

Biacore™ X100 software v2.1

Installation Instructions

Introduction

Software v2.1

Biacore™ X100 software v2.1 has improved security and employs a SQL Server database. The functionality for database administration and backup procedures have been updated. Additionally, Biacore X100 software v2.1 is accessed with regular Windows user accounts instead of specific Biacore X100 user accounts.

Note: *It is recommended to upgrade to Biacore X100 software v2.1 because of its improved security.*

Scope of this document

This document provides instructions for the following operations:

- Installing Biacore X100 software, including the SQL Server database where all user data is stored.
- Connecting a second computer to the database on the system controller.
- Migrating the database content from v2.0.2 or v2.0.3 to v2.1.

Installation

Requirements

Installation of the SQL Server database and Biacore X100 software v2.1 require the following:

- A system controller (the computer directly connected to the Biacore X100 instrument) with Windows 10 or 11 Professional or Enterprise operating system, 64-bit US English version.
- The person performing the installation must have administration privileges in the operating system.

- The product key provided upon your Biacore X100 purchase. For upgrade from an older software version, use the product key provided with that version.
- Microsoft .NET Framework 3.5 must be installed on the computer. If Microsoft .NET Framework 3.5 is missing from the computer, the installation instructions are prompted on screen when starting Biacore X100 Control Software or Biacore X100 Evaluation Software.

Note: *Due to the different operating system requirements, Biacore X100 software v2.1 cannot be installed on the same computer as v2.0.1 or earlier.*

Install software

Follow the steps below to install the software. For each step, follow the instructions on the screen and acknowledge any license agreements that are presented.

Step	Action
1	Download the installation files for v2.1 from cytiva.com/support/software/biacore-downloads . Registration is required for the download.
2	If a Biacore X100 database already exists, make a backup before proceeding.
3	Install the database.
4	Install the Control Software.
5	Install the Evaluation Software.
6	Install the Plus Package if it is included in your system purchase.

Database security

Windows authentication

In Biacore systems that use Windows authentication for login, a single login dialog provides access to both the software and the database. Standard Windows user accounts are used for authentication.

Any local Windows or Active Directory account can log in to the Biacore X100 software, independently of the Windows account logged in to Windows OS, provided that the account logging in to the software is able to access the database.

Integrated Windows authentication provides the following features:

- All user management, including passwords, is handled in Windows and/or Active Directory.
- The database connection string used for connecting the software with the database does not contain any user credentials.

- Users can be organized in Windows groups to manage access to the software and access rights in the database, see below.

Biacore X100 user groups

There are three types of users in Biacore X100. Only members of any of these user groups can access the Biacore X100 software.

User group	Access
<i>BiacoreX100Users</i>	<ul style="list-style-type: none"> • Can create runs, methods and evaluations • Can create new sub-folders in their own user folder • Are able to view other users' data, but can delete only their own data
<i>BiacoreX100Administrators</i>	<ul style="list-style-type: none"> • Can do the same as <i>BiacoreX100Users</i> • Are able to delete other users and other users' data
<i>SQLServerX100DatabaseAdministrators</i>	<ul style="list-style-type: none"> • Can do the same as <i>BiacoreX100Administrators</i> • Can restore databases <p>Note: <i>When a Biacore X100 database has been installed, all future updates must be done by a member of the SQLServerX100DatabaseAdministrators group.</i></p>

Change default local database configuration

When installing a local Biacore X100 database for the first time, the Windows user group **Authenticated Users** is assigned to the local Windows groups **BiacoreX100Administrators** and **SQLServerX100DatabaseAdministrators**. This results in all Windows users having access to the local Biacore X100 database, with database administrator privileges.

Follow the steps below to replace the default configuration with the configuration recommended by Cytiva.

Step	Action
1	<p>In the Computer Management application in Windows (Local Users and Groups/Groups), remove Authenticated Users from the group BiacoreX100Administrators, and assign the relevant Biacore system users to the appropriate database role by adding their Windows or Active Directory user account to the corresponding Windows user group.</p> <p>Note: <i>The procedure requires Windows administrator rights.</i></p>
2	Remove Authenticated Users from the SQLServerX100DatabaseAdministrators group.
3	Assign at least one Windows or Active Directory user as SQL Server administrator by adding the user to SQLServerX100DatabaseAdministrators . The SQL Server administrator should preferably not be a Biacore system user, as the role will have full database privileges.
4	<p>Sign out of Windows and then sign in again.</p> <p><i>Result:</i> All changes of the Biacore X100 user groups come into effect.</p>

Accessing a local database from another computer

Introduction

This section provides instructions for connecting to the database on the system controller from another computer. This is typically required when the Biacore X100 Evaluation Software is used on an additional computer to evaluate data stored on the system controller. The default license permits installation on the system controller and one additional computer.

Install the Evaluation Software and the optional Plus Package on the additional computer. You should not install the database on the additional computer.

Enable connection to the SQL Server database from another computer

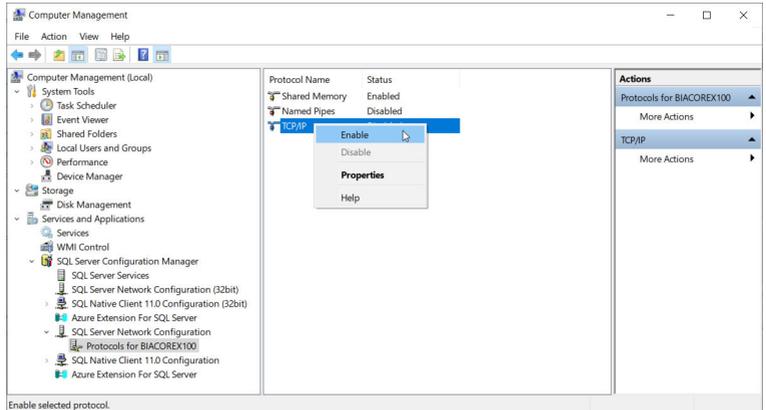
A system controller has by default Windows firewall activated. This prevents unauthorized access to the computer. Cytiva recommends not to deactivate the Windows firewall.

Follow the steps below to configure the SQL Server database and the firewall on the system controller to allow communication with another computer.

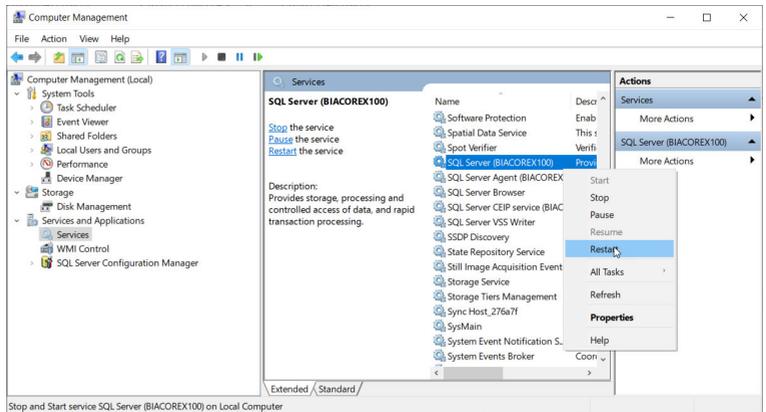
Note: The additional computer as well as the user logging on to the Biacore X100 software must be in the same domain as the system controller.

Step Action

- 1 In the Computer Management application, right-click **TCP/IP** and select **Enable**.

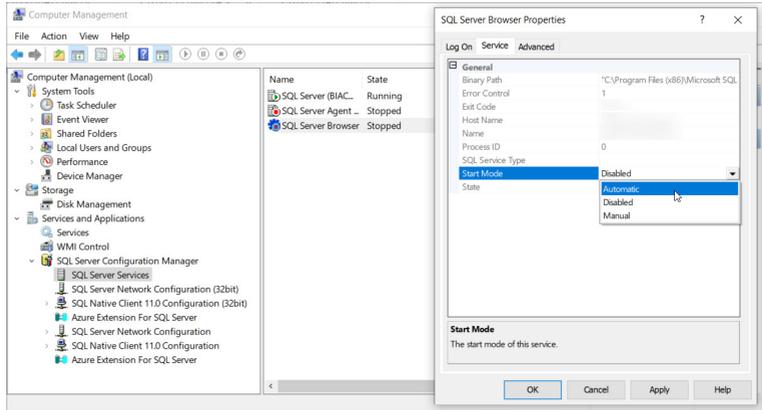


- 2 Right-click **SQL Server (BIACOREX100)** and select **Restart**.



Step Action

- 3 Double-click **SQL Server Browser** and set **Start Mode** to **Automatic**. Click **OK**.



- 4 Open the Windows Defender Firewall settings. Select **Advanced settings**.
- 5 Select **Inbound rules**, then select **New rule**.
- 6 Select **Program**, and then click **Next**.
- 7 Specify the file path for the SQL Server program. The default path is C:\Program Files\Microsoft SQL Server\MSSQL16.BIACOREX100\MSSQL\Binn\sqlservr.exe. Click **Next**.
- 8 Select **Allow the connection**. Click **Next**.
- 9 Select all options: **Domain**, **Private** and **Public**, and then click **Next**.
- 10 Type SQL Express Dynamic Port as the name of the rule. Click **Finish**.
- 11 Select **New rule** to create an additional rule.
- 12 Select **Port**, and then click **Next**.
- 13 Select **UDP**. Enter 1434 in the **Specific Local Ports** field. Click **Next**.
- 14 Select **Allow the connection**, and then click **Next**.
- 15 Select all options: **Domain**, **Private** and **Public**, and then click **Next**.
- 16 Type SQL Express UDP Port as the name of the rule. Click **Finish**.

Create database connection for additional computer

Follow the steps below to create a database connection for the additional computer. Contact your database administrator for information about the connection details.

Step	Action
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- 1 In the login dialog, click **Edit** to access the database settings.

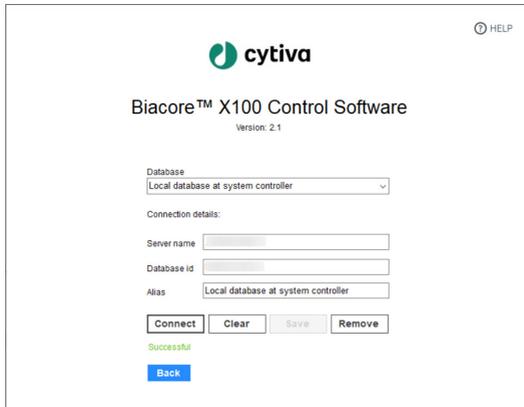


- 2 Under **Connection details**, enter server name and database id, and an alias for the database connection to be used in the **Database** drop-down list.

Note:

Make sure to use an alias that does not already exist in the drop-down list, otherwise the existing database connection with that alias is edited.

Step	Action
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- 3 (Optional) Test the database connection:
 - a. Click **Connect**.
 - b. In the pop-up, type your user credentials to test the connection.
 - c. Click **Connect** to test the database connection and close the pop-up.
- 4 Click **Save** to save the database connection.
- 5 Click **Back** to return to the logon dialog.

Database migration from v2.0.2 or v2.0.3

Database migration

A migration of the database content is required to keep having access to previous acquired data, when upgrading to Biacore X100 Software v2.1 from v2.0.2 or v2.0.3.

Migration deletes any existing content in the v2.1 database. It is therefore important that migration is performed directly after installing the v2.1 database, before any new content is created in the database.

Tip: *Make a backup of the current database before installing the Biacore X100 v2.1 database.*

User account migration

The migrated data is organized in the same way as in previous versions, but the data is connected to the previous Biacore X100 user accounts. New data created in v2.1 is associated with the new Windows or Active Directory user accounts. As a result, there might be duplicates of usernames in the folder structure in the future.

To avoid users with identical usernames, it is recommended to rename the Biacore X100 user accounts in **Tools** → **Preferences** in v2.0.2 or v2.0.3 before installing v2.1. It is not possible to rename them in v2.1.

If identical usernames are detected after a new user has logged on to v2.1, a migrated username can be deleted. The migrated data should be stored under a new username. Follow the steps below to migrate the data and delete a migrated username.

Step	Action
1	In the Quick Filter view, export all data created by the migrated user by right-clicking each data item and selecting Export → To other database .
2	Click the new username and create a folder by clicking the New folder icon (). Repeat until the appropriate number of folders have been created.
3	Select the folder into which you want to import the file.
4	Click the Import button.
5	Browse to the files you want to import, and click Open .
6	Delete all items and folders under the migrated username. This requires a BiacoreX100Administrator role.
7	Delete the migrated username. This requires a BiacoreX100Administrator role.

Requirements

The following requirements must be met for database migration:

- The user performing the migration must have Administration privileges on the system controller.
- The user performing the migration must be a member of the user group **SQLServerX100DatabaseAdministrators**. See [Change default local database configuration, on page 3](#) for information on how to add users to specific Biacore X100 user groups.
- Biacore X100 software v2.1 has been installed on the system controller where the Biacore X100 Oracle database (v2.0.2 or v2.0.3) is installed.

- The v2.1 database has not been used to store any user data. Migration overwrites any previous database content.

Note: *SQL Server Express has a maximum limit of 10 GB, while the database used in Biacore X100 v2.0.2 and v2.0.3 had a maximum limit of 11 GB. Some data may need to be deleted in the old database for a successful migration.*

Migrate the database

Follow the steps below to migrate the content of a Biacore X100 v2.0.2 or v2.0.3 database to a Biacore X100 v2.1 database on the same computer.

Step	Action
1	<p>Right click <code>Migrate from Oracle to SQL Server.bat</code> file within the installation folder <code>C:\Program Files (x86)\Biacore\Biacore X100 Database\Oracle to SQL Server Migration</code> and select Run as administrator.</p> <p><i>Result:</i> A window appears showing the migration progress.</p>
2	<p>If data exist in the new SQL database before migration, deletion of the data must be approved before the migration can continue. Type Y and press Enter if a question regarding existing data appears in the window.</p>
3	<p>Wait until the migration is complete. The migration script confirms that all files have been transferred at the end of the process.</p>
4	<p>Uninstall the Oracle database.</p> <p>Note: <i>Store the Oracle database backups according to your backup retention policy.</i></p>

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