



BridgeLink Quick Start Guide Windows

For New Installations of BridgeLink 26.9.0

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CHAPTER 1

About This Guide

BridgeLink is Innovar Healthcare's integration platform. It moves messages between the systems in your organization and lets you build, run and watch those connections, called channels, from a web browser.

The steps here take one Windows server from download to a running BridgeLink 26.9.0 server that you manage in WebAdmin.

If you would like a hand with any part of the install, Innovar Healthcare's professional services team can help with as much or as little of it as you want.

What You Install

Piece	What it is	Runs as	Default port
BridgeLink server	The integration platform itself: your channels and the service that runs them	The Windows service BridgeLink Service , under the virtual account <code>NT SERVICE\blservice</code> unless you choose another account	8443 (HTTPS) and 8080 (HTTP)
WebAdmin	The browser-based tool you use to manage the server	The Windows service BridgeLinkWebAdmin , under the LocalSystem account	8444 (HTTPS)
Database	Where BridgeLink keeps channels, messages, events, users and settings	Your own PostgreSQL, MySQL, SQL Server or Oracle database	Set by your database

HTTPS is the encrypted form of a web connection.

Open port **8443** on the BridgeLink server to other machines only if WebAdmin runs on another machine or other programs call the BridgeLink API. Channels that listen for connections, such as MLLP or HTTP listeners, need their own ports opened. Port **8080** is BridgeLink's plain-HTTP port; nothing in this guide uses it, so keep it closed to other machines.

Decide These First

- **Which database BridgeLink uses.** Use your own external database, not the default Derby database. See [Choosing and Connecting the Database](#). Have an empty database and a login for BridgeLink ready before you install.
- **Which Windows account runs the BridgeLink service.** The installer's default is a built-in virtual account, `NT SERVICE\blservice`, which needs no preparation. You need an

account of your own only if BridgeLink must reach domain resources, such as SQL Server with Windows authentication or a shared folder on another server. See [The Service Account](#).

- **Which ports BridgeLink and WebAdmin use.** Browsers reach WebAdmin on [8444](#). WebAdmin reaches BridgeLink on [8443](#).

Requirements

- A 64-bit Windows server. WebAdmin needs 64-bit Windows 10 or later, including the Windows Server editions built on the same platform version.
- An account with administrator rights, to run the two installers. This is not the account the service runs as.
- A 64-bit Java runtime, installed on the server before you run the BridgeLink installer. The installer does not include Java. See [Before You Run the Installer](#) for the versions to use.
- An external database server with an empty database for BridgeLink
- A current browser for WebAdmin: Chrome, Edge or Firefox 120 or later, or Safari 17 or later

CHAPTER 2

Getting the Software

BridgeLink downloads are on the BridgeLink website. Customers with an Innovar Healthcare customer portal account can also download them from the portal.

1. Open <https://www.bridgelink.net/download> in a browser.
2. Select **Windows**.
3. Find the **BridgeLink Server** card and confirm it shows version **26.9.0**.
4. Click **Installer (.exe)** to download it.

You do not need a separate WebAdmin download for this server. The BridgeLink installer carries the WebAdmin installer and offers to run it when it finishes. The separate **BridgeLink WebAdmin Standalone** download is for putting WebAdmin on a different machine.

Installer, MSI or ZIP

Package	What you get	Use it when
Installer (.exe)	A guided setup that runs on the Java you install first (Java 21 recommended), asks for the ports and the service account, installs BridgeLink Service , gives the service account the rights it needs, and offers to install WebAdmin at the end	Almost every install. This is the recommended package.
MSI package (.msi)	The same installer in MSI form	Your IT team deploys software with an MSI-based tool
Portable ZIP (.zip)	The BridgeLink files only: no Java and no Windows service. The WebAdmin installer is included but does not run for you	A quick evaluation, or a machine where your team manages Java and services by its own methods

The rest of this guide follows the installer. If you choose the ZIP, see [Using the Portable ZIP Instead](#) in the next chapter.

CHAPTER 3

Installing BridgeLink

Before You Run the Installer

Install a 64-bit Java 21 runtime on the server first. Java 21 is recommended: use an OpenJDK build such as Eclipse Temurin (from Adoptium), Amazon Corretto or Azul Zulu. Java 17 is also supported when BridgeLink uses an external database; the default Derby database needs Java 21. Do not install a Java newer than 21: BridgeLink 26.9 does not use one.

Check that Java is installed:

1. Click **Start**.
2. Type `cmd` and press **Enter**.
3. Run this command in Command Prompt:

```
java -version
```

4. Check that the output shows version 21 (or 17) and the words **64-Bit**.

The BridgeLink installer does not include Java. If it cannot find one, it shows a dialog titled **install4j Wizard** that says it could not find a Java Runtime Environment and asks you to locate a suitable 64-bit JRE (minimum version 17, maximum version 21), with **Locate** and **Cancel** buttons. Click **Cancel**, install Java, and run the installer again.

By default, the installer runs BridgeLink under a built-in Windows account, **NT SERVICE\blservice**. Windows manages that account, it needs no password, and the installer gives it everything it needs, so most installs need no preparation.

You need an account of your own only if BridgeLink must reach network resources as a domain user, for example SQL Server with Windows authentication, or a shared folder on another server. In that case, create the account before you run the installer, for example **MYDOMAIN\svc-bridgelink**, where **MYDOMAIN** is your Windows domain's name. Do not add it to the **Administrators** group. [The Service Account](#) explains why.

Run the Installer

1. Double-click the downloaded **BridgeLink_windows-x64_26_9_0.exe** file.
2. If Windows asks whether to allow the app to make changes, check that the publisher is Innovar Healthcare Systems Group, Inc, then click **Yes**. The built-in Administrator account gets no prompt.
3. On the welcome screen, click **Next**.
4. On **Select Destination Directory**, keep the install folder **C:\Program Files\BridgeLink**, or choose another folder.

5. Click **Next**.
6. On **Windows Service Account**, keep **Log on as** set to **Virtual service account**. To use an account of your own instead, choose **Custom account...**, then type the account in **Username** and its password in **Password**. Type a domain account as `MYDOMAIN\svc-bridgelink` and a local account as `.\svc-bridgelink`. A name with no `.\` or domain in front does not work, and neither does the `name@computer` form. Type the password carefully: the installer does not check it, and a wrong one only shows when **BridgeLink Service** fails to start with a logon error.

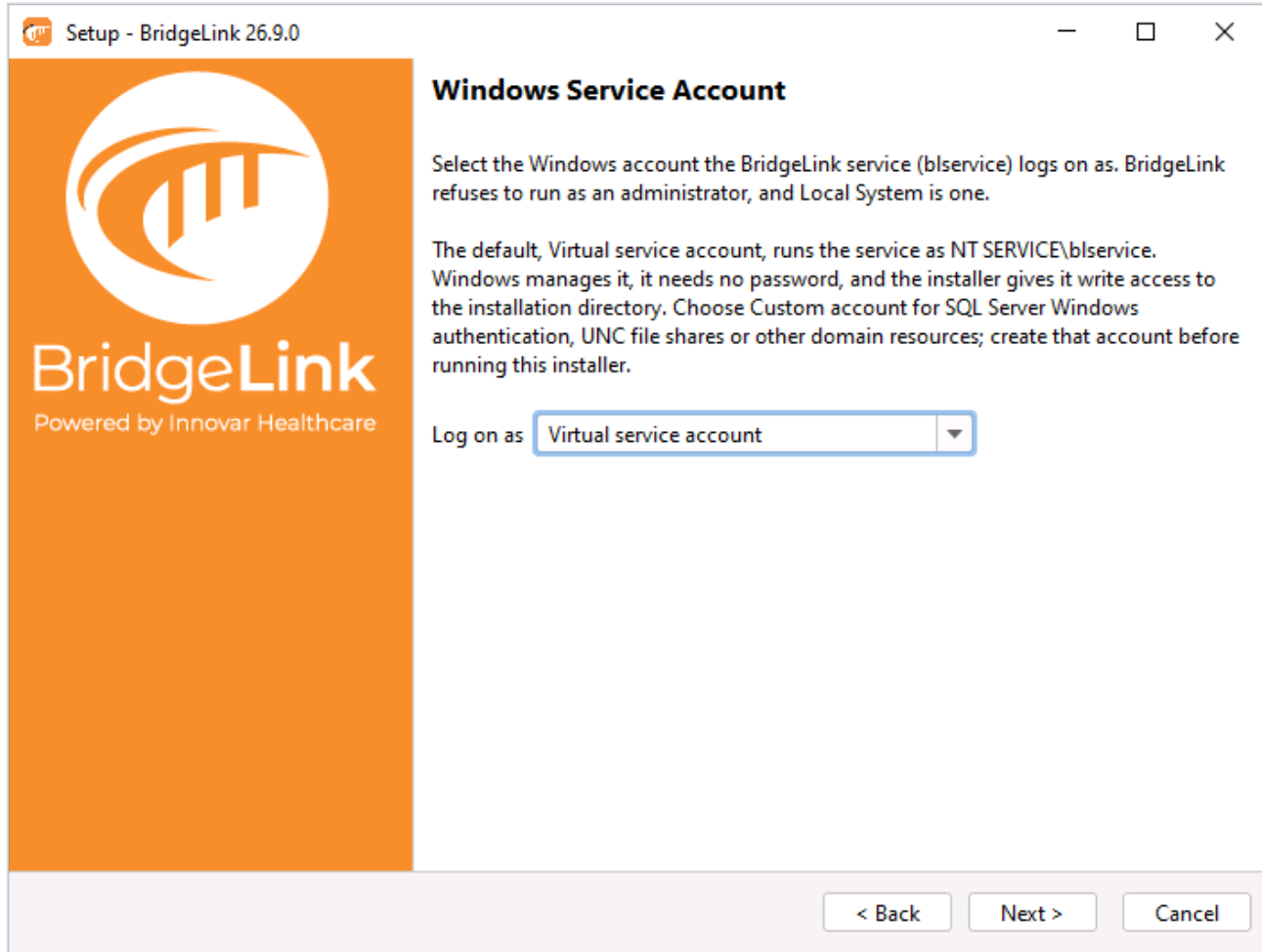


Figure 1: The BridgeLink installer's Windows Service Account screen, with Virtual service account selected in the Log on as list.

Do not choose Local System (not recommended). BridgeLink will not start as Local System, because Windows treats that account as an administrator.

7. Click **Next**.
8. On **BridgeLink Administrator Ports**, keep **Administrator Port** at **8443**.
9. Keep **Web Start Port** at **8080**.

10. Click **Next**.
11. On **Install Plugins to BridgeLink**, click **Next**. You can add plugins later.
12. Wait while the files copy.
13. On the last screen, clear **Run BridgeLink**. You connect the database before BridgeLink starts for the first time.
14. Leave **Install BridgeLink WebAdmin** checked.
15. Click **Finish**.

The MSI package shows the same screens in the same order.

The WebAdmin setup wizard opens next. Complete it using [Run the WebAdmin Setup Wizard](#), then return to [Choosing and Connecting the Database](#). You can also close the wizard and run it later. Do not sign in to WebAdmin until you finish [Starting BridgeLink for the First Time](#).

The installer gives the account it sets up the **Log on as a service** right and **Modify** permission on the install folder. That is true for the virtual account and for your own, so you do not need to set either by hand. The last screen confirms the account, for example: [The BridgeLink service \(blservice\) logs on as NT SERVICE\blservice](#). If the installer cannot set the account, the last screen shows a warning instead, and BridgeLink is left under Local System and not started. Rerun the installer with the account typed as above.

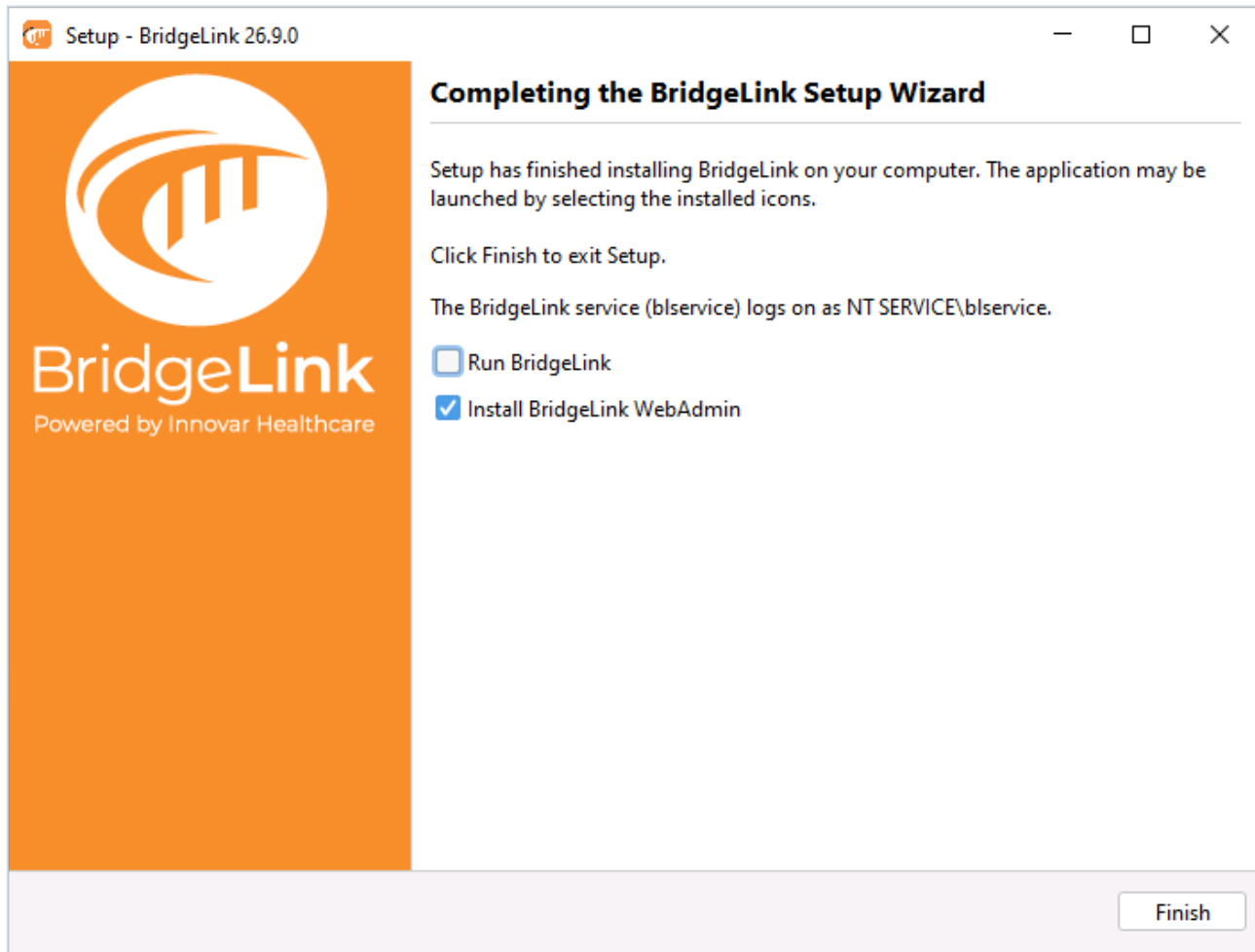


Figure 2: The last screen of the BridgeLink installer on Windows, showing the Run BridgeLink checkbox cleared and the Install BridgeLink WebAdmin checkbox checked, with the Finish button.

What the Installer Put on Disk

Path under C:\Program Files\BridgeLink	What it holds
conf\mirth.properties	The server's main settings file, including the database connection
appdata\	Created on first start: the keystore (the file that holds the server's certificate), the server.id file, and the Derby database files if you use Derby
blservice.vmoptions	The Java memory settings for BridgeLink Service (see Memory for the BridgeLink Server)
logs\mirth.log	The server log
BridgeLink-WebAdmin-Setup.exe	The WebAdmin installer, kept so you can run it again later

Installing Without the Screens

To script the .exe install, open Command Prompt as an administrator and run the installer with `-q` (quiet) and a response file:

```
BridgeLink_windows-x64_26_9_0.exe -q -varfile response.varfile
```

The response file holds one `name=value` answer per line, for example:

```
admin_port=8443
web_port=8080
service_account_type=Virtual service account
executeLauncherAction=false
```

Without that line, BridgeLink starts as soon as the install finishes, before you connect the database.

For an account of your own, set `service_account_type=Custom account...` and add `service_account_user` and `service_account_password`. Type each backslash in the user name twice, for example `service_account_user=MYDOMAIN\\svc-bridgelink` or `service_account_user=.\svc-bridgelink`.

A quiet install also runs the WebAdmin Setup without its screens and waits for it to finish. To skip WebAdmin, add `-VinstallWebAdmin=false` to the command. WebAdmin Setup writes its own log, `webadmin-setup.log`, in the BridgeLink install folder.

Using the Portable ZIP Instead

The ZIP has no Java, registers no service and does not run the WebAdmin wizard for you.

1. Install a 64-bit Java runtime on the server (see [Before You Run the Installer](#)).
2. Signed in as an administrator, extract the ZIP into `C:\Program Files`. In Explorer's **Extract All**, set the destination to exactly `C:\Program Files`, with no folder name after it. The ZIP creates the folder `C:\Program Files\BridgeLink`, the same folder the installer uses, so the paths in this guide apply as written. Check that `C:\Program Files\BridgeLink\conf` exists before you go on.

Do not extract to the root of the drive. A folder created directly under `C:\` gives every signed-in user **Modify** permission by inheritance, so any user could edit BridgeLink's files and `mirth.properties`. If you extract there anyway, the folder is `C:\BridgeLink`; remove that permission from it.

3. Give the account that will run BridgeLink **Modify** permission on that folder (see [The Service Account](#)).

4. Connect the database before the first start (see [Choosing and Connecting the Database](#)).

If you extracted the ZIP to C:\, open C:\BridgeLink\conf\mirth.properties where that chapter says C:\Program Files\BridgeLink\conf\mirth.properties, and use C:\BridgeLink in place of C:\Program Files\BridgeLink in every other path in this guide.

5. Run **BridgeLink-WebAdmin-Setup.exe** from the same folder to install WebAdmin (see [Installing WebAdmin](#)). Do this now, while you are signed in as an administrator, because WebAdmin Setup needs administrator rights.
6. Sign in to Windows as the account that will run BridgeLink, and make sure it is not an administrator.

BridgeLink refuses to run as an administrator, but that check is a backstop and does not catch every case. For example, an administrator who runs **blserver.exe** from a Command Prompt that is not elevated is not refused.

7. Open Command Prompt.
8. Go to the BridgeLink folder:

```
cd "C:\Program Files\BridgeLink"
```

9. Run **blserver.exe**. BridgeLink runs until you close that window.

For a server that keeps running after you sign out and restarts with Windows, use the installer instead.

CHAPTER 4

Choosing and Connecting the Database

Every BridgeLink server keeps its channels, messages, events, users and settings in one database. You choose which database in `conf\mirth.properties`, and you make that choice before BridgeLink starts for the first time.

Use an External Database, Not Derby

BridgeLink ships set to the default Derby database. Derby needs no setup, which makes it handy for a short test. Do not use it for a server you plan to keep:

- **Requires Java 21.** BridgeLink 26.9 will not start a server on the default Derby database with any Java older than 21. It stops at once and writes this line to `logs\mirth.log`:
`embedded Derby requires Java 21+ as of 26.9; upgrade Java or switch to an external database.` No setting turns this check off.
- **Runs inside BridgeLink.** Derby lives in the same process as the server, so no other tool can open the database while BridgeLink runs, and backing it up means copying its files.
- **Lacks features.** The default Derby database does not support the JSON value type in **Lookup Manager** or regex search in **Message Browser**. SQL Server does not support regex search either.
- **Sized for evaluation.** For production message volumes, use PostgreSQL, MySQL, Microsoft SQL Server or Oracle.

An external database also fits the backup, monitoring and security routines your team already runs.

Prepare the Database

1. On your database server, create an empty database for BridgeLink, for example `bridgelinkdb`.
2. Create a login for BridgeLink that owns that database and can create tables in it.

BridgeLink creates all of its tables the first time it starts. You do not run any scripts.

Point BridgeLink at the Database

1. Click **Start**.
2. Type `Notepad`.
3. Right-click **Notepad** and click **Run as administrator**.
4. In Notepad, click **File**, then **Open**.
5. In **File name**, type `C:\Program Files\BridgeLink\conf\mirth.properties` and click **Open**.

Notepad's **Open** dialog lists only **.txt** files by default, so the **conf** folder looks empty if you browse to it. Typing the full path in **File name** avoids that. If you browse instead, choose **All Files** in the file type list beside **File name**.

- Find the line `database = derby` and change `derby` to the value for your database from the table below. Type the value only, for example `postgres`.

The comment line above `database` reads `# options: derby, mysql, postgres, oracle, sqlserver`. Do not copy a value from it with its comma: `postgres`, stops BridgeLink at startup.

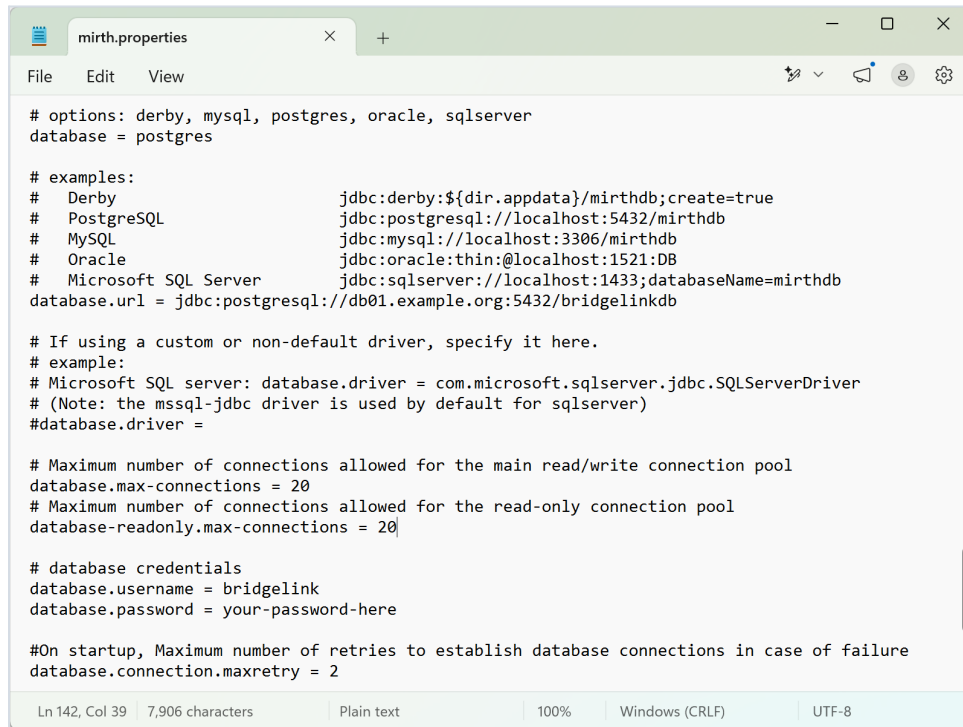
- Change the `database.url` line to your database's address, using the pattern in the table.
- Set `database.username` to the BridgeLink login.
- Set `database.password` to that login's password.
- Click **File**, then **Save**.

Database	database value	database.url pattern
PostgreSQL	postgres	<code>jdbc:postgresql://dbhost:5432/bridgelinkdb</code>
MySQL	mysql	<code>jdbc:mysql://dbhost:3306/bridgelinkdb</code>
Microsoft SQL Server	sqlserver	<code>jdbc:sqlserver://dbhost:1433;databaseName=bridgelinkdb</code>
Oracle	oracle	<code>jdbc:oracle:thin:@//dbhost:1521/serviceName</code> for a service name (pluggable databases), or <code>jdbc:oracle:thin:@dbhost:1521:SID</code> for a SID

SQL Server and certificates. BridgeLink 26.9 connects to SQL Server with encryption on and checks the server's certificate. If your SQL Server's certificate is self-signed, comes from an internal certificate authority, or does not match the host name in the URL, BridgeLink cannot connect. Either add that certificate, or its certificate authority, to the Java trust store BridgeLink uses, or add `;trustServerCertificate=true` to the end of the URL. That keeps the connection encrypted but does not check which server answered.

Replace `dbhost`, the port and the database name (for Oracle, the service name or SID) with your own. A finished PostgreSQL example looks like this:

```
database = postgres
database.url = jdbc:postgresql://db01.example.org:5432/bridgelinkdb
database.username = bridgelink
database.password = your-password-here
```



```
# options: derby, mysql, postgres, oracle, sqlserver
database = postgres

# examples:
# Derby          jdbc:derby:${dir.appdata}/mirthdb;create=true
# PostgreSQL     jdbc:postgresql://localhost:5432/mirthdb
# MySQL          jdbc:mysql://localhost:3306/mirthdb
# Oracle         jdbc:oracle:thin:@localhost:1521:DB
# Microsoft SQL Server  jdbc:sqlserver://localhost:1433;databaseName=mirthdb
database.url = jdbc:postgresql://db01.example.org:5432/bridgelinkdb

# If using a custom or non-default driver, specify it here.
# example:
# Microsoft SQL server: database.driver = com.microsoft.sqlserver.jdbc.SQLServerDriver
# (Note: the mssql-jdbc driver is used by default for sqlserver)
#database.driver =

# Maximum number of connections allowed for the main read/write connection pool
database.max-connections = 20
# Maximum number of connections allowed for the read-only connection pool
database-readonly.max-connections = 20

# database credentials
database.username = bridgelink
database.password = your-password-here

#On startup, Maximum number of retries to establish database connections in case of failure
database.connection.maxretry = 2
```

Figure 3: `conf\mirth.properties` open in Notepad on Windows, scrolled to the database section, showing `database = postgres`, a `database.url` line for the host `db01.example.org`, `database.username` filled in, and a placeholder password.

Protect this file. `mirth.properties` holds the database password, and the installer leaves it readable by every local user on the server (the `BUILTIN\Users` group has read access). Allow sign-in to this server only for users who are trusted with the database password. If you restrict the file yourself, keep the BridgeLink service account able to write to it: on first start, BridgeLink writes new keystore passwords into the file.

Leave the other lines as they are for now. The installer already set `https.port` and `http.port` from your answers, and the `keystore` lines are managed by BridgeLink.

CHAPTER 5

The Service Account

BridgeLink Service runs in the background under one Windows account. That account decides what BridgeLink can reach on the machine and on your network.

Why Not an Administrator

Channels can run scripts. If the service runs as an administrator, any script in any channel has full control of the machine. So you run the service as an account that is not an administrator, and BridgeLink backs that up with a check: by default, it refuses to start when it detects that it is running as an administrator. On Windows, that covers **Local System** and any account in the **Administrators** group. The log shows:

```
ERROR: BridgeLink is running as root/Administrator.
```

The setting behind this is `server.allowRoot = false` in `conf\mirth.properties`. Leave it set to `false`.

Treat the check as a backstop, not a guarantee. It can miss an administrator who runs `blserver.exe` (the Portable ZIP) from a Command Prompt that is not elevated, and it does nothing if the Windows **Server** service is turned off. Choose a non-administrator account yourself instead of relying on it.

The service account needs:

- The **Log on as a service** right
- **Modify** permission on the BridgeLink install folder, because BridgeLink writes its logs, its `appdata` folder and `conf\mirth.properties` there
- Read and write access to any folders your channels read from or write to
- Network access to the database and to the systems your channels connect to

The installer grants the first two for the account it sets up, whether that is the default virtual account `NT SERVICE\blservice` or an account of your own. The virtual account cannot sign in to other servers as a domain user, so if your channels read from a shared folder on another server, or the database uses Windows authentication, use an account of your own. Alternatively, because the virtual account reaches the network as the computer account (`MYDOMAIN\HOSTNAME$`, where `HOSTNAME` is this server's name), you can grant that computer account access to the share or to SQL Server instead.

Check Which Account BridgeLink Runs As

1. Click **Start**.
2. Type `services.msc` and press **Enter**.
3. Find **BridgeLink Service** and read its **Log On As** column.

It should show `NT SERVICE\blservice` or your own service account, for example `MYDOMAIN\svc-bridgelink`. If it shows **Local System**, BridgeLink will not start; change the account as described below.

In Command Prompt, this shows the same thing on the `SERVICE_START_NAME` line. Use Command Prompt, not PowerShell: in PowerShell, `sc` is a different command (**Set-Content**). If you must use PowerShell, type `sc.exe` instead.

```
sc qc blservice
```

Changing the Account After Install

To change the account after the install, use one of the ways below.

Changing the account? Give the new account the BridgeLink folder too. File permissions do not move with the service. The installer grants **Modify** on the install folder only to the account it sets up, so if you later switch **BridgeLink Service** to another account in **Services** or with `sc config`, the new account cannot write the files BridgeLink needs: `logs\`, `appdata\` and `conf\mirth.properties`. With an external database, the service then keeps running and answers on port 8443, but it writes nothing to `logs\mirth.log`, and Windows shows no error. Both ways below include the permission step. To check that the log is still being written, see [Troubleshooting](#).

To move the service to the virtual account, open Command Prompt (not PowerShell) as an administrator. Stop the service:

```
sc stop blservice
```

The service takes a moment to stop. Run this command again until the `STATE` line shows **STOPPED**:

```
sc query blservice
```

Then run these commands, using your install folder. Starting before the service has stopped can fail with error 1056:

```
sc config blservice obj= "NT SERVICE\blservice"
icacls "C:\Program Files\BridgeLink" /grant "NT SERVICE\blservice:(OI)(CI)M"
sc start blservice
```

To move the service to an account of your own, first make sure the account exists. A domain account comes from your directory team. A local account is created in **Computer Management**, under **Local Users and Groups**. Then:

1. Click **Start**.

2. Type `services.msc` and press **Enter**.
 3. Right-click **BridgeLink Service** and click **Stop**.
 4. Right-click **BridgeLink Service** and click **Properties**.
 5. Click the **Log On** tab.
 6. Select **This account**.
 7. Type the new account in **This account**, for example `MYDOMAIN\svc-bridgelink`.
 8. Type its password in **Password**.
 9. Type it again in **Confirm password**.
 10. Click **OK**.
 11. Click **Start**.
 12. Type `cmd`.
 13. Right-click **Command Prompt** and click **Run as administrator**.
 14. In Command Prompt, run this command, using your install folder and the new account. For a local account, leave off the domain: `svc-bridgelink:(OI)(CI)M`.
- ```
icacls "C:\Program Files\BridgeLink" /grant "MYDOMAIN\svc-bridgelink:(OI)(CI)M"
```
15. Grant the new account the same access to any folders your channels use.
  16. In **Services**, right-click **BridgeLink Service** and click **Start**, or **Restart** if it is already running.

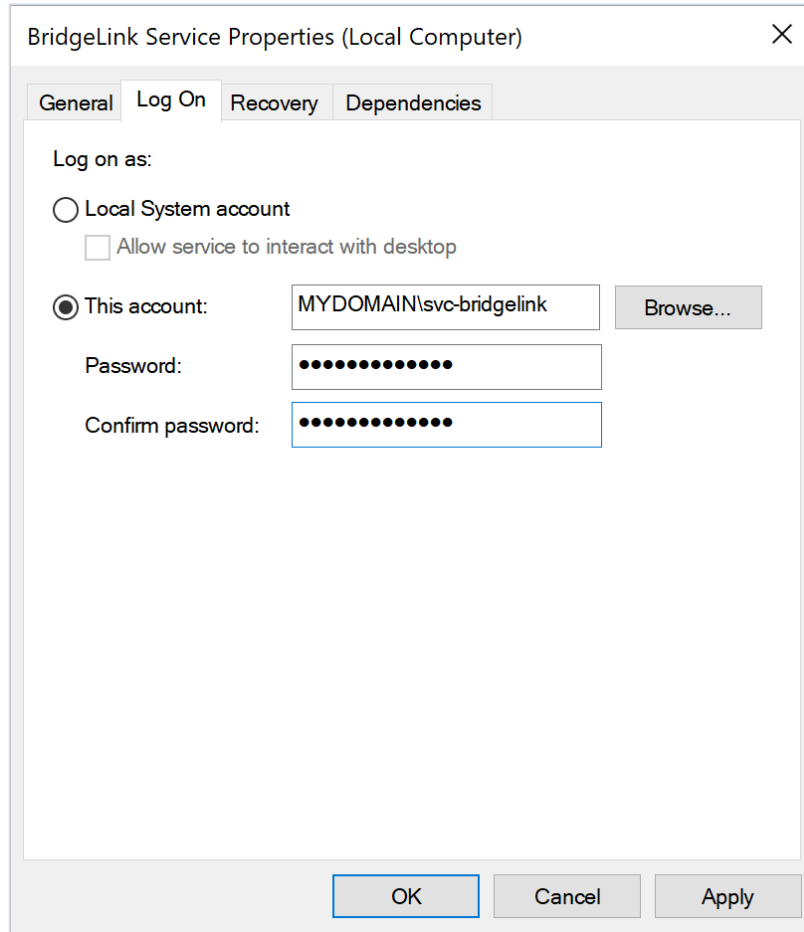


Figure 4: The Properties dialog for BridgeLink Service in the Windows Services console, on the Log On tab, with This account selected and a made-up account MYDOMAIN\svc-bridgelink entered, and the password fields masked.

The **(OI)(CI)M** part grants **Modify** on the folder and everything inside it, including files BridgeLink creates later. Once the new account works, you can remove the old account's permission on the folder.

The **Services** console gives the account the **Log on as a service** right when you click **OK**. If you set an account of your own with a command (`sc config`) instead, grant that right yourself with the steps below; the command does not grant it. The virtual account needs no extra step, because Windows already lets every virtual service account log on as a service.

To grant the **Log on as a service** right yourself:

1. Click **Start**.
2. Type `secpol.msc` and press **Enter**.
3. Under **Local Policies**, click **User Rights Assignment**.
4. Double-click **Log on as a service**.
5. Click **Add User or Group**.

6. In **Enter the object names to select**, type the account, for example `MYDOMAIN\svc-bridgeline`.
7. Click **OK**.
8. Click **OK** again to close the **Log on as a service Properties** dialog.

## CHAPTER 6

## Starting BridgeLink for the First Time

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Start the service once the database is connected and the service account is set.

1. Click **Start**.
2. Type `services.msc` and press **Enter**.
3. Right-click **BridgeLink Service** and click **Start**.
4. Wait about a minute.
5. Click **Start**.
6. Type `Notepad` and press **Enter**.
7. In Notepad, click **File**, then **Open**.
8. In **File name**, type `C:\Program Files\BridgeLink\logs\mirth.log` and click **Open**.
9. Press **Ctrl+End** to go to the end of the file.
10. Find the newest line that contains `Web server running at`.
11. Check that the time on that line is after the start you just made. That line is the sign that BridgeLink started and is listening on port **8443**.
12. Find the newest line that contains `Running`, to check the database name and Java version.
13. Confirm the line names your database, not `derby`. It also names the Java version and the operating system.

The `Web server running at` line is the one to trust. If BridgeLink cannot read its keystore or write its files, the log can still show `server successfully started` and the `Running` line, but there is no `Web server running at` line and port **8443** refuses connections. If you do not find that line a minute or so after the start, see [Troubleshooting](#).

On this first start, BridgeLink:

- Creates its tables in your database
- Creates the `appdata` folder
- Creates a keystore (the file that holds the server's certificate) with a new self-signed certificate for port **8443**, and writes new keystore passwords into `conf\mirth.properties`
- Creates the `appdata\server.id` file that holds this server's unique ID

**BridgeLink Service** is set to start with Windows from now on. If the service stops right away, see [Troubleshooting](#).

## Memory for the BridgeLink Server

BridgeLink starts with a 256 MB Java heap, which is enough for a personal or test install but small for production. To change it:

1. Click **Start**.
2. Type **Notepad**.
3. Right-click **Notepad** and click **Run as administrator**.
4. In Notepad, click **File**, then **Open**.
5. In **File name**, type `C:\Program Files\BridgeLink\blservice.vmoptions` and click **Open**.
6. Change the `-Xmx256m` line to a larger value, for example `-Xmx1g`. Leave memory for Windows and the database.
7. Click **File**, then **Save**.
8. In **Services**, right-click **BridgeLink Service** and click **Restart**.

The Portable ZIP runs `blserver.exe`, which reads `blserver.vmoptions` in its own folder instead.

## CHAPTER 7

## Installing WebAdmin

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WebAdmin is the browser-based tool you use to manage BridgeLink. It runs as its own small service, next to BridgeLink, and nobody needs to install anything on their own computer to use it.

On Windows, WebAdmin setup is a second installer that comes inside the BridgeLink installer. When you leave **Install BridgeLink WebAdmin** checked and click **Finish**, the WebAdmin setup wizard opens. If you closed it, or used the ZIP, run [BridgeLink-WebAdmin-Setup.exe](#) from the BridgeLink install folder. The wizard does not open when the BridgeLink installer runs without its screens (a silent install), but the silent install still installs WebAdmin unless its `installWebAdmin` option is set to `false`. See [Installing Without the Screens](#).

### Run the WebAdmin Setup Wizard

1. If Windows asks whether to allow the app to make changes, click **Yes**.
2. On **License Agreement**, read the Business Source License 1.1, the license WebAdmin is released under.
3. Select **I accept the agreement**.
4. Click **Next**.
5. On **Supplemental Terms**, read the BridgeLink WebAdmin Supplemental Terms.
6. Select **I accept the Supplemental Terms**.
7. Click **Next**.
8. On **Select Destination Location**, keep `C:\Program Files\BridgeLink WebAdmin`.
9. Click **Next**.
10. On **Select Additional Tasks**, leave **Install as Windows Service (auto-start at boot)** checked.
11. Click **Next**.
12. On **Select Start Menu Folder**, keep `BridgeLink WebAdmin`. The sign-in steps below use that shortcut.
13. Click **Next**.
14. On **Port Configuration**, keep `8444`.
15. Click **Next**.
16. On **BridgeLink Server**, select **Same Host (Recommended)**.
17. Click **Next**.
18. On **BridgeLink Engine Port**, check that the port is `8443`, the same as **Administrator Port** in the BridgeLink installer.

19. Click **Next**.
20. On **Ready to Install**, click **Install**.
21. When it finishes, click **Finish**.

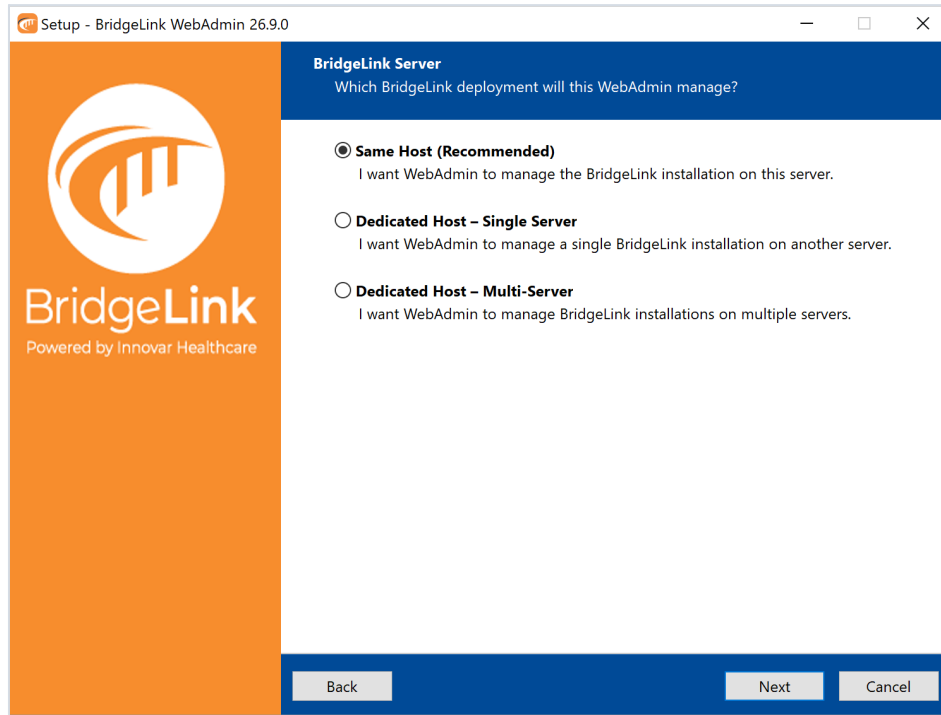


Figure 5: The WebAdmin setup wizard's BridgeLink Server page on Windows, showing the Same Host (Recommended), Dedicated Host – Single Server and Dedicated Host – Multi-Server options, with Same Host (Recommended) selected.

The wizard:

- Installs and starts the Windows service **BridgeLinkWebAdmin**, set to start with Windows
- Creates a self-signed certificate for WebAdmin at `C:\ProgramData\BridgeLink\certs\server.crt` and `server.key`, and trusts it on this machine
- Adds the Windows Firewall rule **BridgeLink WebAdmin HTTPS** for port 8444

To put WebAdmin on a different machine, download **BridgeLink WebAdmin Standalone** from the download page, run it there, and choose **Dedicated Host – Single Server** with this server's address.

## Sign In for the First Time

Sign in only after the BridgeLink database is connected and **BridgeLink Service** is running (see [Starting BridgeLink for the First Time](#)). Before that, WebAdmin cannot reach the server.

1. Open the Windows **Start** menu and type **BridgeLink WebAdmin**.

2. Under **Websites**, click **BridgeLink WebAdmin**. Your browser opens WebAdmin. Do not click the **Best match** result, **BridgeLink WebAdmin (docs)**, which opens a folder.  
To skip the Start menu, open <https://localhost:8444> in a browser on this server instead.

3. If the browser shows a certificate warning, click **Advanced**, then **Proceed to ... (unsafe)** in Chrome or **Continue to ... (unsafe)** in Edge. In Firefox, click **Advanced**, then **Accept the Risk and Continue**. Read the note after this step.

**When a browser stops letting you click through.** WebAdmin tells browsers to accept only a valid certificate for its server name and every name under it, on every port, for two years. This is called HSTS. A browser starts enforcing it the first time it opens WebAdmin with a certificate it trusts, for example after you install your own certificate (see [Replacing the Certificates](#)). Clicking through a warning does not start it. On the Windows server itself, the WebAdmin installer trusts its own certificate, so a browser there that opens WebAdmin by the computer name, as the Start menu shortcut does, enforces HSTS from its first visit. `localhost` and IP addresses are never affected. Once a browser enforces HSTS for a name, it also refuses BridgeLink's default certificate on port 8443 at that name.

4. In **Username**, type `admin`.
5. In **Password**, type `admin`.
6. Click **Login**.
7. On **Welcome to BridgeLink**, leave **Username** as `admin`.
8. In **New Password**, type a new password of at least 8 characters, with an uppercase letter, a lowercase letter, a number, and a special character such as `!`, `@`, `#`, `$`, `%` or `*`. A hyphen, period or space does not count as a special character, and the password cannot be `admin`. WebAdmin lists only the rules that `admin` breaks, so check your password against all of these.
9. Type it again in **Confirm Password**.
10. The profile fields on **Welcome to BridgeLink** are optional; fill them in if you want to.
11. Click **Save & Continue**.

Figure 6: The WebAdmin sign-in screen in a browser, showing the Server field filled in and read-only for a Same Host install, the Username and Password fields, and the Login button.

To open WebAdmin from another computer, go to <https://your-computer-name:8444>, using this server's name. It is the same address the **BridgeLink WebAdmin** shortcut opens here.

## Stopping, Starting and Restarting WebAdmin

WebAdmin runs as the Windows service **BridgeLinkWebAdmin**, separate from **BridgeLink Service**.

1. Click **Start**.
2. Type `services.msc` and press **Enter**.
3. Right-click **BridgeLinkWebAdmin** and click **Stop**, **Start** or **Restart**.

WebAdmin writes its output and errors to `service.log` and `service-error.log` in the `logs` folder of its install folder, `C:\Program Files\BridgeLink WebAdmin\logs`. The **BridgeLink WebAdmin Setup Guide** lists every file the installer creates.

## More WebAdmin Setups

For WebAdmin on another machine, one WebAdmin for several servers, your own certificate, and every setting, see the **BridgeLink WebAdmin Setup Guide** on the BridgeLink download page, <https://www.bridgelink.net/download>.

## CHAPTER 8

## Finding the Server ID

Every BridgeLink server has a unique server ID, created the first time it starts. Plugin licenses are issued against this ID, so Innovar Healthcare asks for it when you license a plugin.

### In WebAdmin

1. Sign in to WebAdmin.
2. In the left sidebar, scroll to the bottom and, under **Help**, click **About BridgeLink**.  
If **Update Available** opens instead, click **Got it**, then click **About BridgeLink** again.
3. Click the copy icon beside **Server ID**.

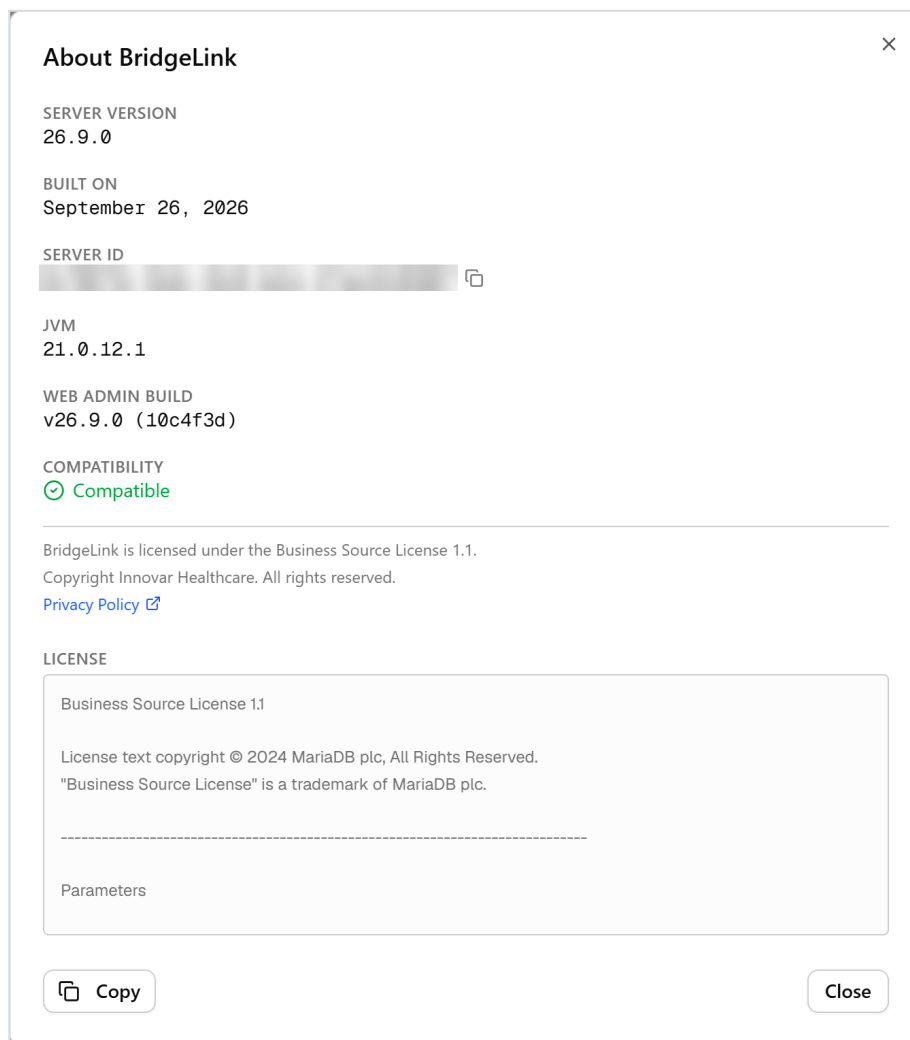


Figure 7: The About BridgeLink dialog in WebAdmin, showing the Server Version, Built On, Server ID (blurred here, with its copy icon), JVM, Web Admin Build and Compatibility rows.

## On Disk

The same ID is in `C:\Program Files\BridgeLink\appdata\server.id`, on a line that reads `server.id =` followed by the ID.

Back up `appdata\server.id`, `appdata\keystore.jks` and `conf\mirth.properties` from `C:\Program Files\BridgeLink` together. The keystore holds the key BridgeLink uses to encrypt data, and `mirth.properties` holds the keystore's passwords. If you rebuild the server and put the `server.id` file back before BridgeLink first starts, the server keeps its ID and its plugin licenses. Without the file, BridgeLink creates a new ID.

## CHAPTER 9

## Replacing the Certificates

A new install uses two self-signed certificates (certificates the server creates for itself, which browsers do not trust), which is why browsers warn the first time. Before you use BridgeLink in production, replace them with certificates from your organization's certificate authority (CA).

| Certificate       | Port | Who sees it                                            | Where it lives                                                             |
|-------------------|------|--------------------------------------------------------|----------------------------------------------------------------------------|
| WebAdmin          | 8444 | Every browser that opens WebAdmin                      | C:\ProgramData\BridgeLink\certs\server.crt and server.key                  |
| BridgeLink server | 8443 | WebAdmin and any program that calls the BridgeLink API | The mirthconnect entry in C:\Program Files\BridgeLink\appdata\keystore.jks |

Most organizations replace the WebAdmin certificate first, since that is the one users see in their browsers.

### Convert a .pfx File to PEM

WebAdmin needs its certificate and private key as PEM files (text files that begin with -----BEGIN). Windows certificate authorities usually issue a .pfx file instead, and Windows has no `openssl` command of its own. Skip this section if your CA gave you PEM files, or ask the CA for PEM files instead.

OpenSSL comes with Git for Windows. These steps use its **Git Bash** shell:

1. Open **Git Bash** from the **Start** menu.
2. Go to the folder that holds your .pfx file, for example:

```
cd /c/certs
```

3. Extract the certificate, and type the .pfx file's password when OpenSSL asks for it:

```
openssl pkcs12 -in server.pfx -nokeys -out webadmin.crt -legacy
```

4. Extract the private key without a password on the key file:

```
openssl pkcs12 -in server.pfx -nocerts -nodes -out webadmin.key -legacy
```

If OpenSSL rejects the `-legacy` option, run steps 3 and 4 again without it.

5. Open `webadmin.crt` in Notepad and check that your server's certificate is the first certificate in the file, followed by any intermediate certificates.

## Replace the WebAdmin Certificate

You need the certificate and its private key as PEM files. Put any intermediate certificates in the certificate file after the server certificate. The private key file must not have a password.

Name the two files something other than `server.crt` and `server.key`, and point WebAdmin at them in `webadmin.conf`. Each time you run `BridgeLink-WebAdmin-Setup.exe` again (for a repair, an upgrade, or the port fix in [Troubleshooting](#)), Setup deletes a `server.crt` and `server.key` whose certificate does not name this computer, and creates new self-signed ones. Files with other names, and the two lines in `webadmin.conf`, are kept. The steps below use `webadmin.crt` and `webadmin.key`.

Before you replace WebAdmin's certificate, read **When a browser stops letting you click through** under [Sign In for the First Time](#) in [Installing WebAdmin](#). Make sure the browsers of WebAdmin users trust the new certificate, and that it names the address they type, for example `your-computer-name`. If a browser cannot open WebAdmin after the swap, undo it with the steps under [To Undo the Swap](#).

1. In **Services**, right-click **BridgeLinkWebAdmin** and click **Stop**.
2. Open Command Prompt as administrator.
3. Limit the certificate folder to SYSTEM and Administrators, so other users on this server cannot read the private key:

```
icacls "C:\ProgramData\BridgeLink\certs" /inheritance:r /grant:r
↳ "SYSTEM:(OI)(CI)F" "Administrators:(OI)(CI)F"
```

On Windows in another language, the group names differ; use the language-independent form `icacls "C:\ProgramData\BridgeLink\certs" /inheritance:r /grant:r "*S-1-5-18:(OI)(CI)F" "*S-1-5-32-544:(OI)(CI)F"`.

4. Copy your certificate into `C:\ProgramData\BridgeLink\certs` and name it `webadmin.crt`.
5. Copy your private key into the same folder and name it `webadmin.key`. Delete any other copy of the key that other users can read, for example in your **Downloads** folder.
6. Open `webadmin.conf` in Notepad from the same Command Prompt:

```
notepad "C:\Program Files\BridgeLink WebAdmin\webadmin.conf"
```

7. Add these two lines at the end of the file. Write each path without quotes: WebAdmin reads everything after the `=` as the path, so quotes become part of it. If the file already has `SSL_CERT_FILE` or `SSL_KEY_FILE` lines, change them instead of adding a second pair.

```
SSL_CERT_FILE=C:\ProgramData\BridgeLink\certs\webadmin.crt
SSL_KEY_FILE=C:\ProgramData\BridgeLink\certs\webadmin.key
```

8. Click **File**, then **Save**, and close Notepad.

9. In **Services**, right-click **BridgeLinkWebAdmin** and click **Start**.
10. Open WebAdmin in a browser and confirm there is no certificate warning.

Setup keeps the two lines as long as both are set and both files exist. If you move or delete a file, Setup goes back to a self-signed certificate and says so on screen, or, in a silent install, in its log under `C:\Program Files\BridgeLink WebAdmin\logs`.

### To Undo the Swap

If browsers cannot open WebAdmin after the swap, put the self-signed certificate back in use:

1. In **Services**, right-click **BridgeLinkWebAdmin** and click **Stop**.
2. In Command Prompt as administrator, open `webadmin.conf` in Notepad:

```
notepad "C:\Program Files\BridgeLink WebAdmin\webadmin.conf"
```

3. Delete the `SSL_CERT_FILE` and `SSL_KEY_FILE` lines.
4. Click **File**, then **Save**, and close Notepad.
5. In **Services**, right-click **BridgeLinkWebAdmin** and click **Start**.

WebAdmin then uses the self-signed `server.crt` and `server.key` in `C:\ProgramData\BridgeLink\certs` again.

Browsers that opened WebAdmin by its server name with the new certificate refuse the old self-signed one. Fix the new certificate instead, or clear the browser's HSTS entry for the server name: open `chrome://net-internals/#hsts` in Chrome or `edge://net-internals/#hsts` in Edge, and use **Delete domain security policies**. In other browsers, clear the browsing data for that server name.

### Replace the BridgeLink Server Certificate

BridgeLink keeps its certificate in a keystore file under the name `mirthconnect`. The same keystore also holds the key BridgeLink uses to encrypt data, so replace only the `mirthconnect` entry. Never swap in a different keystore file.

You need the certificate and private key as a PKCS12 file (a single file, ending in `.p12` or `.pfx`, that bundles a certificate with its private key) and its password. The commands use `keytool`, which comes with the Java you installed. If Command Prompt cannot find it, run it from that Java's `bin` folder.

In the commands below, replace each value in angle brackets, including the brackets, with your own:

- `C:\certs\server.p12`: an example path, not a file on your server. Use the path to your own PKCS12 file.

- <your keystore.storepass value> and <your keystore.keypass value>: the values of keystore.storepass and keystore.keypass that you note in step 7
- <your .p12 file password>: the password of your .p12 or .pfx file, which whoever exported it chose
- <the entry name from step 4>: the entry name that keytool lists in step 4

Type the real values. If you leave a placeholder or a stand-in such as **STOREPASS** in a command, **keytool** stops with "Keystore was tampered with, or password was incorrect".

1. In **Services**, right-click **BridgeLink Service** and click **Stop**.
2. Open Command Prompt as administrator.
3. Go to the BridgeLink folder:

```
cd "C:\Program Files\BridgeLink"
```

4. List the entry name inside your PKCS12 file. **keytool** asks for the file's password and shows nothing as you type, not even dots. Type the password and press **Enter**:

```
keytool -list -keystore C:\certs\server.p12 -storetype PKCS12
```

5. Copy C:\Program Files\BridgeLink\appdata\keystore.jks to a safe place as a backup:

```
copy "C:\Program Files\BridgeLink\appdata\keystore.jks"
↳ "%USERPROFILE%\keystore.jks.bak"
```

6. In Notepad, click **File**, then **Open**, and open C:\Program Files\BridgeLink\conf\mirth.properties by typing the full path in **File name**.
7. Note the values of keystore.storepass and keystore.keypass.
8. Remove the old certificate entry:

```
keytool -delete -alias mirthconnect -keystore appdata\keystore.jks ^
-storetype JCEKS -storepass <your keystore.storepass value>
```

9. Import yours as mirthconnect:

```
keytool -importkeystore -srckeystore C:\certs\server.p12 -srcstoretype PKCS12 ^
-srcstorepass <your .p12 file password> ^
-srcalias <the entry name from step 4> ^
-destkeystore appdata\keystore.jks -deststoretype JCEKS ^
-deststorepass <your keystore.storepass value> ^
-destalias mirthconnect -destkeypass <your keystore.keypass value>
```

Steps 8 and 9 print a warning that recommends migrating the keystore to PKCS12. Ignore it: BridgeLink reads the keystore as JCEKS, so do not convert it.

10. In **Services**, right-click **BridgeLink Service** and click **Start**.

11. Open <https://your-computer-name:8443> in a browser and confirm the browser shows your certificate.

WebAdmin keeps working through the change, with no change to its own settings.

**If BridgeLink does not start, or port 8443 does not answer:** stop BridgeLink, run `copy /Y "%USERPROFILE%\keystore.jks.bak" "C:\Program Files\BridgeLink\appdata\keystore.jks"` in Command Prompt as administrator, and start BridgeLink.

## CHAPTER 10

## The Data Pruner

---

BridgeLink keeps the messages each channel processes until the Data Pruner removes them. The Data Pruner is off on a new server, so turn it on before you send real traffic through BridgeLink; otherwise the database grows with every message.

It has two parts, and both have to be set:

- **The schedule, for the whole server:** in WebAdmin, in the left sidebar under **Administration**, click **Settings**, then the **Data Pruner** tab
- **How long each channel keeps messages:** on each channel's **Summary** tab, under **Message Pruning**. A channel whose pruning fields are blank is never pruned, even when the schedule is on.

Choose ages that match your organization's record-keeping rules.

### Turn On the Schedule

1. In WebAdmin, in the left sidebar under **Administration**, click **Settings**.
2. Click the **Data Pruner** tab.
3. Under **Schedule**, set **Enable** to **Yes**.
4. Choose a **Schedule Type** and set when it runs: **Interval** runs every set number of hours or minutes, **Time** runs once a day, and **Cron** takes cron expressions. Once a day at a quiet hour suits most servers.
5. Click **Save**.

**Settings**

Server Administrator Tags Configuration Map Resources **Data Pruner** Message Trends Version History

**Status**

Current State: **Not running**

Current Process: -

Last Process: -

Next Process: Scheduled Monday, Sep 28, 1:00:00 AM

**Schedule**

Enable: ☒ Yes ☐ No

Schedule Type: **Time**

Time (HH : MM): **1** : **0**

**Prune Settings**

Block Size: **1000** (50–10000, recommended: 1000)

Prune Events: ☒ Yes ☐ No

Prune Event Age: **90** days

**Archive Settings**

Enable Archiving: ☐ Yes ☒ No

Figure 8: The Data Pruner tab of the Settings page, showing the Status section, the Schedule section with Enable set to Yes and Schedule Type set to Time, the Prune Settings section and the Archive Settings section.

## Set How Long Each Channel Keeps Messages

1. In the left sidebar under **Build**, click **Channels**.
2. Double-click the channel to open it in the channel editor.
3. On the **Summary** tab, under **Message Pruning**, enter the number of days in **Prune metadata after** and **Prune content after**. Content cannot be kept longer than metadata.
4. Click **Save**.
5. Repeat for each channel.

**Message Pruning**

Prune metadata after **30** days

Prune content after **7** days

☒ Archive messages before pruning

☐ Prune errored messages

*(incomplete, errored, and queued messages will not be pruned)*

Figure 9: The Message Pruning section of a channel's Summary tab, showing Prune metadata after set to 30 days, Prune content after set to 7 days, Archive messages before pruning checked and Prune errored messages cleared.

Incomplete and queued messages are never pruned. Errored messages are kept too, unless you check **Prune errored messages**.

## CHAPTER 11

# Troubleshooting

| Symptom                                                                                                                                                                                                                                                                  | Likely cause                                                                                                                                                                                                                                                                                     | What to do                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BridgeLink Service</b> will not start: <b>Services</b> shows a progress bar, then a blank <b>Status</b> and no error, <code>sc query blservice</code> shows exit code 1067, and <code>logs\mirth.log</code> shows ERROR: BridgeLink is running as root/Administrator. | The service runs as <b>Local System</b> or as an account in <b>Administrators</b>                                                                                                                                                                                                                | Switch the service to the virtual account or another non-administrator account. See <a href="#">Changing the Account After Install</a> . Windows also records event 7034 for this case, so read <code>logs\mirth.log</code> to tell it apart from the Derby and database startup failures in the rows below. |
| The service stops at once, and the log shows embedded Derby requires Java 21+ as of 26.9; upgrade Java or switch to an external database                                                                                                                                 | The server is still on the default Derby database, running on Java older than 21                                                                                                                                                                                                                 | Connect an external database. See <a href="#">Point BridgeLink at the Database</a> .                                                                                                                                                                                                                         |
| <b>BridgeLink Service</b> shows <b>Running</b> and answers on port 8443, but nothing new is written to <code>logs\mirth.log</code>                                                                                                                                       | The service account cannot write to the BridgeLink folder                                                                                                                                                                                                                                        | Check the time on the newest line inside <code>mirth.log</code> , not the file's modified time, which Windows leaves out of date while the file is open. Grant the account <b>Modify</b> on the install folder with <code>icacls</code> . See <a href="#">Changing the Account After Install</a> .           |
| The service will not start and Windows shows "Error 1069: The service did not start due to a logon failure."                                                                                                                                                             | The account's password is wrong, or it lacks the <b>Log on as a service</b> right                                                                                                                                                                                                                | Re-enter the password on the service's <b>Log On</b> tab and click <b>OK</b> . Windows grants the right when you save there.                                                                                                                                                                                 |
| The log shows "Error establishing connection to database, aborting startup". <b>Services</b> can keep showing <b>Running</b> until you refresh it with F5.                                                                                                               | The <code>database.url</code> , login or password is wrong, or a firewall blocks the database port. SQL Server only: its certificate is self-signed, comes from an internal certificate authority, or does not match the host name in the URL, which BridgeLink 26.9 does not accept by default. | Check the four database lines in <code>conf\mirth.properties</code> and test the login from the BridgeLink server. See <a href="#">SQL Server and certificates</a> in <a href="#">Choosing and Connecting the Database</a> . BridgeLink retries twice, 10 seconds apart, before it gives up.                 |

| Symptom                                                                                                                         | Likely cause                                                                                                                                                                | What to do                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The log shows Failed to load class of driverClassName null                                                                      | The database value in conf\mirth.properties is not exactly postgres, mysql, sqlserver or oracle, for example postgres, with the comma copied from the comment line above it | Type the value only, with no comma. See <a href="#">Point BridgeLink at the Database</a> .                                                                                                                                                                                                                                                                                                               |
| WebAdmin sign-in shows "Could not reach the BridgeLink server. Verify the server address is correct and the server is running." | <b>BridgeLink Service</b> is not running, or WebAdmin points at the wrong BridgeLink port                                                                                   | Start <b>BridgeLink Service</b> . If you changed BridgeLink's HTTPS port, rerun BridgeLink-WebAdmin-Setup.exe and set that port on its <b>BridgeLink Engine Port</b> page.                                                                                                                                                                                                                               |
| The browser warns about the certificate                                                                                         | WebAdmin still uses its self-signed certificate                                                                                                                             | Click through the warning, or replace the certificate. See <a href="#">Replace the WebAdmin Certificate</a> . If the browser offers no way to continue, it is enforcing HSTS for that name. See <b>When a browser stops letting you click through</b> under <a href="#">Sign In for the First Time</a> , and <a href="#">To Undo the Swap</a> in <a href="#">Replacing the Certificates</a> to clear it. |
| Stopping or restarting <b>BridgeLink Service</b> hangs and Windows shows Error 1053 while the database is down                  | The service waits for the database connection                                                                                                                               | Start the database. The stop then finishes.                                                                                                                                                                                                                                                                                                                                                              |
| On Java 21, every start logs a WARN line saying JVM default charset is UTF-8 but the host (native) encoding is Cp1252           | This is expected on a new install                                                                                                                                           | No action needed, unless you import channels from a Windows server that ran Java 17 or earlier; then set server.defaultencoding = windows-1252 in conf\mirth.properties.                                                                                                                                                                                                                                 |

For more WebAdmin problems, see [Troubleshooting](#) in the **BridgeLink WebAdmin Setup Guide**.

## Support

Customers with an active Innovar Healthcare support plan can contact support at [support@innovarhealthcare.com](mailto:support@innovarhealthcare.com). Include the BridgeLink version, the package you installed, what you were doing, and the most recent part of logs\mirth.log. mirth.log can contain message content, which may include patient data. Remove patient data before you send a log, or ask support for a secure way to send it.