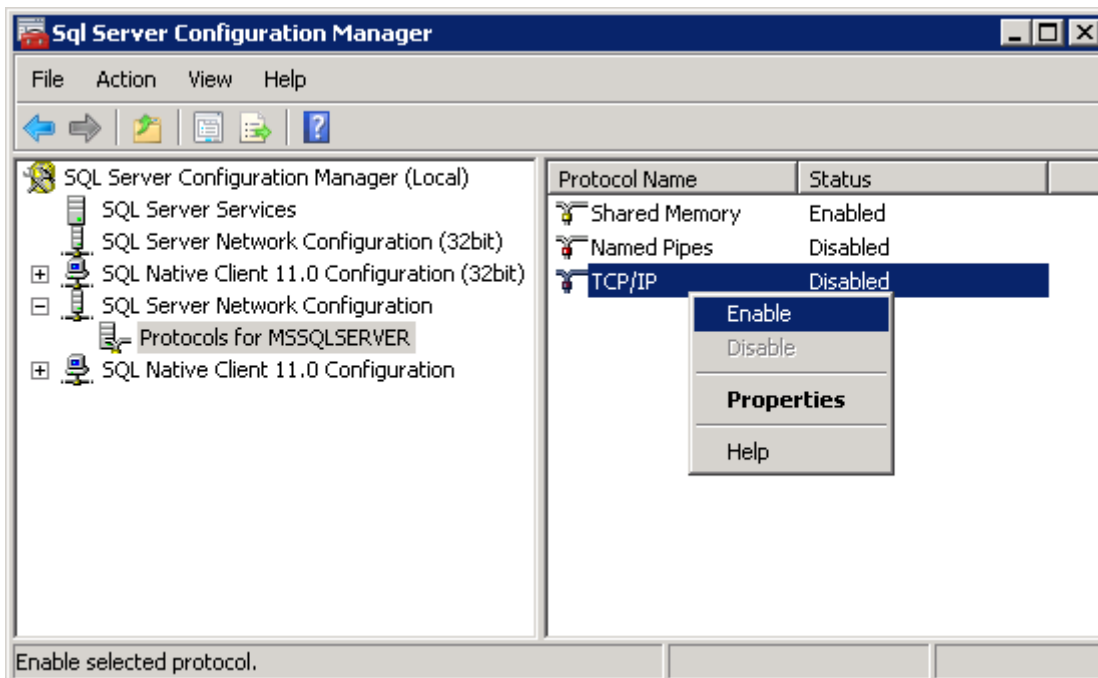
The TCP/IP access is disabled by default on the SQL Server Express version. Follow the steps below to configure the TCP/IP.

1. . Click on SQL Server Configuration Manager



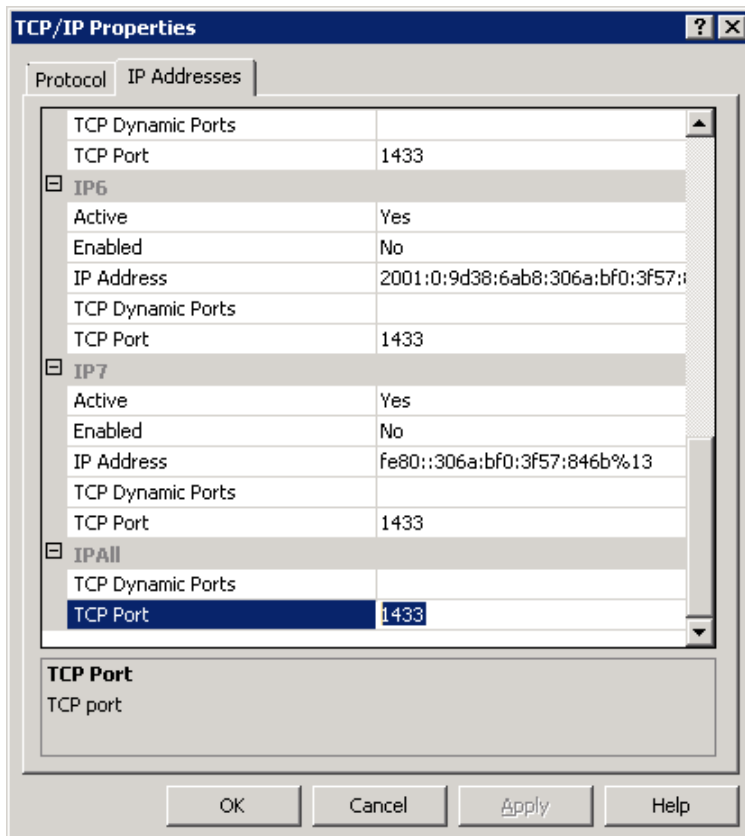
To set up the connections, run the SQL Server Configuration Manager.

2. Enable the Protocols of TCP/IP



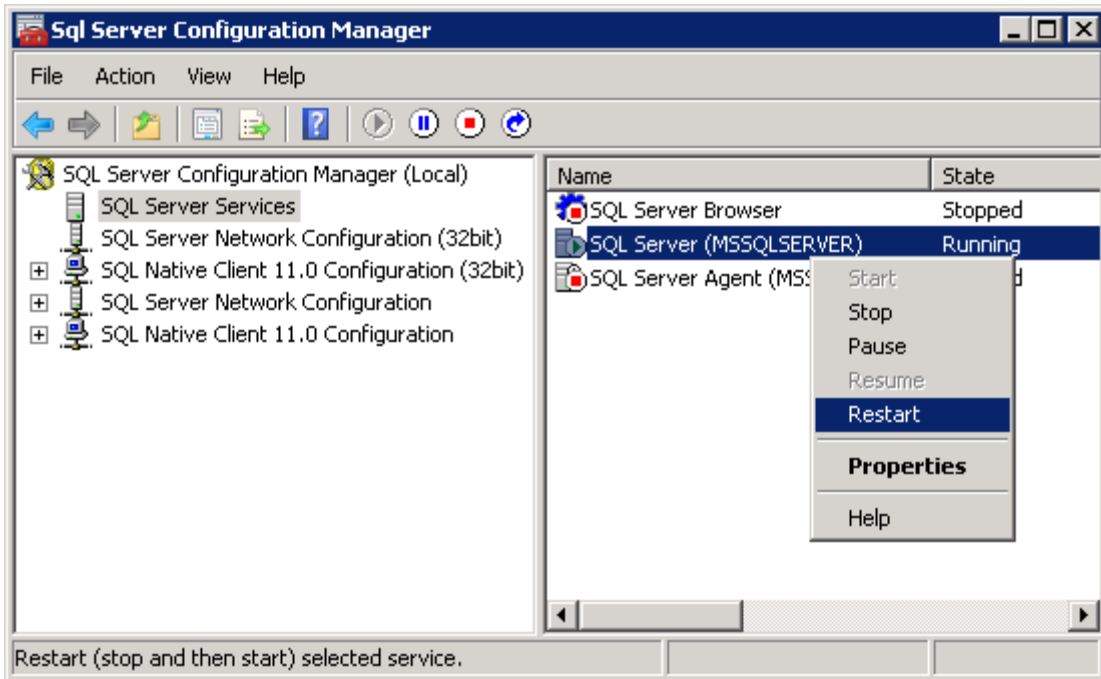
SQL Server Configuration Manager > SQL Server Network Configuration > Protocols for [Instance name] > Enable the TCP/IP.

3. Set the TCP/IP value with Port 1433



TCP/IP Properties > Check the TCP Port in IP Addresses Tab. The TCP Port is set to 1433 by default and it can be changed per user needs.

4. Restart SQL Server Services

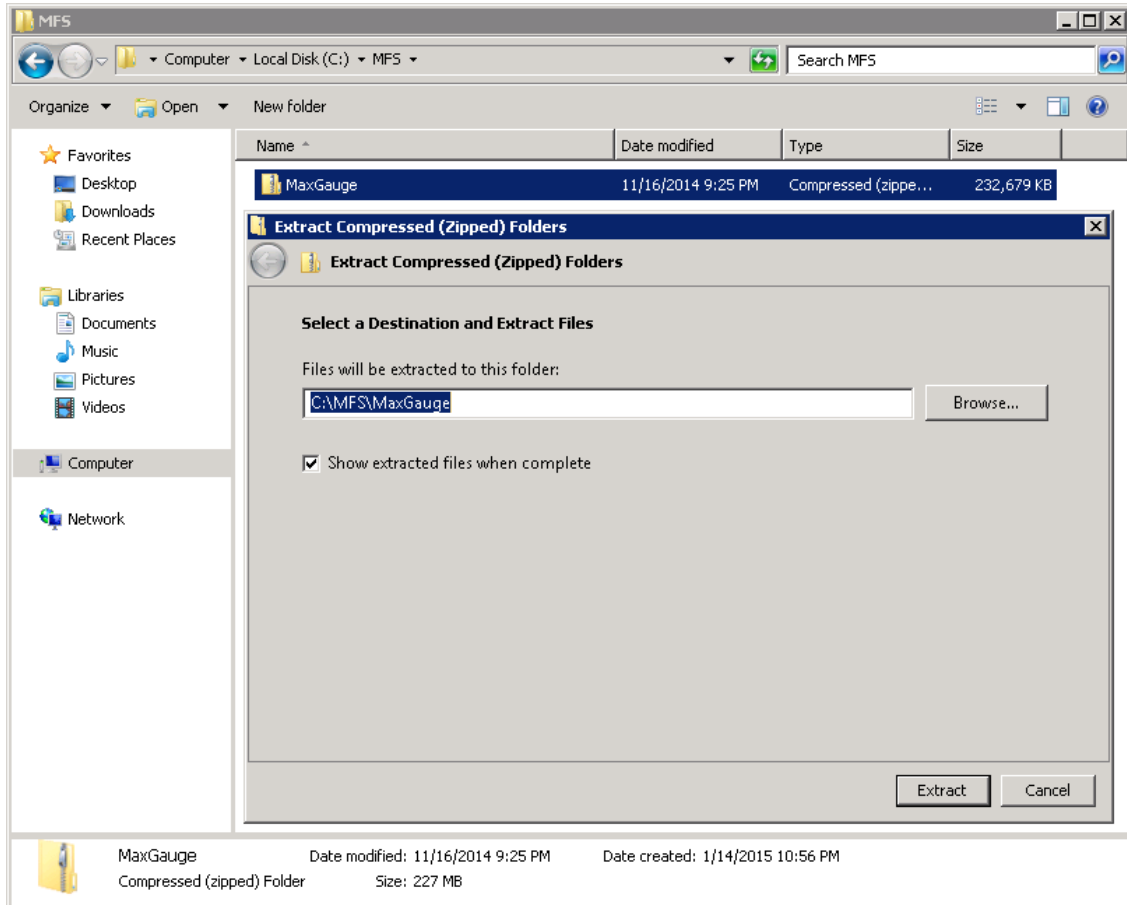


The new settings will take effect only after you have restarted the SQL Server. Once you are finished with configuration, restart the SQL Server.

WAS & Gather

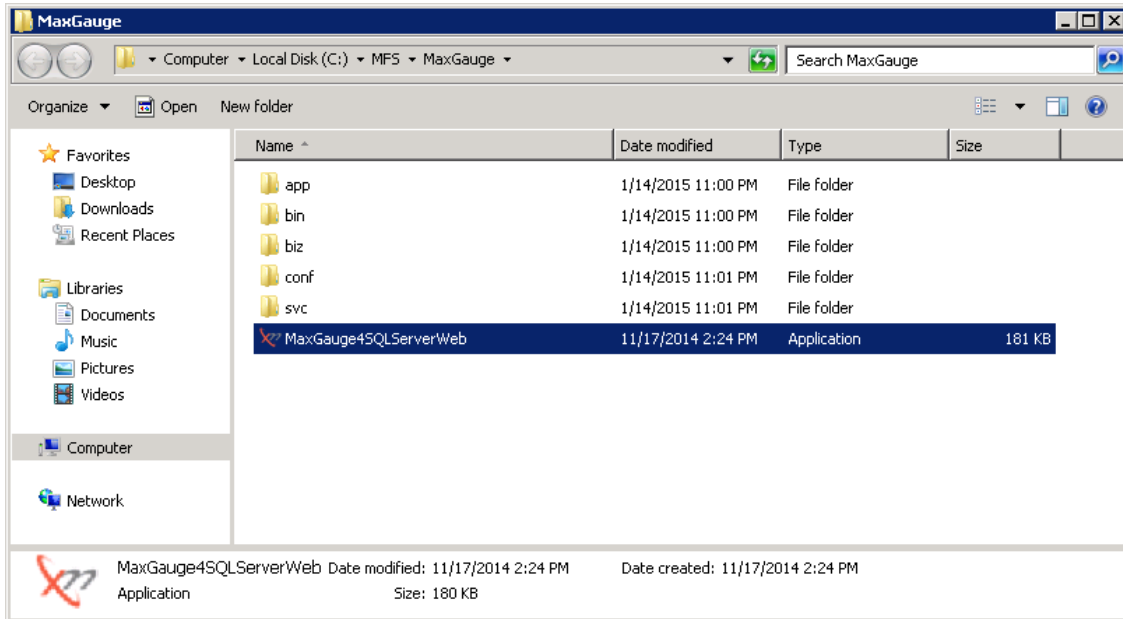
Installing MFS

1. Upload and unzip installation file



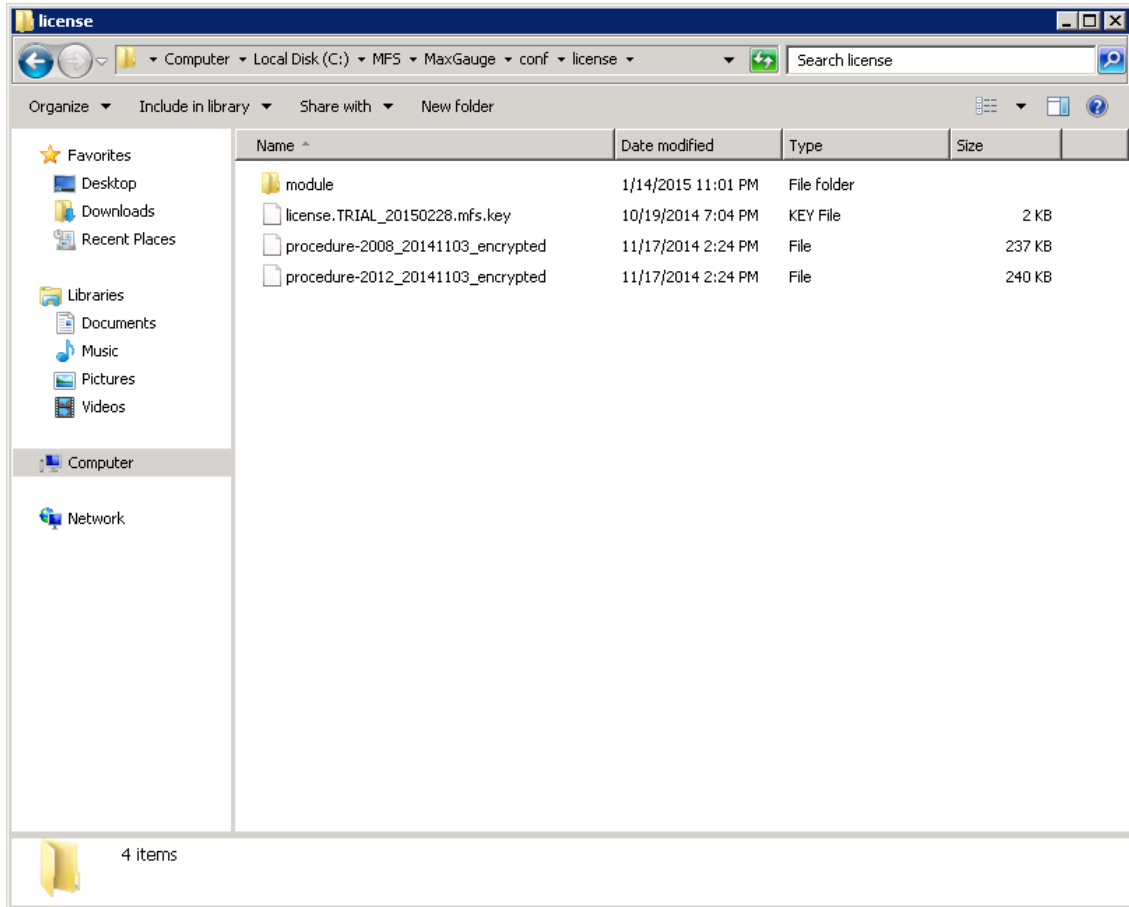
Unzip the compressed installation file (MaxGauge.zip).

2. Run MaxGauge4SQLServerWeb.exe



From the unzipped folder, run the MaxGauge4SQLServerWeb.exe file.

3. Upload License file



Upload the valid license file to the directory %MFS_HOME%/conf/license pathway.

4. Connect Test & Install

The MFS Configuration screen will appear. The WAS and Gather connection ports will be set by default, but it may be changed if necessary. Upon entering the SQL Server's Hostname (IP) used as the Repository Database, port, DB name, and the user information, click the Connect Test button to run the test. When the test completion confirmation message appears, then click Save.

To install MaxGauge click on the Create Repository DDL button, and the pop up message will appear as follows:

The pop up message allows the user to assign the performance management log Database (mdf, Idf) file, in which it will be logged and saved in the Repository. If user wishes to use the SQL Server's default database location, select the Use Root Directory and click the Create button to begin the installation.

```

C:\Windows\system32\cmd.exe - C:\MFS\maxgauge\bin\..\bin/install/install.bat ""
=====
[2015-01-14 13:22:09.500] == Clear DLLs oprPlan_Text.sql =====
[2015-01-14 13:22:09.501] == Clear DLLs oprProcessList.sql =====
[2015-01-14 13:22:09.502] == Clear DLLs oprSql_Text.sql =====
[2015-01-14 13:22:09.503] == Clear DLLs oprStatID.sql =====
[2015-01-14 13:22:09.504] == Clear DLLs procedure_repo =====
[2015-01-14 13:22:09.506]
[2015-01-14 13:22:09.506] ## Clear DLLs #####
#####
[2015-01-14 13:22:09.507] == Clear DLLs z_call_proc.sql =====
[2015-01-14 13:22:09.508] == Clear DLLs final =====
[2015-01-14 13:22:09.509]
[2015-01-14 13:22:09.509] ## Clear DLLs #####
#####
[2015-01-14 13:22:09.510] == Clear DLLs erd_mssql.sql =====
[2015-01-14 13:22:09.510]
[2015-01-14 13:22:09.511] ## Clear DLLs #####
#####
[2015-01-14 13:22:09.511] == Skip Clear DLLs erd_mssql_repo.sql =====
[2015-01-14 13:22:09.513]
[2015-01-14 13:22:09.513]
[2015-01-14 13:22:09.514] #####
#####
[2015-01-14 13:22:09.516]      InstallDDL Result : Success
[2015-01-14 13:22:09.517] #####
#####
Will be close after 3 seconds

```

In normal installation, 'InstallDDL Result : Success' message will appear.

MFS Configuration

This is regarding the service administrator configuration settings. In the event of changing the settings for each item, do so only with sufficient knowledge of the feature or with the guidance of technical support service. Unless there is a problem with operation, it is recommended to keep it at default settings.

Default - Configuration

The screenshot shows the configuration window for EXEM MaxGauge for SQLServer. The 'Default' tab is active. The 'Process - WAS' section has 'Listen Port' set to 8090 and 'Stop Port' set to 18090. The 'Process - Gather' section has 'Listen Port' set to 18091. The 'Database - Repository' section has 'Type' set to 'SQLServer (2005~)', 'Hostname' set to '127.0.0.1', 'Port' set to '1433', 'DB Name' set to 'EXEM', and 'User' set to 'sa'. There are 'Connect Test' and 'Create Repository DDL' buttons below the database fields. At the bottom right of the window are 'Restore', 'Save', and 'Close' buttons.

The default configuration content is as follows.

Process - WAS

Item	Explanation
Listen Port	Used for connecting to WAS from the web browser
Stop Port	Used for ending the WAS process

Process - Gather

Item	Explanation
Listen Port	Used for command internal processes such as Gather process terminating and debugging.

Database – Repository

Item	Explanation
Type	Select the Repository DB. SQL Server is the only currently available database.
Hostname	Repository DB Server IP
Port	Repository DB Server Port
DB Name	Name used exclusively by Repository DB
User	Repository Account Login ID (sysadmin's role required)
Password	Repository Account Login Password
Connect Test	Checks whether the Repository connection is on/off
Create Repository DDL	Installation Button (Becomes inactive once the installation is over)

Advance - Configuration

EXEM MaxGauge for SQLServer - Configuration

Default
+ Advance

Advance

General

Start processes when system boots up (Run as Administrator. Not supported XP)

%XM_HOME%

Java Home

Log Home

Charset

Process - WAS

Min Memory(MB) Max Memory(MB)

Session Duplicate

Process - Gather

Min Memory(MB) Max Memory(MB)

Database - Repository

Connect Timeout(sec) Read Timeout(sec)

Login Timeout(sec)

Pool Min Pool Max

Database - Instance

Connect Timeout(sec) Read Timeout(sec)

Login Timeout(sec)

Pool Min Pool Max

Web Socket

Compress

Idle Timeout(ms) Max Message Byte

Sysmon

Connect Timeout(sec) Read Timeout(sec)

Cache Continuous(sec)

General

Items	Explanation
Start processes when system boots up.....	When you check the items, the processes are registered in Windows Task Scheduler and automatically start upon rebooting the system.
%XM_HOME%	Installation Home Directory
Java Home	Used for setting the JDK besides the built-in JDK (Installation Path \app\jdk) (jdk 1.7.0_25 or higher)
Log Home	Used for setting the log directory besides the default log

Charset	Batch file for encoding settings
---------	----------------------------------

Process - WAS

Item	Explanation
Min Memory(MB)	WAS process usage minimum memory limit
Max Memory(MB)	WAS process usage maximum memory limit
Session Duplicate	Checks for any duplicate MFS account login

Process - Gather

Item	Explanation
Min Memory(MB)	Gather process usage minimum memory limit
Max Memory(MB)	Gather process usage maximum memory limit

Database – Repository

Item	Explanation
Connect Timeout(sec)	Maximum time it will wait for a response when connecting to Repository DB
Read Timeout(sec)	Maximum time it will wait for a response for Repository DB Read
Login Timeout(sec)	Maximum time it will wait for a response to Repository DB Login
Pool Min	Minimum number of connections used in Repository DB Pool which is created in Gather
Pool Max	Maximum number of connections used in Repository DB Pool which is created in Gather

Database – Instance

Item	Explanation
Connect Timeout(sec)	Maximum time it will wait for a response when connecting to each Instance DB
Read Timeout(sec)	Maximum time it will wait for a response for each Instance DB Read
Login Timeout(sec)	Maximum time it will wait for a response for each Instance DB Login
Pool Min	Minimum number of connections used in each instance's DB Pool which is created in Gather
Pool Max	Maximum number of connections used in each instance's DB Pool which is created in Gather

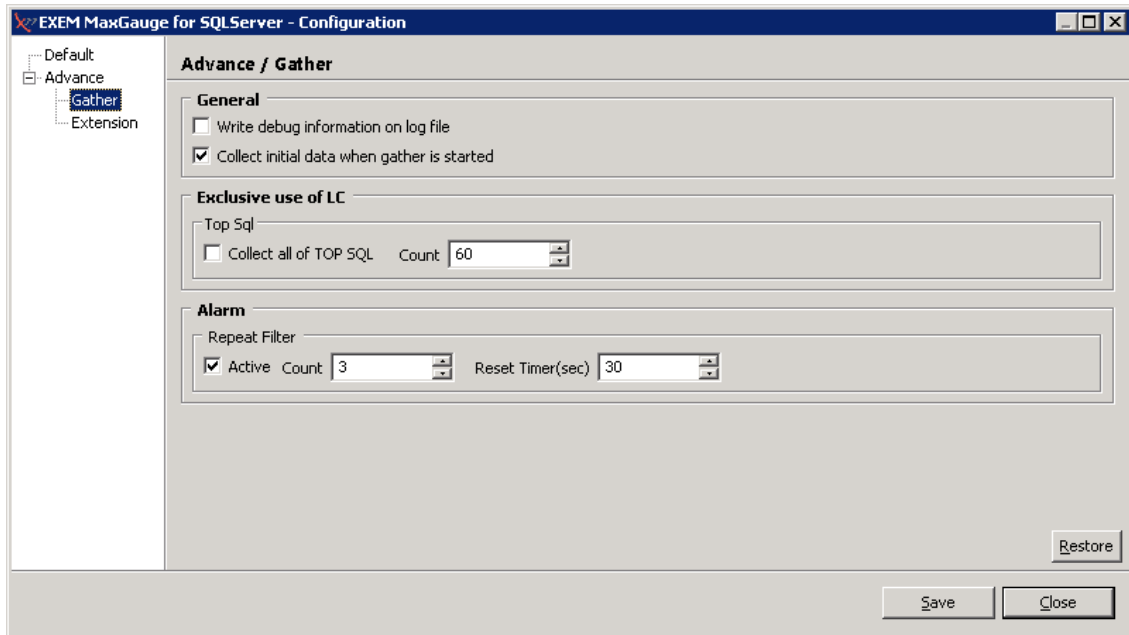
Web Socket

Item	Explanation
Idle Timeout(MS)	Waiting time when there are Web socket communication messages. If idle mode persists beyond the set time, it will be forced to disconnect.
Max Message Byte	Maximum communication message length when communicating with Web socket

Sysmon

Item	Explanation
Connect Timeout(sec)	Maximum time it will wait for a response when connecting to each server Sysmon agent
Read Timeout(sec)	Maximum time it will wait for a response for each server Sysmon agent read
Cache Continuous(sec)	Maximum time used to reference the Sysmon data which will be stored in the memory

Advance > Gather - Configuration



Configuration – Gather screen content is as follows.

General

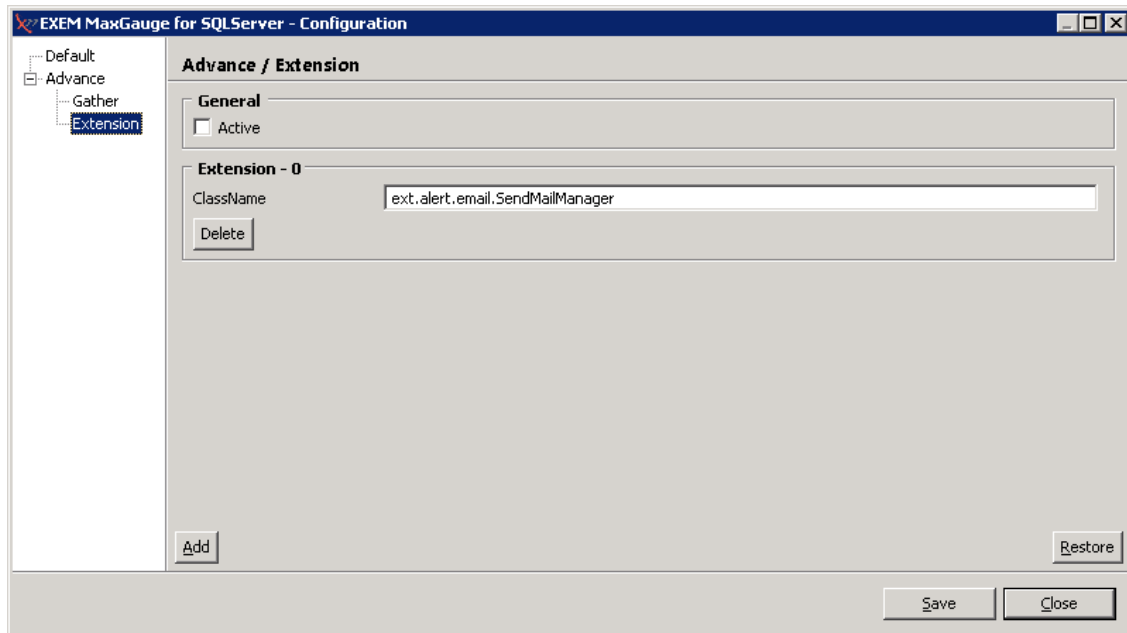
Item	Explanation
Write debug....	Run Gather in debug information output mode
Collect initial data.....	Whether to collect the initial data or not

Exclusive Use LC

Item	Explanation
Active Sender	Set to activate PA logging of exclusive use of LC procedures
Collect all of TOP SQL	Check – exec MXG_300 [count set value],1 Uncheck – exec MXG_300 [count set value],0

Alarm(Repeat Filter)

Item	Explanation
Active	Activates the Alarm Repeat function. When inactive, alarm is generated every time the value exceeds the threshold value.
Count	The continuous count when the value exceeds the alarm threshold value -- Conditions for Alarm.
Reset Timer(sec)	When the same conditions persist, the time at which the alarm should be initialized.

Advance > Extension - Configuration**General**

Item	Explanation
Active	Whether to use extension feature or not

Extension - N

Item	Explanation
ClassName	Enter the Class of extension feature you have selected

Alert mailing feature is available by default, and SNS feature may be added upon request of the user.

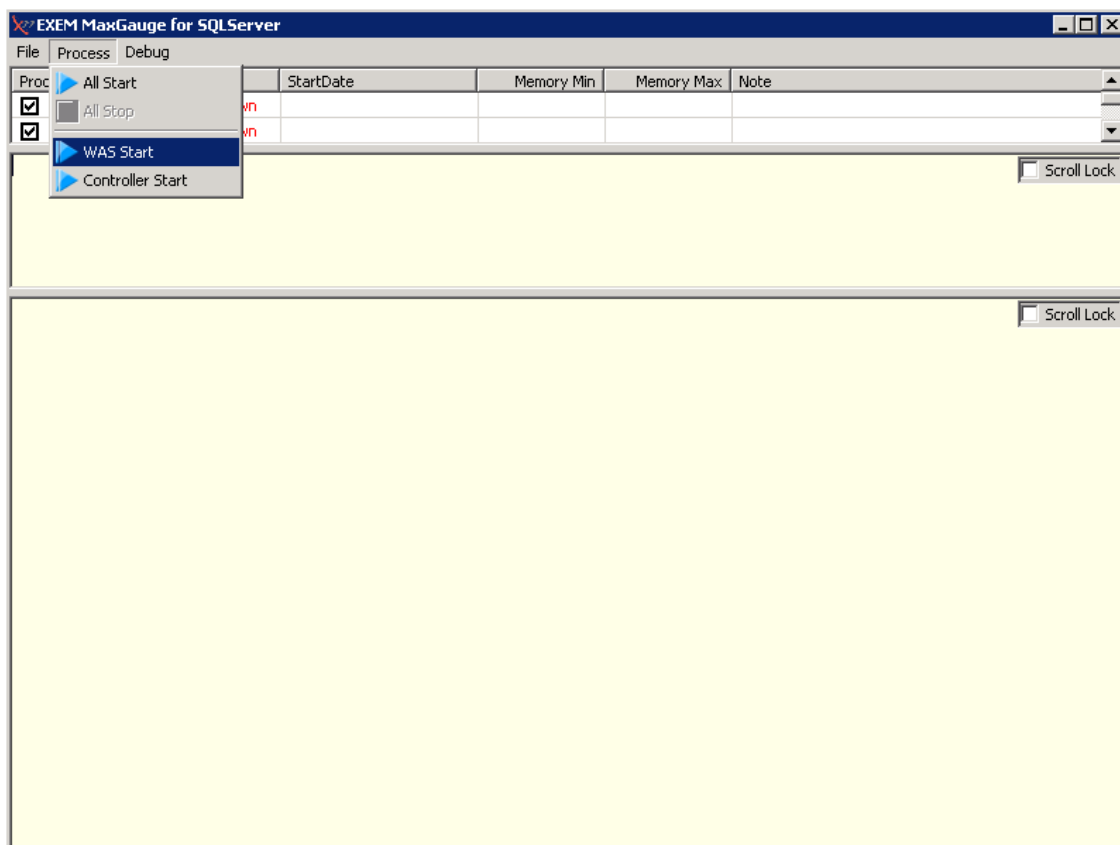
MFS ACTIVATION

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4. MFS Activation

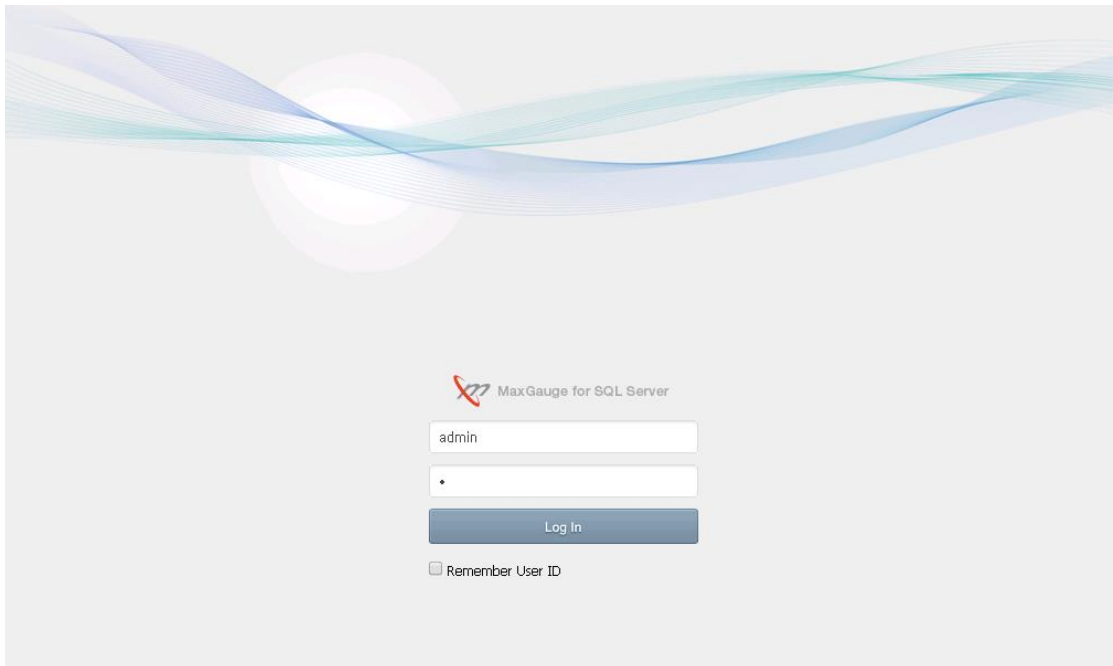
Monitoring Server Addition

1. WAS Start.



Turn on the Service Manager, and run the Process > WAS Start. You can run the MaxGauge for SQL Server from the Monitoring Server Registration WEB screen.

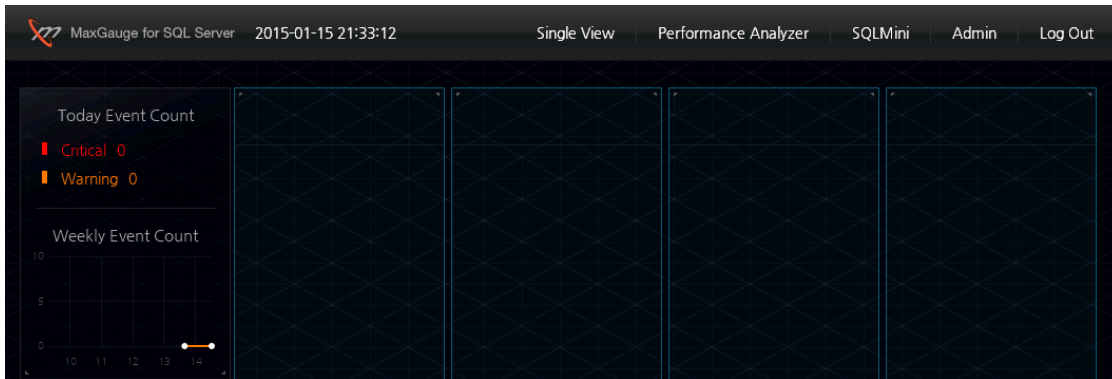
2. Login to Web Browser



Using hostname and port number information entered on Database-Repository window, move to the login screen (ex. 127.0.0.1:8090). If you are not using a Chrome browser, then a Chrome installation window will appear. If you want to run the installation file manually, then go to the path below to manually install the Chrome browser.

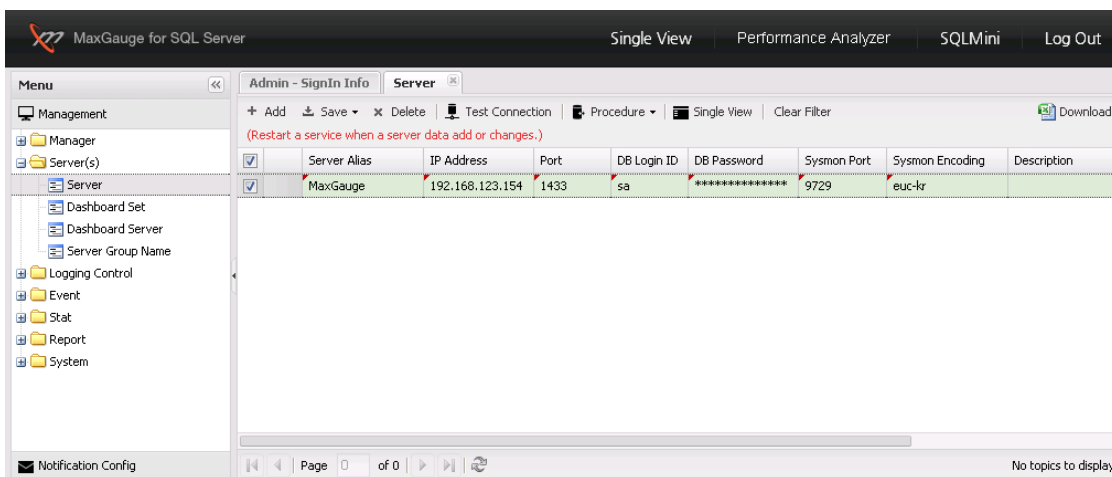
- %MFS_HOME%\svc\www\resource\ChromeStandaloneSetup.exe.
- MaxGauge for SQL Server currently only supports the Chrome Browser.
- The default ID is 'admin' and the password is '1'. Log in with the default ID.

3. Click into Admin



When you are logging in for the first time, since there are no registered servers, it will display an empty screen. To add servers, click on the Admin on the top right corner.

4. Add SQL Server



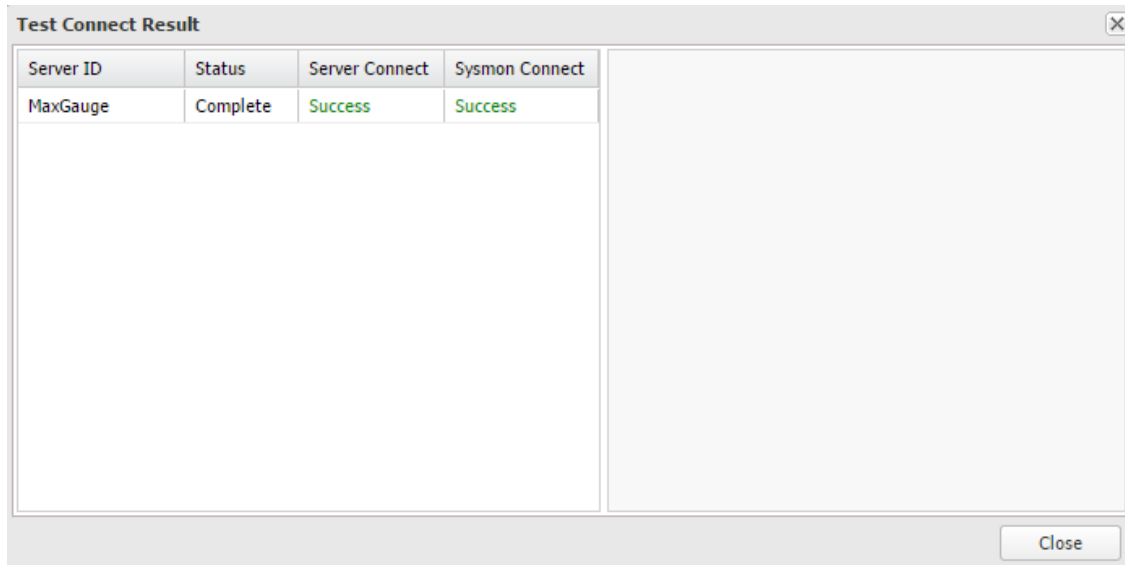
In the Menu on the left side of Admin page, go to Server(s) > Server position. Enter the target monitoring server's information.

The explanation for each field in the server add section.

Item	Explanation
ADD	Adds DB server (instance)
SAVE	Saves DB server (instance)
DELETE	Deletes DB server (instance)

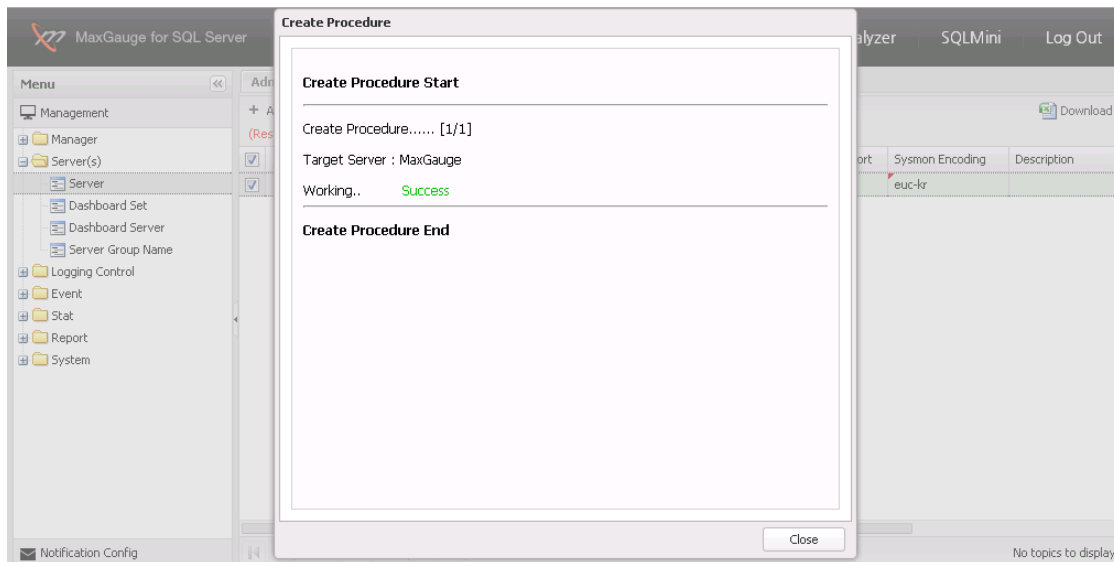
Connect Test	Connection test for the selected DB server
Create Procedure	Creates monitoring procedure used in products in the target monitoring DB server
Procedure File Upload	Used when an extra procedure needs to be created in the target monitoring DB server
Single View	Connects the newly added target DB server to be monitored to the Single View
Server Name	Target DB server name or nickname
IP Address	Target DB server IP address
Port	Target DB server Port number
DB Account	Target DB server account login (sysadmin's role required)
DB Password	Target DB server account login password
Sysmon Port	Port number of Sysmon installed in target DB server
Sysmon Encoding	Designates the encoding method for the data downloaded from Sysmon
Explanation	Miscellaneous explanation
Version	SQL server version of the target DB server
Instance Name	Instance name of the target DB server
Use for Monitoring or Not	Confirms whether or not the registered server will be used as a target for monitoring

Once finished inputting the information, execute the connection test.



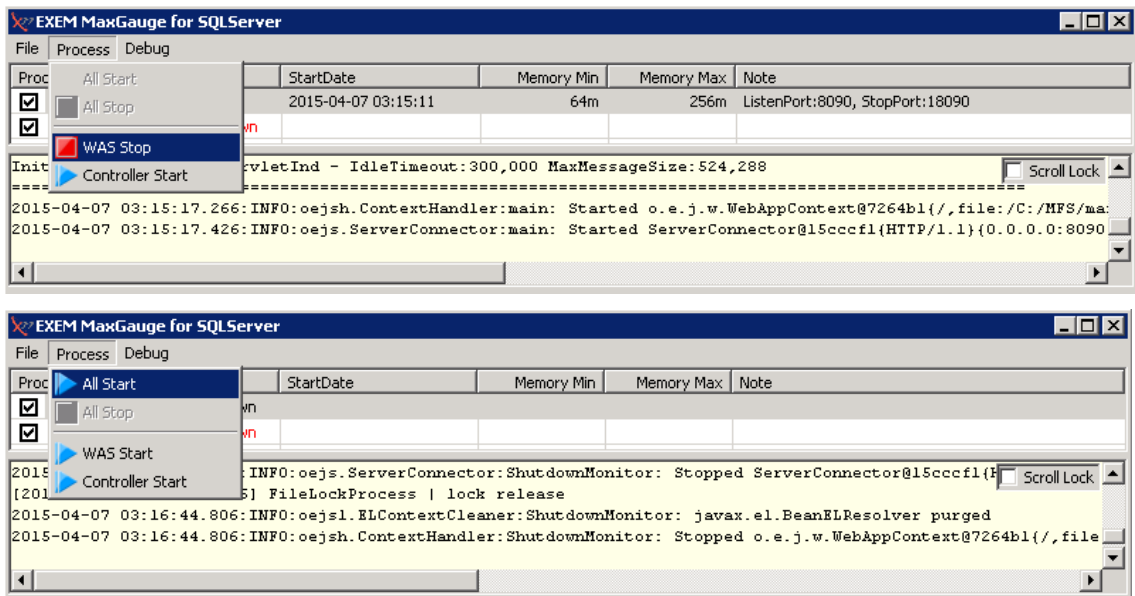
When the Server Connect and Sysmon Connect indicate successful, it has been successfully added.

Once the Server Connect is running normally, begin creating procedures. Select a server and then click on the Create Procedure button to begin creating procedures.



When Create Procedure has ended, click the Save button to complete the installation of procedures.

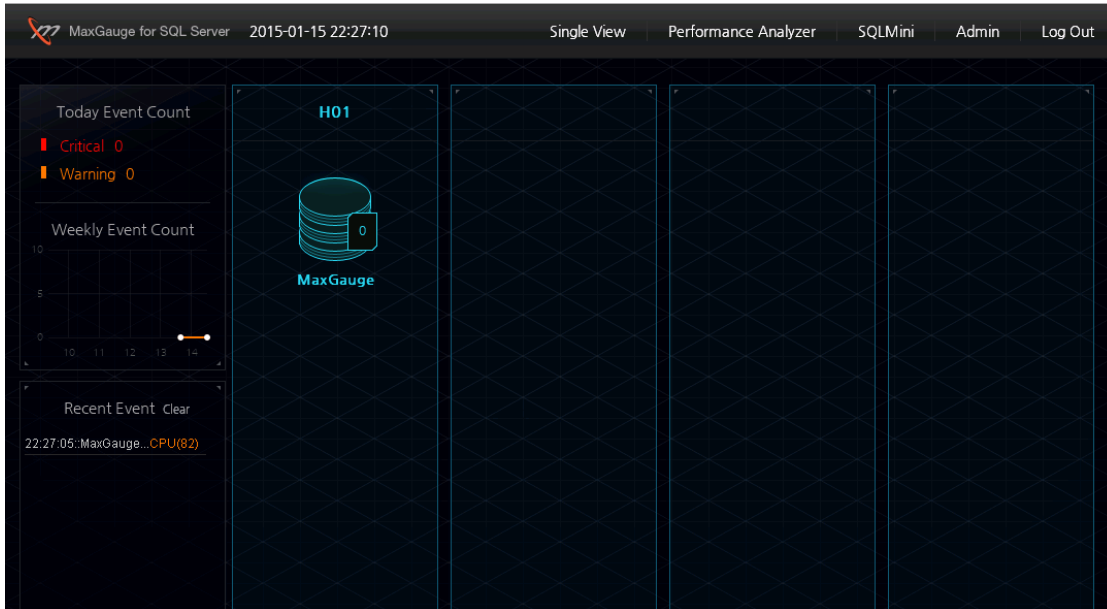
5. WAS Stop and All Start



To activate MaxGauge user needs to start WAS and Gather which can be done independently or together with All Start.

Operation Check

MFS Dashboard



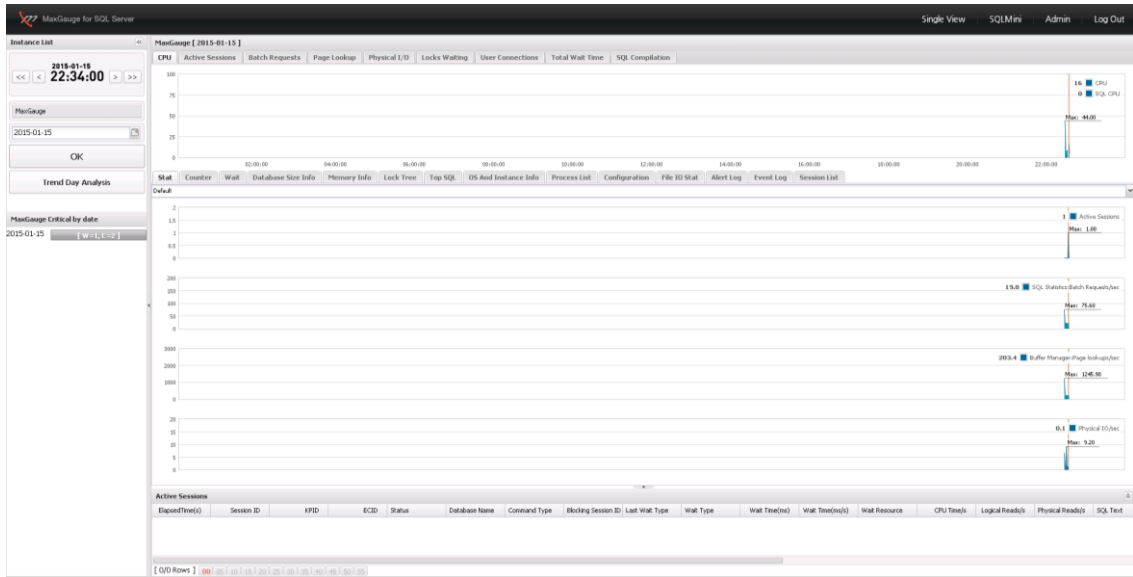
When you log in, the registered server should appear on the Dashboard.

Single View



Click on the server icon or the Single View on the top menu bar of the Dashboard to open up the Single View screen.

Performance Analyzer



Click on the Performance Analyzer on the top menu bar to open up the Performance Analyzer screen and after starting the WAS and Gather, it will begin to draw the performance graph.

**To find out more about
MaxGauge or If you have
interesting about this product,
contact MaxGauge.**

[www. MaxGauge.com](http://www.MaxGauge.com)

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ABOUT US

MaxGauge, INC is a solution based technology company that has been providing database optimization and tuning services since 2001 with our software solution. We have served 450 clients across a wide range of industries including finance, manufacturing, government, healthcare, telecommunication, etc.