BD FACSMelody™ Cell Sorter Installation and Security Guide
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Introduction

This chapter covers the following topics:

• About this guide (page 6)
• Technical support (page 7)
# About this guide

<table>
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<tr>
<th>Overview</th>
<th>This guide provides recommendations to customers regarding software installation and security for BD FACSChorus™ software, which is installed on the workstation for the BD FACSM elody™ cell sorter.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who should read this guide</td>
<td>All administrators of BD FACSM elody workstations, including lab managers and information technology (IT) professionals, should read this guide.</td>
</tr>
<tr>
<td>Guide contents</td>
<td>This guide includes:</td>
</tr>
<tr>
<td></td>
<td>• Instructions for backing up data, installing new versions of BD FACSChorus software on the BD FACSM elody workstation computer, and troubleshooting installation</td>
</tr>
<tr>
<td></td>
<td>• Recommendations, responsibilities, warranty, and liability regarding the installation and maintenance of virus protection software and Microsoft® Windows® security updates and hotfixes</td>
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<td>• Guidelines for use of virus protection software</td>
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<td>• Settings for Microsoft Windows limited user accounts on BD FACSM elody workstations</td>
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<td></td>
<td>• Management of software firewall settings</td>
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<td></td>
<td>• Guidelines on the use and management of removable media</td>
</tr>
<tr>
<td>Where to store this guide</td>
<td>Store this guide near your BD FACSM elody workstation for reference.</td>
</tr>
<tr>
<td>Additional documentation</td>
<td>The following table lists documents that you might need when working on the BD FACSM elody system:</td>
</tr>
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</table>
Technical support

If assistance is required, contact a BD Biosciences technical support representative or supplier. Visit our website, bdbiosciences.com, for up-to-date contact information.

When contacting BD Biosciences, have the following information available:

- Product name, part number, and serial number
- Any error messages
- Details of recent system performance
Installing BD FACSChorus software

The latest version of BD FACSChorus software is installed on the workstation computer when the BD FACSM elody system is delivered. When a new version of the software becomes available, BD provides an installer for the updated software.

This chapter covers the following topics:

- Backing up your data (page 10)
- Updating BD FACSChorus software (page 13)
- Troubleshooting (page 14)
Back up your data

Before you install a new version of BD FACSChorus software, you should back up all the data to another location such as an external hard drive.

Before you begin

- Verify that the instrument and computer are on and that BD FACSChorus software and all other applications are closed.
- Verify that you have Microsoft Windows administrator privileges for the system.

Procedure

To back up your data:

1. Navigate to the Microsoft SQL Server Management Studio at the following location and open it:
   
   C:\Program Files (x86)\Microsoft SQL Server\120\Tools\Binn\ManagementStudio\Ssms.exe

2. Log in using your administrator account.

3. Expand the Databases folder to reveal the BD.Simplexity.SqlDb database.
4. Right-click **BD.Simplexity.SqlDb database** and select **Tasks > Back Up**.

The **Back Up Database** window opens.

5. Select the location for your backup files.
You can keep the default location or change the location by clicking **Add** and entering a new path.

6. Click **OK** to complete the data backup.

7. Copy all files in the following folders to a folder on the workstation:
   - C:\ProgramData\BD\FACSChorus\Recordings\n   - C:\ProgramData\BD\Configuration\n
   BD FACSChorus software uses a sparse file technology for efficient storage of files on the hard disk. These files take less space than shown in the Windows folder properties. However, file copying and transferring will be time-consuming based on the amount of data recorded.

8. Store the copied folders as a backup in a secondary location off the workstation.

   During backup, use a sparse-aware backup utility and ensure that the destination file system supports sparse files, otherwise the backup file will be quite large. The destination file system
(for example, an external hard drive) should be formatted with the NTFS file system.

### Updating BD FACSChorus software

After you have backed up your data, you are ready to install a new version of BD FACSChorus software on the workstation.

**Before you begin**

Verify that the instrument and computer are on and that BD FACSChorus software and all other applications are closed.

Verify that you have Microsoft Windows administrator privileges for the system.

Verify that you have backed up your data. See **Backing up your data (page 10)**.

**Note:** Do not change the computer name for the BD FACSM elody workstation. Doing so can affect the performance of the BD FACSM elody instrument and BD FACSChorus software.

**Note:** Do not change the internet protocol (IP) addresses of the instrument or workstation. These addresses are required for communication between the workstation and the instrument.

**Note:** Do not disable, delete, or change the properties of the svc_simplexity user account. This account is required to run BD FACSChorus software.

**Procedure**

To install a new software version:

1. Navigate to the location of the BD FACSChorus installer and double-click **BD.FACSChorus.Installer.exe** to start the installer.

2. Select I agree to the license terms and conditions and click **Install**.
During installation, the BD Firmware Updater checks the instrument connection and updates the firmware.

3. Follow the instructions in the wizard.

4. If the wizard asks for a restart, restart the computer. The installation will resume from where it left off.

   During the installation, the original version of BD FACSChorus software is deleted and the new version is installed.

   When installation is complete, the ReadMe file is displayed. You can view the ReadMe file at a later time from the BD FACSChorus Help menu or the default location:

   C:\Program Files\BD\FACSChorus\App\assets\ReadMe.pdf.

   If you selected a different destination folder in the wizard, then you can view the ReadMe file in the folder you selected.

5. Carefully review the ReadMe file to view details about BD FACSChorus software.

6. Click Finish and then Close to complete the installation.

   The new software will have access to the existing data files. There is no need to run QC beads after software upgrade.

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**Troubleshooting**

If there are problems with the installation, use the information in this section to fix the problem.

**About this task**

This task requires Microsoft Windows administrator privileges.
The following table displays the error message, its possible cause, and suggested solution.

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Possible Causes</th>
<th>Recommended Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error executing SQL</td>
<td>The workstation computer name was changed</td>
<td>Change the computer name to the correct setting. See Restoring the workstation computer name (page 15).</td>
</tr>
</tbody>
</table>

**Restoring the workstation computer name**

If the computer name of the BD FACSM Melody workstation was changed, use the following procedure to recover.

**To restore the workstation computer name:**

1. Enter SQL in the Windows search bar, select **SQL Server Management Studio**, and enter `.\SQLEXPRESS` in the **Server name** field.

2. Click **Connect**.

3. In the Object Explorer, select **Security > Logins**.

4. Record the computer name on which the svc_simplexity user is located. In the following example, the computer name is DESKTOP-BMAGLQ1.
5. Close the SQL Server Management Studio.

6. Open Control Panel > System.

7. Click Change settings.

8. In System Properties, click Change, rename the computer to the name you found in Step 4, and click OK to confirm.
Workstation setup and security

This chapter explains how to ensure that the BD FACSM elody instrument and BD FACSChorus software can communicate efficiently, while keeping the system virus-free and maintaining a secure connection with your internal computer network.

This chapter covers the following topics:

- BD software policies (page 18)
- Virus protection software (page 19)
- Microsoft Windows update guidelines (page 20)
- Microsoft Windows limited user account settings (page 21)
- Removable media guidelines (page 21)
- Software firewall and BitLocker encryption (page 22)
# BD software policies

**Introduction**

This information applies to BD FACSM Melody workstations running BD FACSChorus software on the Microsoft Windows 10 operating system (OS).

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**Responsibility, warranty, and liability**

BD Biosciences delivers software and workstations that are intended for running the instruments supplied by BD Biosciences. The following tasks are the user’s responsibility:

- Install, maintain, and update approved Windows security updates and hotfixes on all workstations.
- Ensure that all electronic files (including software and transport media) are virus-free.
- Maintain up-to-date virus protection software.
- Take other reasonable measures to secure access to the system.

BD Biosciences has tested certain virus protection software and the information herein is based on the results of those tests. BD Biosciences will not be liable for any loss of data, due to ransomware or other viruses, or any other damage whatsoever without regard to whether or not you are running up to date versions of Windows Defender or Windows security updates.

BD Biosciences is not liable for any claims related to or resulting from failure to install and maintain Windows security or from failure to install and maintain virus protection.

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**Testing virus protection software**

The guidelines in this document are based on tests performed using Windows Defender virus protection software version 1.265.416.0, 1.267.413.0, 1.267.939.0, and 1.267.1343.0. BD Biosciences does not claim that future versions of Windows Defender virus protection software will be compatible with these guidelines.
Chapter 3: Workstation setup and security

Virus protection software

Introduction
This section provides general guidelines for BD FACSM elody workstations. Follow these guidelines to reduce the risk of affecting the performance and functionality of BD FACSCChorus software.

Installation
Windows Defender is pre-installed and pre-configured on BD FACSM elody workstations.

Scanning guidelines
The following are guidelines for scanning:

- The virus protection software’s directory scan is processor-intensive and could adversely affect the performance of BD FACSCChorus software if run simultaneously. Ensure that the following folders are excluded from on-access scanning.

<table>
<thead>
<tr>
<th>Software</th>
<th>Files and folders</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD FACSCChorus software v1.0 and later running on Windows 10</td>
<td>C:\Program Files\BD\FACSCChorus</td>
</tr>
<tr>
<td></td>
<td>C:\ProgramData\BD</td>
</tr>
<tr>
<td></td>
<td>C:\Program Files\Microsoft SQL Server</td>
</tr>
</tbody>
</table>

Caution! BD Biosciences is not responsible for data corruption or loss if full-system scanning occurs while BD Biosciences software is running.

- To prevent unnecessary scanning by the on-access scanner, do not insert removable storage media or try to access information on such media while BD FACSCChorus software is running.

Virus detection
If the software detects a virus:

- Move all infected files to a quarantine folder.
- If BD FACSCChorus software becomes infected, reinstall it.
- Consult your IT department about whether to delete the infected files.
Upgrading antivirus software might cause several changes in the configuration of the software and the exclusion list for the on-access scanner. We suggest that you verify that the recommended configuration settings and exclusion list have not been altered by the software upgrade.

If you follow these guidelines, but the performance and functionality of BD FACSChorus software is still affected, contact your virus protection software vendor for additional software-specific guidelines.

### Microsoft Windows update guidelines

**Introduction**

This section describes how to manage Windows 10 updates and hotfixes on BD Biosciences workstations without affecting the performance or functionality of BD FACSChorus software.

**Before you begin**

Contact your company's IT system administrator for the download and installation of Windows security updates and hotfixes on workstations.

**Update and hotfixes policy**

Follow these guidelines to manage Windows 10 updates and hotfixes:

- Windows 10 initiates mandatory auto-updates (new features and security patches) when connected to the internet. A defer button instructs the system to defer updates for up to two major update releases before Microsoft OS support expires. If the OS is within two versions of the latest, critical patches are applied automatically, even if the defer button is enabled. Once the system is more than two OS versions out-of-date, it cannot load critical patches until it is upgraded to an OS within two releases of the latest version. The system continues to work
even if the OS updates have expired and there is no Microsoft support.

- Your IT system administrator should test and approve the Windows security updates and hotfixes.

### Microsoft Windows limited user account settings

**Introduction**

Limited user accounts provide control over users’ ability to add or remove software, make changes to workstation security settings, and perform other tasks on BD FACSMelody workstations.

**Security permission settings for user groups**

Windows limited user accounts must be members of the BUILTIN\Users Windows Group to run BD FACSChorus software.

**Security permission settings for folders**

Windows limited user accounts must have full access to the following folders.

<table>
<thead>
<tr>
<th>Software</th>
<th>Folders</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD FACSChorus software v1.0 and later running on Windows 10</td>
<td>C:\Program Files\BD\FACSChorus</td>
</tr>
<tr>
<td></td>
<td>C:\ProgramData\BD</td>
</tr>
<tr>
<td></td>
<td>C:\Program Files\Microsoft SQL Server</td>
</tr>
</tbody>
</table>

### Removable media guidelines

**Introduction**

This section describes BD Biosciences guidelines for the use of removable media.
Virus protection
Windows Defender is configured with on-access scanning and scheduled full-system scanning of all removable media. To prevent adverse performance of BD FACSChorus software, install removable media only when you are not running any BD Biosciences software.

User access restriction
BD FACSM elody workstations require the use of one or more USB ports to connect to the instrument. Do not disable the USB ports on the BD FACSM elody workstation.

If you want to restrict users from accessing removable media on the workstation, follow Microsoft’s recommendations to prevent users from connecting to USB storage devices. Go to support.microsoft.com.

Software firewall and BitLocker encryption

Introduction
Use the information in this section to provide secure connections between the BD FACSM elody workstations and your company’s internal network.

Software firewall settings
BD FACSM elody workstations ship with the Windows Firewall on and pre-configured with the needed firewall exclusions.

Make sure that the FTP server only communicates as Private through the Windows firewall.

BitLocker encryption
BD FACSM elody workstations are shipped with BitLocker drive encryption disabled. BD FACSChorus software was tested by enabling full-disk encryption with Microsoft BitLocker® version 2.0 for Windows 10. BD Biosciences does not claim that future versions of BitLocker will be compatible with these guidelines.