QSAR TOOLBOX

The OECD QSAR Toolbox for Grouping Chemicals into Categories

User manual

Toolbox 2.2 Client-Server Configuration

Document history

Version	Comment
Version 1.0	30/10/2010, First version
Version 1.1	31/01/2011, Domain controller setup
Version 1.2	16/02/2010, Minor update on server side configuration
Version 1.3	03/06/2011, Trouble shooting section

Issue date: June 2011

Language: English

If you have questions or comments that relate to this document, please send them to ehscont@oecd.org or visit the QSAR Toolbox discussion forum at https://community.oecd.org/community/toolbox_forum.

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1 Introduction

Toolbox Server is distributed as a Windows MSI package. It contains the files comprising the Toolbox Server and a Database to be used by the client Toolbox installations. The installation procedure performs only basic COM registration and does not perform any setting up of security permissions/policies needed for the working of the server.

The administrator of the server has the responsibility for configuring the security permissions used for the server's communication.

2 Prerequisites

2.1 Hardware requirements

The computer hosting Toolbox server must have at least:

RAM: 2 GB (recommended 4 GB)

Hard disk space: 10GB (recommended 20 GB)

CPU: 2 GHz, 32 or 64 bit architecture(recommended multi-core CPU)

Network adapter 100 Mbps (recommended 1Gbps)

2.2 Software requirements

Firebird 2.1 32 bit and 64bit* installation.

* Toolbox uses native client library (fbclient.dll) provided within the firebird installation as toolbox server is 32 bit application is able to load only 32 bit client library to access firebird server. To be able to use 64 bit server you should provide 32bit version of fbclient.dll.

3 Installation of the Toolbox Server

Please unzip the Toolbox Server installation package on your local disk and run the StartInstall.exe

3.1 Configuration of the Toolbox Server computer

Toolbox 2.0 server is Distributed Component Object Module (DCOM) automation server.

In this respect all common rules for the DCOM applications are also valid for the Toolbox 2.0 server.

3.1.1 Server Firewall settings:

Add Toolbox Server application to the exceptions list

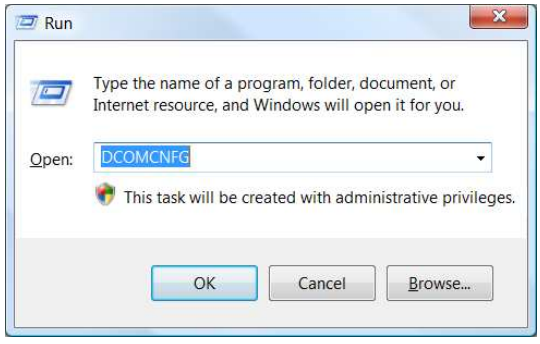
Add TCP port 135 to firewall exceptions list

3.1.2 Server DCOM configuration:

Authentication policy:

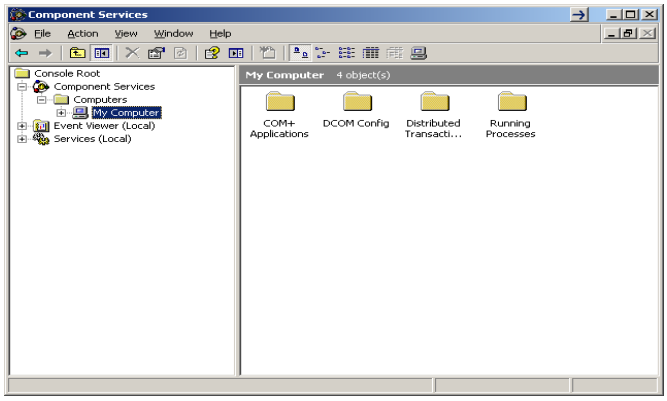
Define a single user on the server machine that all client applications then use to authenticate themselves to the server machine's operating system. For the purpose of this document this user will be called *"**ToolboxSvr**"*.

1. Start **DCOMCNFG** utility

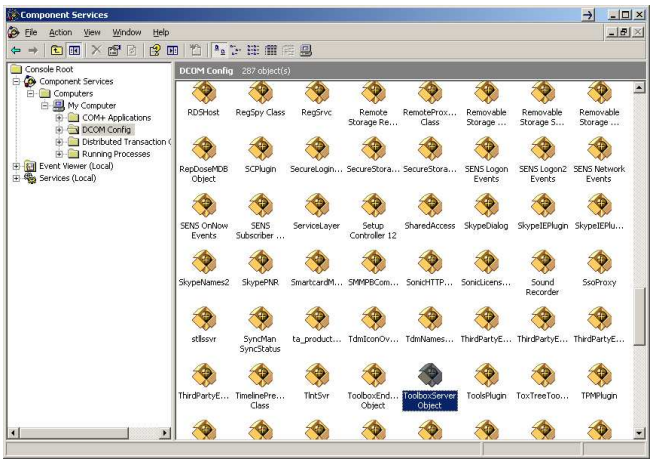


Note: For the 64bit versions of the Windows please use **Start -> Run -> mmc comexp.msc /32** to run DCOM configure utility in 32bit mode

2. Select properties from the popup menu for "**My Computer**".

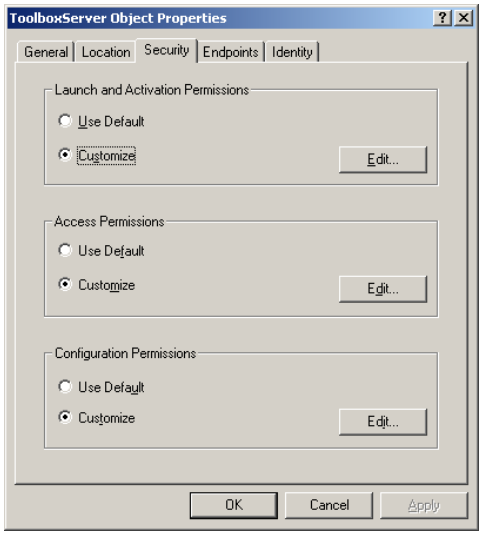


3. Go to the "**DCOM config**" item on the left-hand side tree-view, right click on the "**ToolboxServer Object"** and select **Properties**.

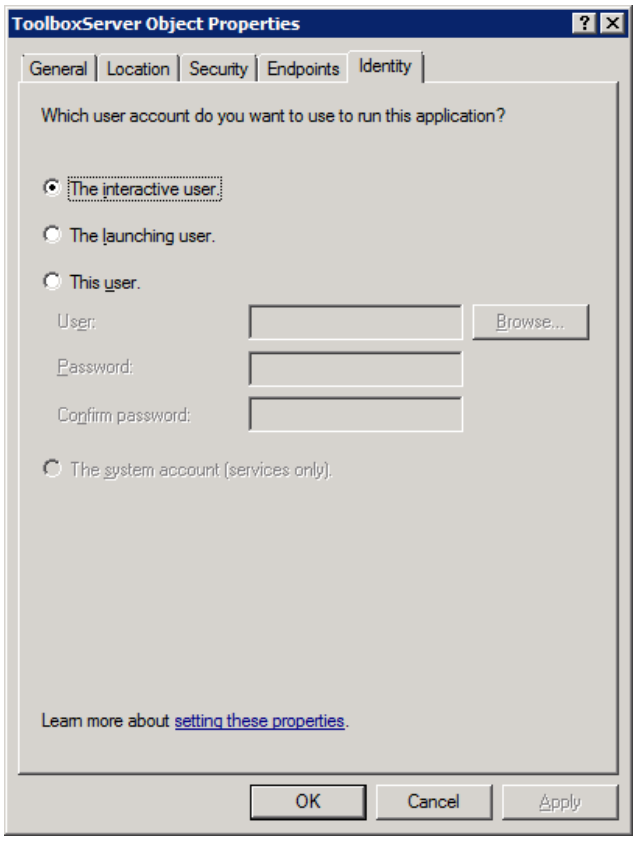


4. On the **Security** tab select "**Customize**" and click on the **Edit** button for the "**Launch and Activation Permissions**" section. Add ***ToolboxSvr*** to the list and check **Allow** for "**Remote Launch**" and "**Remote Activation**" permissions for the user.

5. On the security tab section select "Customize" and click on the **Edit** button for **Access Permission** section. Add ***ToolboxSvr*** to the list and check **Allow** for "**Remote Activation**" permission for the user.



6. From the **Identity** tab select "**The interactive user**". These are the recommended settings. The different **Identity** settings are explained bellow.



The interactive user: server is started in the session of the current user logged onto the system.

pros: Application is started with user interface

cons: If there is more than one logged user the server is not able to start. The logged user may not have the security rights to activate or access the server.

The launching user - not recommended to use

This user - server is started in separate session of the specified user

pros: Application always starts

cons: The user interface is not accessible

3.1.3 Server running domain controller DCOM configuration:

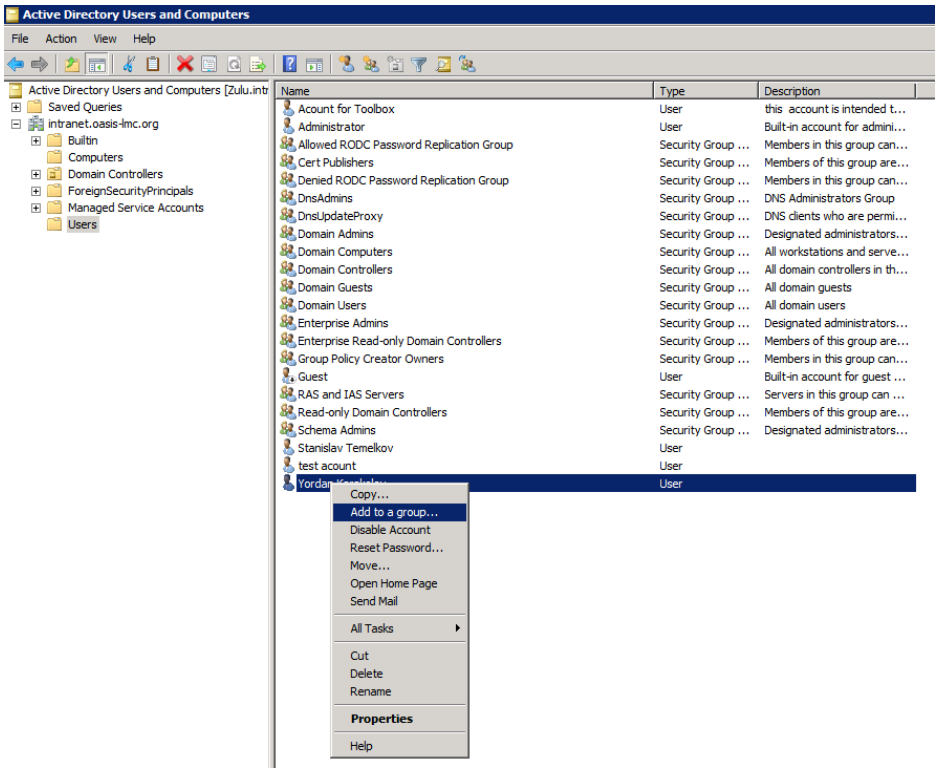
Domain User who will used the server should be added to the "Distributed COM Users" group. The domain is tested on windows 2008R2 Server.

From "Administrative tools" open "Active Directory Users and Computers".

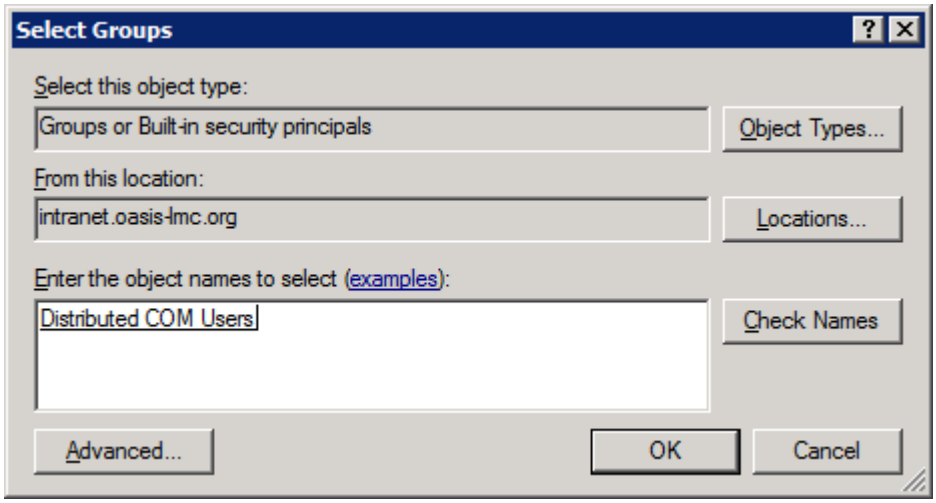
On the right tab select "**Users**"

In the left tab select user and click on right mouse button

On appeared context menu select "**Add to a group**" menu item.



4. Enter "**Distributed COM Users**" in the edit box and then click on "OK" button.

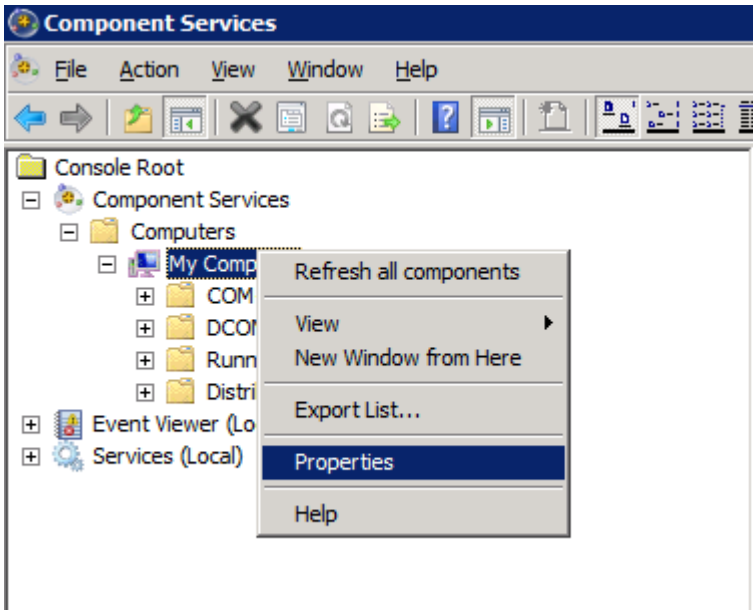


5. Repeat steps 3 and 4 for all users wich have to access Toolbox server.

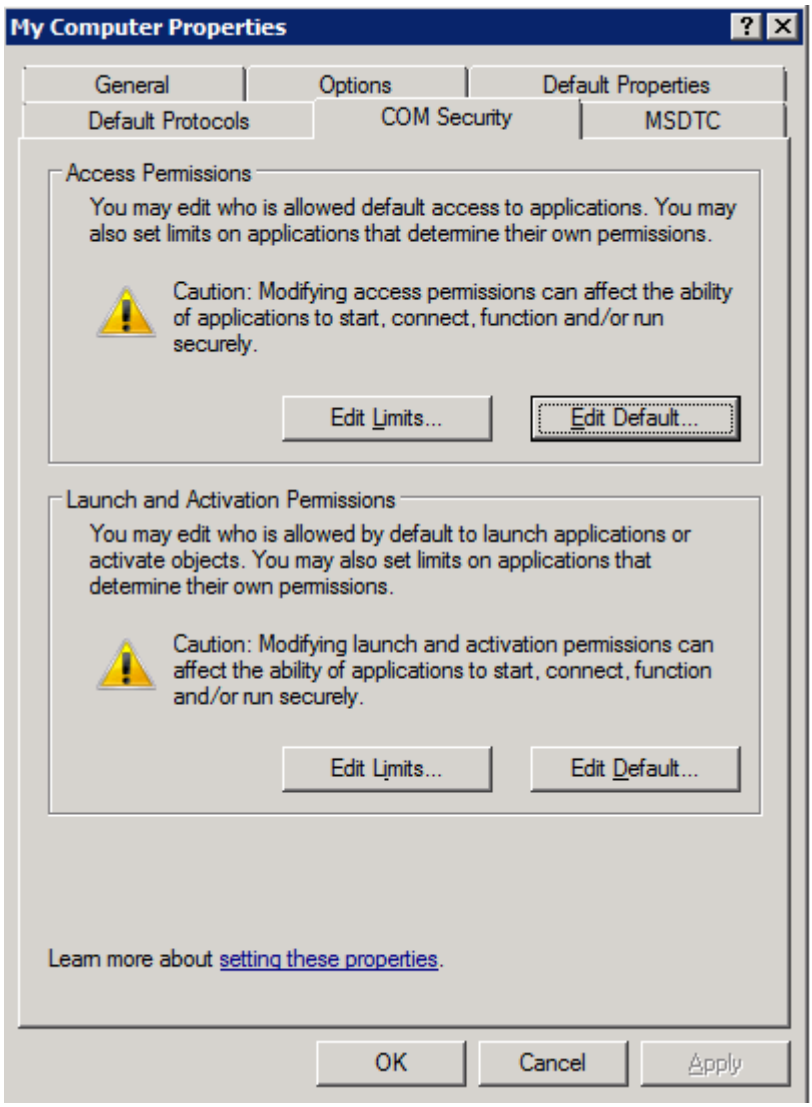
6. Start DCOMCNFG utility Start->RUN ->DCOMCNFG

Note: For the 64bit versions of the Windows please use **Start -> Run -> mmc comexp.msc /32** to run DCOM configure utility in 32bit mode

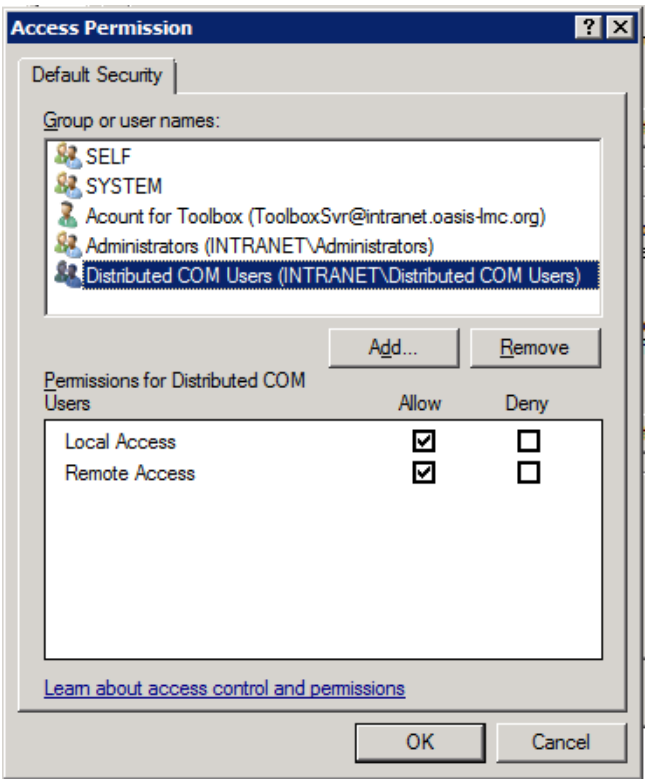
7. Expand Component Services, expand Computers, and right-click My Computer. Select Properties



8. Click Default COM Security



9. Under Default Access Permissions click Edit Default. Make sure "Distributed COM Users" and provide all have Local and Remote Access permissions.



10. Under Default Access Permissions click Edit Limits. Make sure "Distributed COM Users" and provide all have Local and Remote Access permissions.

11. Under **Default Launch Permissions** click **Edit Default**. Make sure **Distributed COM User** " and the user whose authentication credentials will be used to access the COM application all have **Local and Remote Launch** permissions, as well as **Local and Remote Activation** permissions.

12. Under **Default Launch Permissions** click **Edit Limits**.. Make sure **Distributed COM Users**" and the user whose authentication credentials will be used to access the COM

application all have **Local and Remote Launch** permissions, as well as **Local and Remote Activation** permissions

4 Installation of the Toolbox Client

Standalone version of the toolbox can be also used a Toolbox client.

Please unzip the Toolbox installation package on your local disk and run the StartInstall.exe.

4.1 Configuration of the Toolbox Client computer

4.1.1 Client Firewall settings

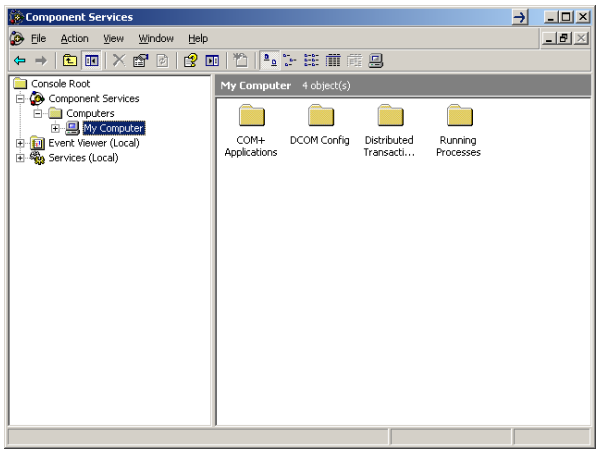
Add Toolbox 2.0 application to firewall's exceptions list.

Add TCP port 135 to firewall exceptions list.

4.1.2 Client DCOM configuration:

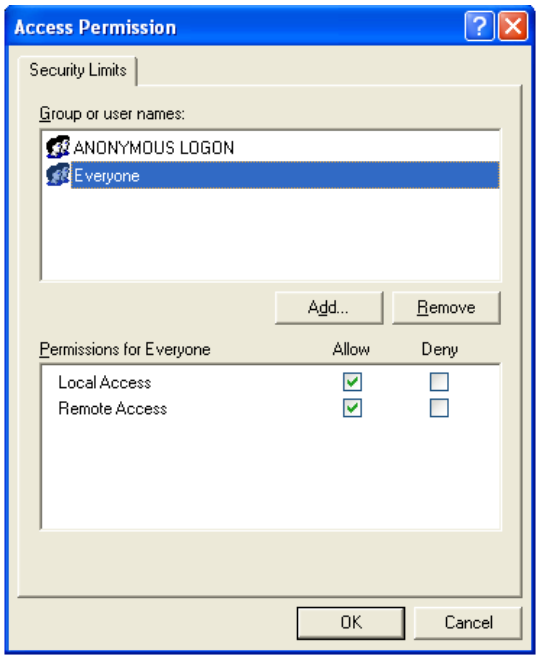
1. Start the **DCOMCNFG** utility (Start Menu -> Control Panel -> Administrative tools -> Component Services or invoke "DCOMCNFG" from the Start Menu's Run menu item)

2. Right click on "**My Computer**" and select **Properties** from the popup menu.

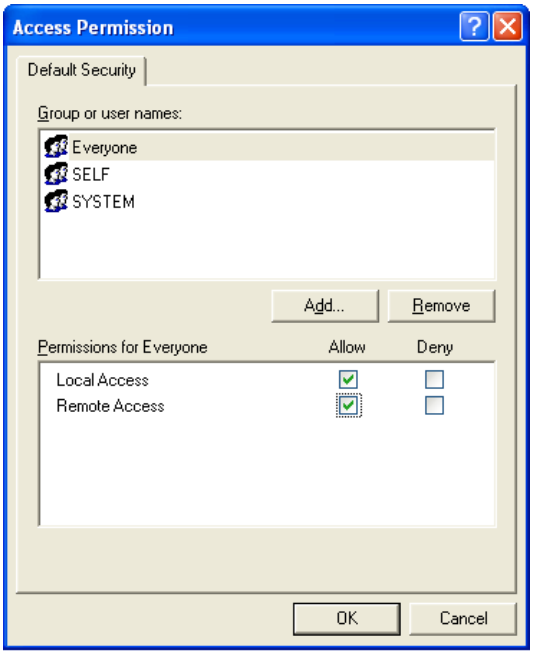


3. Go to "**COM Security**" tab and from the "**Access Permission**" section use the "**Edit Default...**" and "**Edit Limits...**" buttons to change the permissions for security principal "**Everyone**" and "**ANONYMOUS LOGON**".

4. Check "Local Access" as well as "Remote Access" for "Security Limits".



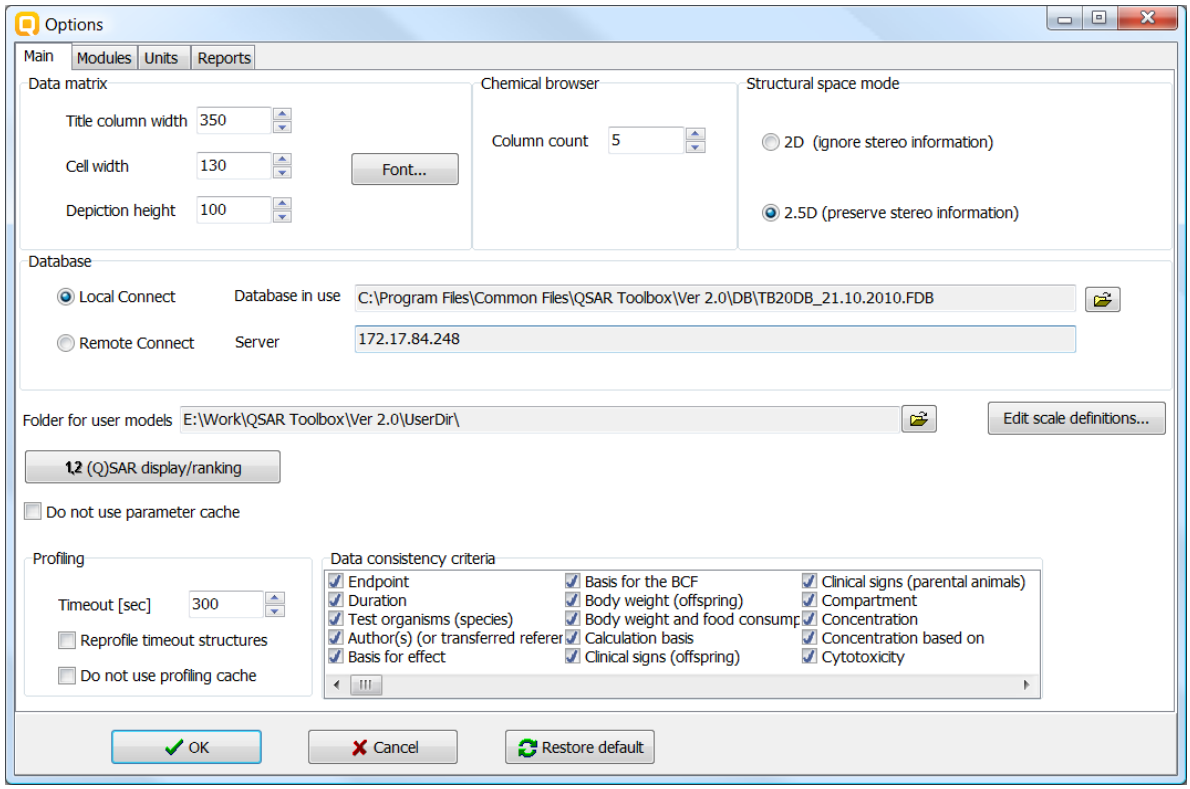
5. Check "Local Access" as well as "Remote Access" for "Default Security".



4.2 Configuration of the client application

Toolbox standalone application can also act as a Toolbox client application. Configuring this requires Toolbox to have "Remote connect" set instead of the default "Local connection" in the Toolbox options. When "Remote connect" is selected for the **Database** the user needs to specify the name or address of machine where Toolbox Server is installed. After this change Toolbox needs to be restarted.

When Toolbox is started as client application the database importing features are disabled. These functions are delegated to the Toolbox server only.



4.3 Connecting to the Toolbox Server

After the client side DCOM is properly set up the Toolbox Client application only needs the IP address (or name) of the Toolbox server.

4.3.1 Non Domain client:

When the Toolbox starts the user is asked to provide credentials for the Toolbox server.

Select "**As User**" and enter username and password of the account who have defined access to the Toolbox Server application on the remote machine for this presentation is the ***ToolboxSvr.***

4.3.2 Domain Client

On the toolbox remote wizard leave the selection "**As current user**" and then click "**OK**" the current user will be used to log to the server.

4.4 Troubleshooting DCOM

4.4.1 Configuration check list

Common for domain and non domain configurations:

DCOM is enabled on both client and the server

Toolbox Server is configured to run in "Interactive mode" (it is possible to define it "as user" but the user interface will not be accessible)

Firewall does not block connections on both client and server.

On the client the firewall is configured to allow Toolbox application inbound and outbound connections and TCP/IP port 135 is open for outbound connections

On the server the firewall is configured to allow ToolboxServer application inbound and outbound connections and TCP/IP port 135 is open for outbound connections

When in Non-Domain configuration:

There is defined user account (for instance "ToolboxSvr") on server and client with same name and password.

The Toolbox account ("ToolboxSvr") is logged into the server.

Toolbox account has privileges in the DCOM configure section to access, launch and activate ToolboxSvr object on both client and the server.

Clients connecting to the server provide user name and password

When in Domain configuration:

All domain users have granted DCOM access, launch and activation rights

The server object runs under an account granted with access, launch and activate rights.

Clients access the server from Toolbox start-up screen as "current user"

4.4.2 Common errors

Error	Possible Issues	Solution
The RPC server unavailable	The computer really doesn't exist. The Windows Firewall on the server is blocking the connection	Add Toolbox server application to the firewall's exceptions list and open TCP/IP port 135.
Access denied	DCOM is not enabled. Client firewall blocks connection. The user does not have remote access to the computer through DCOM.	1. Check if server and client firewalls allow connections. 2. Check if server runs under account that has DCOM rights.
Client is compiled with different server access library...	The client and server versions does not match	Update Toolbox server and Toolbox Client to the latest version
Interface not	The implementation Toolbox	Update Toolbox server and

supported	Server interface of the server differs from the client implementation or the client.	Toolbox Client to the latest version.
Unable to bind client ITBNotify callback interface to the server	Client does not allow callbacks from the server. The server runs under user account with no defined granted DCOM rights on the client.	Grant access, launch and activate permissions to the server's user account on the client.
The server process could not be started because the configured identity is incorrect. Check the User name and Password.	There is no logged user on the server or the logged user does not have granted DCOM rights on the Toolbox Server.	Option 1 : Change the settings of the toolbox server object from DCOMCNFG to work "as user" from the identity. Option 2: Grant DCOM access, launch and activate to the current user logged the system.

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