

Project management - integrated into Outlook

InLoox 5.x configuration guide for Microsoft SQL Server

An IQ medialab / OptCon Whitepaper

Published: February 2008 Author / copyright: © 2008 Heinz-Peter Bross, OptCon GmbH. You can find up-to-date information at <u>http://www.inloox.com</u>



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General information

This document describes the steps to successful configure and start-up a Microsoft SQL Server 2005. Furthermore a suitable system configuration is described for using InLoox. A Windows Server 2003 is used as example platform. This configuration guide is also valid for Windows 2008 Server. (Surface Configuration is integrated in SQL Server Configuration Manager)

SQL Server Installation

Obtain a SQL Servers 2005 Edition

 If you do not have a Microsoft SQL Server 2005 licence yet as well as an appropriate installation medium, Microsoft SQL Server 2005 Express Edition is available under following address free of charge:

http://www.microsoft.com/downloads/details.aspx?FamilyID=220549b5-0b07-4448-8848dcc397514b41&displaylang=en

Important: Please note that off-line replication is not possible with Microsoft SQL Server 2005 Express Edition. If you like to use the InLoox off-line availability, a **Workgroup**, **Standard** or **Enterprise Edition** of Microsoft SQL Server is necessary. You find an overview of the SQL Server versions capability characteristics under:

http://www.microsoft.com/sql/prodinfo/features/compare-features.mspx

Initial installation of SQL Server 2005 on Windows Server

- Microsoft offers extensive documentation to initial considerations before the installation under the address <u>http://technet.microsoft.com/en-gb/library/ms143719.aspx</u>. In the following a **standard installation** will proceed. Changes of the standard installation are not considered in this document.
- 2. Install the Microsoft SQL Server 2005. You find a step by step guide under:

http://technet.microsoft.com/en-gb/library/ms143219.aspx

Check installation

Check after installation whether the SQL Server 2005 Service is executed:

- 1. Double click on Computer Management in the Control Panel >> Administrative Tools
- 3. Click on Services and Application >> Services
- 4. Look for the indicator name of the appropriate service. According to standard the service carries the names **SQL Server (MSSQLSERVER)**

Opening Ports

<u>Please note</u> that opening ports can lead to a **safety risk** in your network. Examine necessary safety precautions in advance before opening ports!

1. Make sure that the database Server ports are not *blocked*. Examine the firewall properties of the server as well as network hardware.

The standard port of Microsoft SQL Server is: 1433



SQL Server Configuration

If you try to connect from a remote computer or a client to an instance of Microsoft SQL Server 2005 an error message might be appear:



This problem can occur with any program, which you use for connecting to SQL Server. Follow this guide, in order to solve the problem.

Check the SQL Server Configuration Manager settings

To achieve that the SQL Server instance is reachable on the network, you have to configure and switch on the network protocols if necessary. Proceed as follows:

- 1. Click on Start >> Programs >> Microsoft SQL Server 2005 >> Configuration Tools
- 2. Afterwards click on SQL Server Configuration Manager



3. Open the branch SQL Server Network configuration in the left tree structure and click on Protocols for MSSQLSERVER

| 🚡 Sql Server Configuration Manager | | | |
|--|--|---|--|
| Eile Action View Help $\Leftarrow ightarrow ightar$ | | | |
| SQL Server Configuration Manager (Local) SQL Server Services SQL Server Retwork Configuration (32bit) SQL Server Network Configuration (32bit) SQL Server Network Configuration SQL Server Network Configuration SQL Network Client 10.0 Configuration SQL Network Client 10.0 Configuration | Protocol Name Shared Memory Named Pipes TCP/IP VIA | Status Enabled Enabled Enabled Disabled | |

- 4. Right click on **TCP/IP** to activate this protocol
- 5. Deactivate Named Pipes the same way
- 6. If a message requests to start the SQL service again, click on the node SQL Server 2005-Services, stop the SQL Server and SQL Browser and restart these thereafter. Make sure that both services are running at the end.



Surface configuration

- 1. Click on Start >> Programs >> Microsoft SQL Server 2005 >> Configuration Tools
- 2. Click on SQL Server Surface Configuration afterwards
- 3. The SQL Server 2005 Surface Area Configuration will open



- 4. Click on Surface Area Configuration for Services and Connections in the bottom area
- 5. The SQL Server 2005 Surface Area configuration will open

| 🐔 Surface Area Configuration for S | ervices and Conn | ections - localhost 🛛 🔀 | |
|--|---|---|--|
| SQL Server 2005 Surfa | ace Area Config er | guration | |
| Enable only the services and connection protect your server by reducing the surfar Seject a component and then configure its | i types used by your a ce area. For default se s services and connect | pplications. Disabling unused services and connections helps titings, see <u>Help</u> ions: | |
| □ □ SQLEXPRESS □ □ Database Engine → Service | Disable this service | unless your applications use it. | |
| Remote Connections | S <u>e</u> rvice name: | MSSQL\$SQLEXPRESS | |
| H 🛄 SUL Server Browser | Display name: | SQL Server (SQLEXPRESS) | |
| | Description: | Provides storage, processing and controlled access of data and rapid transaction processing. | |
| | Startup type: | Automatic | |
| | Ser <u>v</u> ice status: | Running | |
| | Start | Stop Pause Resume | |
| View by Instance View by Component | | | |
| | | OK Cancel Apply Help | |



- 6. Extend the node Database engine and click on Service
- 7. Change the Startup type to Automatic if necessary. Confirm with Apply
- 8. click on **Remote Connections** afterwards

| Surface Area Configuration for S | Services and Connections - localhost 🛛 🛛 🔀 |
|--|--|
| SQL Server 2005 Surfa | ace Area Configuration |
| Enable only the services and connection protect your server by reducing the surfa Seject a component and then configure it | n types used by your applications. Disabling unused services and connections helps ce area. For default settings, see <u>Help</u> . s services and connections: |
| SQLEXPRESS Database Engine Service Remote Connections SQL Server Browser | By default, SQL Server 2005 Express, Evaluation, and Developer editions allow local client connections only. Enterprise, Standard, and Workgroup editions also listen for remote client connections over TCP/IP. Use the options below to change the ptotocols on which SQL Server listens for incoming client connections. TCP/IP is preferred over named pipes because it requires fewer ports to be opened across the firewall. |
| | OK Cancel Apply Help |

- 9. The standard settings of SQL Server Express Edition is Local connections only
- 10. Change the settings to Local and remote connections >> Using TCP/IP only
- 11. Confirm with OK

Authorizations configuration

After the Microsoft SQL Server installation on a Windows Server are several SQL security groups in the Active directory. The membership in one of these groups permits the access to Microsoft SQL Server.

Add all users, who should receive access to InLoox, into the appropriate group:

- 1. On the Server open: Start >> Programs >> Administration >> Active directory user and computers
- 2. Edit the appropriate user (e.g. *"Jon Average"*) or the appropriate user group (e.g. *"Coworker selling"*)
- 3. The dialog Options of... appears. Change to the register Member of
- 4. Click on Add. The group select dialog appears
- Enter the text SQLServer2005MSSQLUser (for SQL Server 2005) and/or SQLServer2008MSSQLUser (for SQL Server 2008) into the input field object names. Click on check names. The name should be resolved as follows:

SQLServer2005MSSQLUser\$SERVERNAME\$MSSQLSERVER (for SQL Server 2005) SQLServer2008MSSQLUser\$SERVERNAME\$MSSQLSERVER (for SQL Server 2008)

The SERVER NAME stands for the name of the SQL Server or the primary domain controller

6. Confirm the opened dialog fields with OK



If you do not find the SQL user groups in the Active Directory of the Server, this can have different causes:

 You are located on a member Server of a domain without independent Active directory. Proceed in this case as follows:

After MS SQL Server installation on a Windows 2003 member Server without Active Directory stand the same groups are available under Start >> Programs >> Administration >> Computer Administration >> System >> Local users and groups >> Groups, which are described on the previous page.



Configure the group membership as described above

• If you cannot find the SQL Server user group on the Server, you also have the possibility of creating a new user group manually. Consider the chapter:

Extended configuration options / troubleshooting Authorization configuration with SQL Server Management Studio



Extended configuration options / troubleshooting

Authorization configuration with SQL Servers Management Studio

- 1. Create a new user group InLoox in the Active directory
- 2. Add all InLoox users to this group
- 3. Click on Start >> Programs >> Microsoft SQL Server 2005 >> SQL Server Management Studio
- 4. The Connect to Server dialog appears

| Microsoft SQL Serv | er XWindows Se | rver System |
|-----------------------|--------------------|-------------|
| Server type. | Database Engine | 2 |
| Server name: | HB-WR2SQL2005 | × |
| User name: | XP64VAdministrator | × |
| Com | Remember password | otions >> |

- 5. Select the appropriate Server under Server name
- 6. click on Connect afterwards
- 7. Microsoft SQL Server Management Studio indicates that it is connected



- 8. Open the Security node
- 9. Click on Login with the right mouse button

| 🍢 Microsoft SQL Server Management Studio E | kpress . | | |
|---|------------------------------|------------|-----------|
| File Edit View Tools Window Community H | elp | | |
| 🔔 New Query 📑 🎯 🚽 🗿 🖺 🧾 🥬 | 🖀 - | | |
| Object Explorer 🚽 🗸 🗸 | Summary | | • × |
| 왕 왕 = 김 7 | 🔁 🗟 🚅 🍸 🏢 List 🗸 | | |
| S1 (SQL Server 9.0.1399 - gruen) B Databases Databases Databases Databases Grup Dorr New Logn Grup Filter Filter | Logins S1\Security\Logins | | 2 Item(s) |
| 🗄 🛄 Serve Refresh | Name | Created | |
| | 🐣 grueni | 08.02.2008 | |
| Berver Objects ■ Replication ■ Management | đ _a sa | 08.04.2003 | |



- 10. Click on New Login
- 11. The window Login New appears

| 🚪 Login - New | | | |
|--|---------------------------|---------------------|-----------|
| Select a page P General | 🕵 Script 🝷 🚺 Help | | |
| Server Roles Control Securables Securables Status | Login pame: | r | Sgarch |
| Connection | Mapped to asymmetric key | | |
| Server: | Key name: | | |
| S1 | Default <u>d</u> atabase: | master | ~ |
| grueni | Default language: | <default></default> | ~ |
| Progress Ready | | | |
| | | (| OK Cancel |

- 12. Click on Search
- 13. Click on Find Now in the new dialog



14. Look for the **InLoox group** in the Active directory or in the **computer administration** under groups.

15. Click on **search** and look for the **object names**

| Object Types | ? 🛛 |
|---|-----|
| Select the types of objects you want to find. | |
| Diject types: | |
| Mailt-in security principals | |
| V 🕵 Users | |
| | |

16. Make sure that all **object types** are selected. Occasionally groups are not activated and you have to set the appropriate option here, so that you can see the groups

| Select User or Group | ? 🛽 |
|---|--------------|
| Select this object type: User, Group, or Built-in security principal | Diject Types |
| Erom this location: | Locations |
| Enter the object name to select (<u>examples</u>): Win2003\JohnAverage | heck Names |
| Advanced | OK Cancel |

17. The group was found and can be confirmed with OK

| 🖥 Login - New | | | | |
|--|--|---------------------|-----------|--|
| Select a page | 🖾 Script 👻 🔀 Help | | | |
| ™ Server Holes | Login pame: | Win2003\JohnAverage | Sgarch | |
| Connection | Mapped to asymmetric key | | 28 | |
| Server: S1 | <u>K</u> ey name: Default database: | master | | |
| Connection: arueni | Default language: | <default></default> | ~ | |
| View connection properties Progress Ready | | | No. | |
| | | | DK Cancel | |

- 18. The group name is inserted
- 19. Make sure that the option **Windows authentication** is selected. In cases of exception, e.g. if the client is not merged in a domain, however you have to use the **SQL authentication**. Therefore, an appropriate change of the SQL Server configuration is necessary, which can be set as follows:
 - Click with the right mouse button in the left area on **SQL Server**, and then click on **Properties**.



- Change the Server authentication on register Security >> Server authentication to SQL Server and Windows Authentication mode in the SQL Server Properties dialog and then confirm with OK
- For details consider the Whitepaper "Configure Microsoft SQL Server for SQL-authentication"
- 20. Click on **User Mapping** afterwards

| 🚪 Login Properties - grueni | | | | | |
|-----------------------------|--|--|--------------|----------------|--|
| Select a page | C Script | 🝷 🖪 Help | | | |
| General | (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) | | | | |
| Server holes | Users manned to this login: | | | | |
| Securables | Мар | Database | User | Default Schema | |
| Status | | distribution | | | |
| | Image: A start of the start | InLoox | InLooxUser | | |
| | | master | | | |
| | | msdb | | | |
| Connection | Databas | t account enabled fo e role membership for accessadmin | r CE : CE | | |
| S1 | | latareader | | | |
| Connection: | db_d | latawriter Idladmin | | | |
| View connection properties | db_d db_d db_o | lenydatareader lenydatawriter iwner | | | |
| Progress | db_s | ecurityadmin | | | |
| O ^{Ready} | | | | | |
| | | | | OK Cancel | |

- 21. **Users**, who are assigned to this logon, see all SQL databases on this Server. Activate the InLoox database here. If this database does not exist yet, publish the InLoox database with help of the **InLoox Setup**
- 22. Subsequently, you have to assign the permission **db_datareader**, **db_datawriter** and **db_owner** to the database role for the **InLoox** database. (**db_owner** is necessary o use user define fields)
- 23. With this approach, the appropriate group is registered in the **Databases** >> **InLoox** >> **Security** >> **User** node at the same time

| 🗏 Microsoft SQL Server Management S | Studio Express | | |
|---|--|--|------------|
| <u>Eile E</u> dit <u>V</u> iew <u>T</u> ools <u>W</u> indow <u>C</u> omn | nunity <u>H</u> elp | | |
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| Object Explorer · | ▼ | | • × |
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| Tables Tables Tables Tables | Name | Created | |
| | eMA | 08.04.2003 30.05,2008 08.04,2003 14.10,2005 14.10,2005 01.10,2008 | |

24. At the end you still have to click on the Server name >> Properties with the right mouse button



25. Thereafter click on the **Permissions** node

| erver Properties - C6\SC | QLEXPRESS | | | | |
|--|--|---|-------|-------------------|--------------|
| st a page | 🔄 Script 🝷 🚺 Help | | | | |
| ieneral femory | | | | | |
| rocessors | Logins or roles: | | | | |
| ecurity | Name | | Type | | |
| onnections | AgentSigningCertificate## | | Login | | |
| atabase Settings | ##MS_SQLAuthenticatorCertificate## | Login | | | |
| 'ermissions | ###MS_SQLReplicationSigningCertificate# | | Login | | |
| | ###MS_SQLResourceSigningCertificate## | ŧ | Login | | |
| | C6\SQLServer2005MSSQLUser\$C6\$SQL | _EXPRESS | Login | | |
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- 26. Here the appropriate group must be also registered
- 27. Perhaps it is necessary to restart the SQL Server Service

Configuration for Clients outside a domain

<u>Please note</u> that opening ports can lead to a **safety risk** in your network. Examine the necessary safety precautions before in advance opening ports!

Opening Ports

If the **SQL Server** is located on a Windows XP-computer with SP2 or Windows Vista, which does not belong to an Active Directory domain, open the appropriate ports for the SQL Server and SQL Browser Service.

Proceed to the open ports as follows:

- 1. Select Windows Firewall in the Control Panel
- 2. Activate **File and Printer Sharing** in the exception list, because the control over Named Pipes will work that way (port 445). This port is present in the exception list according to the standard.
- 3. Click on register **exceptions on port**, and share the **TCP port 1433**. This port will assign for the first SQL Server instance according to the standard.
- 4. Open the port for the **File and Printer Sharing** too, in order to access over Named Pipes to the SQL Server(**port 445**, already in the exception list available)

SQL Server Browser Service activation

If you execute the SQL Server 2005 with an instance name and you do not use a special TCP/IP port number in your connecting character sequence, you have to activate the SQL Server Browser Service, in order to allow remote connections. SQL Server 2005 Express is installed e.g. with the standard instance name <computer name> \ SQLEXPRESS.

You have to activate the SQL Server Browser Service only once, independent of the number of SQL Server 2005 instances, which would you like to execute. Proceed as follows, in order to activate the SQL Server Browser Service:



- 1. Click on Start >> Programs >> Microsoft SQL Server 2005 >> Configuration Tools
- 2. Click on SQL Server Surface Configuration afterwards
- 3. Click on **Surface Area Configuration for Services and Connections** at the SQL Server 2005surface configuration page
- 4. Click on SQL Server Browser at the Surface Area Configuration for Services and Connections page and select Automatic as starting type. Afterwards confirm with Apply
- 5. Click on Start and afterwards on OK

Note: If you execute the SQL Server Browser Service on a computer, the computer shows the instance names and the connection information of all SQL Servers instances, which are executed on the computer. The risk can be reduced, by not activating the SQL Server Browser Service and connect directly over an assigned TCP port to the SQL Server instance. The direct connection to an instance of SQL Server over a TCP port cannot be handled in the context of this article.

After you have allowed remote connections to the SQL Server, you have to configure the SQL Server 2005 Express for using TCP port 1433, which is the standard Microsoft SQL Server port. You have to start the **SQL Server Configuration Manager**, navigate to the **SQL Server 2005 network configuration** node and select the protocols for SQLEXPRESS and the TCP/IP protocol. Click on register IP-Addresses in TCP/IP protocol and write **port 1433** in the TCP port field under the section IP All.

| тср | VIP Properties | ? 🛛 | | | | | | |
|-----|--|---------------|--|--|--|--|--|--|
| Pro | otocol IP Addresses | | | | | | | |
| | | | | | | | | |
| | Active | Yes | | | | | | |
| | Enabled | No | | | | | | |
| | IP Address | 192.168.0.116 | | | | | | |
| | TCP Dynamic Ports | | | | | | | |
| | TCP Port | 1433 | | | | | | |
| | IP2 | | | | | | | |
| | Active | Yes | | | | | | |
| | Enabled | No | | | | | | |
| | IP Address | 127.0.0.1 | | | | | | |
| | TCP Dynamic Ports | | | | | | | |
| | TCP Port | 1433 | | | | | | |
| | IPAII | | | | | | | |
| | TCP Dynamic Ports | | | | | | | |
| | TCP Port | 1433 | | | | | | |
| T | TCP Port TCP port OK Cancel Apply Help | | | | | | | |

Create exceptions in the Windows Firewall

These steps are valid for the version of the Windows Firewall, which is contained in Windows XP Service Pack 2 (SP2) and in Windows Server 2003. If you use another firewall system, consult the appropriate firewall documentation.

If you use a Firewall on a computer with SQL Server 2005, external connections to SQL Server 2005 are blocked, unless SQL Server 2005 and SQL Server Browser Service can communicate through the Firewall. You must provide an exception for each instance of SQL Server 2005, which accept remote connections. In addition, you also need an exception for the SQL Server Browser Service. SQL Server 2005 uses an instance ID as a component of the path, if you install the program files. Determine the correct instance ID, in order to provide exceptions for the individual instances of SQL Server.



Proceed as follows, in order to determine an instance ID.

- 1. Click on Start >> Programs >> Microsoft SQL Server 2005 >> Configuration Tools
- 2. Click on SQL Server Configuration Manager afterwards
- 3. Click on SQL Server Browser Service at the SQL Server Configuration Manager in the right window area
- 4. Right click on the instance name in the main window and choose Property
- 5. Click on register Extended at the Property page of the SQL Server browser
- 6. Search for the instance ID in the Property List, and click on OK

Create an exception for SQL Server 2005 in the Windows Firewall

Proceed as follows, in order to provide an exception for SQL Server 2005 in the Windows Firewall:

1. Click on Start >> Settings >> Control Panel >> Windows Firewall

| 🗃 Windows Firewall | × |
|--|---|
| General Exceptions Advanced | |
| Windows Firewall is turned off. Your computer is at risk of attacks and intrusions from outside sources such as the Internet. We recommend that you click the General tab and select On. | |
| Programs and Services: | |
| Name | |
| File and Printer Sharing Microsoft Office Groove Microsoft Office Outlook Remote Assistance Remote Desktop Salservr UPnP Framework | |
| Add Program Add Port Edit Delete Display a potification when Windows Firewall blocks a program What are the risks of allowing exceptions? |] |
| OK Cancel | |

- 2. Click on the register Exceptions in the Windows Firewall
- 3. Click on the Add Program button and afterwards on Browse
- 4. Click on the executable program "C:\Program Files\Microsoft SQL Server \ MSSQL.1 \ MSSQL \ Binn \ sqlservr.exe"
- 5. Click on Open and afterwards on OK
- 6. Subsequently, the file is specified on register Exceptions



Create an exception for the SQL Server Browser Service in the Windows Firewall

Proceed as follows, in order to provide an exception for the SQL Server Browser service in the Windows Firewall:

1. Click on Start >> Settings >> Control Panel >> Windows Firewall

| Windows Firewall | × |
|--|---|
| General Exceptions Advanced | |
| Windows Firewall is turned off. Your computer is at risk of attacks and intrusions from outside sources such as the Internet. We recommend that you click the General tab and select On. | |
| Programs and Services: | |
| Name | |
| ☐ File and Printer Sharing ✔ Microsoft Office Groove ✔ Microsoft Office OneNote ✔ Microsoft Office Outlook ✔ Remote Assistance ☐ Remote Desktop | |
| Sqlbrowser.exe | |
| U Squeevr UPnP Framework | |
| Add Program Add Port Edit Delete | |
| ✓ Display a notification when Windows Firewall blocks a program | |
| What are the risks of allowing exceptions? | |
| OK Cancel | |

- 2. Click in the Windows Firewall on the register Exceptions
- 3. Click on the Add Program button and afterwards on Browse
- 4. Click on the executable program "C:\Program Files\Microsoft SQL Server \ 90 \ Shared \ sqlbrowser.exe"
- 5. Click on Open and afterwards on OK
- 6. Subsequently, the file is specified on register Exceptions

Check list for error solution

For problems please examine:

- Is the SQL Server and SQL Browser Service execute on the Server?
- Are Remote Connections and TCP/IP activated in the surface configuration?
- Is the authentication (Windows/SQL with Windows) correctly set in SQL Server Management Studio under Security in the Server Properties of the SQL of Server?
- Is the group in SQL Server Management Studio under Security >> Logins set correctly, in which the InLoox users are entered? Does the registration have the membership db_datareader, db_datawriter and db-owner in the database roles?
- Is the port 1433 open in the Firewall?
- Did a restart of the clients take place?
- Did a restart from SQL Server take place?